2016-2017

ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

COAL COMBUSTION RESIDUALS (CCR) RULE

D.B. WILSON CCR LANDFILL
OHIO COUNTY, KENTUCKY

Prepared for:

Big Rivers Electric Corporation
D.B. Wilson Generating Station
5663 State Route 85 West
Centertown, Kentucky 42328

January 2018

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1.0 INTRODUCTION

At the request of Big Rivers Electric Corporation (BREC), AECOM Technical Services, Inc. (AECOM) prepared this 2016-2017 Annual Groundwater Monitoring and Corrective Action Report for the BREC D.B. Wilson Coal Combustion Residuals (CCR) Landfill (Wilson Phase II Landfill), located in Ohio County, Kentucky. This report was prepared in accordance with Part 257.90, Sub-Part (e) of the United States Environmental Protection Agency (USEPA) CCR Rule. The CCR Rule was established to regulate the disposal of CCR produced by electricity generating facilities (USEPA, 2015).

This report summarizes all activities related to the CCR Rule groundwater monitoring program at the Wilson Phase II Landfill through 2017. The following sections present a site background summary, a discussion of field activities performed, a summary of laboratory results, statistical evaluation findings, and conclusions regarding groundwater conditions in the aquifer system subject to monitoring under the CCR Rule.

1.1 Site Background

The Wilson Phase II Landfill is located in Ohio County approximately 5 miles northwest of the town of Centertown, Kentucky. The property is located northwest and adjacent to the D.B. Wilson Generating Station (Wilson Station). The Wilson Phase II Landfill is a Kentucky permitted landfill that receives special wastes generated by burning coal (CCRs) from Wilson Station. The current Wilson Phase II Landfill footprint is approximately 92 acres (**Figure 1**).

As stated in the published CCR monitoring well network certification (http://www.bigrivers.com/ccr-rule-compliance-wilson-station/), the Wilson Phase II CCR Landfill is raised above adjacent ground to a maximum elevation of approximately 520 feet above mean sea level (AMSL). The original ground surface within the landfill footprint was an irregular post-mining surface.

2.0 2016 – 2017 ACTIVITIES SUMMARY

The following subsections describe the activities that were performed in 2016 and 2017 for the Wilson Phase II Landfill related to the CCR Groundwater Monitoring Network.

2.1 Monitoring Well System

Prior to implementation of the CCR Rule, a groundwater monitoring well network was already present at the Wilson Phase II Landfill related to requirements stated within the operating permit. The existing wells were located along the perimeter of the permitted footprint for the Wilson Phase II Landfill. The CCR Rule requires that downgradient monitoring wells must be located at the waste boundary of the (active) CCR unit, or as close as practical.

Under the requirements stated in the operating permit, five monitoring wells (MW-5, MW-6, MW-7, MW-8 and MW-10) were installed adjacent to the Wilson Phase II CCR Landfill to determine the general direction of groundwater movement and to monitoring groundwater at the site. MW-8 is located north of the landfill and is considered upgradient. MW-5, MW-6 (both west of the landfill), MW-7 (southwest of the landfill) and MW-10 (south of the landfill) are considered as downgradient. As-built specifics of each well installation are summarized on **Table 1**. The locations of the groundwater monitoring wells are shown on the **Figure 2**. Each well has a dedicated bladder pump and tubing system installed for sampling purposes.

As stated in the CCR monitoring well network certification, the stratigraphic interval considered as the most prominent water-transmitting zone within and adjacent to the Wilson Station is material identified as reclaimed surface mining spoil material comprised of disrupted consolidated sandstone and shale of the Carbondale Formation. The United States Geological Survey (USGS) Geologic Map of the Equality

Quadrangle describes this sequence as “Sandstone, siltstone, shale, coal and underclay: Sandstone, light- to medium-gray, fine-grained, massive, micaceous, locally grades into thin-bedded siltstone. Siltstone, light- to medium-gray and yellowish-brown.” For purposes of compliance with the USEPA Disposal of CCR from Electric Utilities; Final Rule groundwater monitoring requirements; this disrupted sequence comprising the unconsolidated mine spoil is considered to be the uppermost aquifer underlying the Wilson Phase II Landfill.

A report of the well installation and details about the monitoring network is available in the *Monitoring Well Completion Report, D.B. Wilson Special Waste Landfill, Solid Waste Permit Number 092-00004, Ohio County* dated April 13, 2009 and maintained within the operating record at Wilson Station.

In accordance with 40 Code of Federal Regulations (CFR) § 257.91(e)(1), the CCR monitoring network for the Wilson Phase II Landfill was certified by a Professional Engineer on June 28, 2016. A copy of the Groundwater Monitoring System Certification document is available on the public website for CCR Activities maintained by BREC (http://www.bigrivers.com/ccr-rule-compliance-wilson-station/).

2.2 Baseline Groundwater Sampling

Nine groundwater sampling events were conducted at Wilson Phase II Landfill between April 2016 and October 2017. The following table summarizes the dates of each of the sampling events for the baseline period and the wells included in the events.

Event Type	Sampling Event	Dates	Wells Sampled
Baseline Groundwater Sampling	1	April 4 - 5, 2016	Background (Upgradient) MW-8 Downgradient MW-5, MW-6, MW-7. MW-10
	2	May 18 - 20, 2016	
	3	August 25, 2016	
	4	October 3, 4, and 6, 2016	
	5	February 15 and 17, 2017	
	6	May 17 - 18, 2017	
	7	August 15, 16, and 18, 2017	
	8	September 28 - 29, 2017	
	9	October 12 – 13, 2017	

Monitoring wells were sampled using low-flow sampling methods in accordance with the operating-permit *Groundwater Monitoring Plan, D.B. Wilson Special Waste Landfill Facility, Solid Waste Permit Number 092-00004, Ohio County* dated February 1994 (amended October 2002) and maintained within the operating record at Wilson Station.

Baseline groundwater sampling activities were performed by BREC personnel with all collected samples submitted to Test America, Inc. (Test America) in Nashville, Tennessee for analyses. Groundwater samples collected during the initial eight monitoring events were analyzed for Appendix III and Appendix IV parameters in accordance with 40 CFR § 257.93. Groundwater samples collected during the ninth monitoring event were analyzed for Appendix III parameters only. No filtration of samples was conducted in either the field or laboratory procedures. Laboratory analyses were performed in accordance with approved USEPA methods.

2.3 Statistical Method Certification

In accordance with 40 CFR § 257.93(f)(6) a statistical program for evaluating statistically significant increases (SSIs) over background levels was developed and certified on June 28, 2016. The Statistical Methods Certification document details the selected method and is available on the public website for CCR Activities maintained by BREC (http://www.bigrivers.com/ccr-rule-compliance-wilson-station/).

3.0 DATA EVALUATION

The following sections present details of the monitoring system, groundwater flow, groundwater sampling results, and statistical evaluation for the Wilson Phase II Landfill well network and datasets.

3.1 Monitoring Well System

No changes were made to the Monitoring Well System in 2016 – 2017. Piezometers P-9 and P-11 were added to the CCR program as "water-level only" monitoring points. A report of the piezometer installation and details about the monitoring network are available in the Monitoring Well Completion Report, D.B. Wilson Special Waste Landfill, Solid Waste Permit Number 092-00004, Ohio County dated April 13, 2009 and maintained within the operating record at Wilson Station.

3.2 Groundwater Flow

Baseline water level data collected during the nine CCR monitoring events from April 2016 through October 2017 are summarized on **Table 2**. These data were used to construct a piezometric surface map to illustrate groundwater flow conditions for the uppermost aquifer (**Figure 3**, May 2017). These data and figure are representative of general conditions at the site and support the following analysis.

Overall groundwater flow beneath the footprint of the Wilson Phase II Landfill is to the south and southwest, towards the Green River. Groundwater flow beneath the Landfill is influenced by extensive strip-mining and a remaining bedrock high left undisturbed along the western edge of the Wilson Phase II Landfill. The hydraulic gradients calculated during the baseline period ranged from 0.0150 to 0.0178 within the northern portion of the landfill and 0.0029 to 0.0077 within the southern portion as presented in **Table 3**.

3.3 Sampling Results

During 2016 and 2017 a total of nine sampling events were completed during the baseline period. Both Appendix III and Appendix IV parameters were detected in all of the monitoring wells in one or all of the initial eight groundwater sampling events. All Appendix III parameters were detected in all of the monitoring wells during ninth sampling event. Results from all baseline sampling events are included as **Attachment A**. Complete analytical laboratory reports are included in **Attachment B**.

3.4 Statistical Evaluation

In accordance with 40 CFR § 257.93(f), AECOM conducted a statistical evaluation of the groundwater data to determine any SSIs over Baseline concentrations for the Appendix III parameters.

The data were evaluated using an interwell statistical approach, comparing upgradient to downgradient wells, with monitoring well MW-8 as the upgradient well. The results indicate that the Wilson Phase II Landfill will require Assessment Monitoring as most of the Appendix III constituents, excluding fluoride and pH, have SSIs over background as highlighted in the attached summary table shown below.

Table 2 D.B. Wilson Landfill SSI Summary									
Well	**Location**	**B**	**Ca**	**Cl**	**F**	**pH (LPL/UPL)**		**SO4**	**TDS**
MW-8	Upgradient	P	NP	P	P	NP	NP	P	P
MW-5	Downgradient								
MW-6	Downgradient								
MW-7	Downgradient								
MW-10	Downgradient								

Notes:

SSI determined using interwell prediction limits; MW-8 is upgradient background well
B = Barium; Ca = Cadmium; Cl = Chloride; F = Fluoride; LPL = Lower Prediction Level; UPL = Upper Prediction Level
SO4 = Sulfate; TDS = Total Dissolved Solids
P = Parametric prediction limit; NP = Nonparametric prediction limit

= Less than or equal to background UPL (upper prediction limit) or between the UPL and LPL (lower prediction limit) for pH

= SSI over background UPL or outside the LPL-UPL range for pH

Statistical methods were chosen in accordance with 40 CFR § 257.93(f) and the rationale behind why each method was selected is outlined in Statistical Methods Certification Document dated June 28, 2016. A copy of this document is available on the public website for CCR Activities maintained by BREC (http://www.bigrivers.com/ccr-rule-compliance-wilson-station/). A summary of the statistical evaluation conducted on the baseline Appendix III parameters is provided as **Attachment C**.

3.5 Discussion and Conclusions

Based upon the statistical evaluation of Appendix III parameters collected during the Baseline period at the Wilson Phase II Landfill, BREC is preparing to conduct Assessment Monitoring in 2018 for the constituents and monitoring wells listed in Section 3.4. Upon receipt of laboratory analysis and statistical evaluation results from the Assessment Monitoring, BREC will determine whether Assessment of Corrective Measures will be required under 40 CFR § 257.96.

Due to the nature of the Wilson Phase II Landfill site setting (former mining area with large minespoils deposit), many CCR parameters are expected to be naturally occurring in the uppermost aquifer. BREC will evaluate whether Alternative Source Demonstrations for SSIs at Wilson Phase II Landfill is warranted.

4.0 GENERAL INFORMATION

The following subsections summarize any problems encountered in the CCR program through 2017, any resolutions to those problems if needed and upcoming actions planned for 2018.

4.1 Problems Encountered and Resolutions

The initial, certified monitoring well system did not include piezometric monitoring points along the eastern perimeter of the CCR Unit. In response, two piezometers that had been installed as part of the original operating permit requirements were added to the CCR monitoring system late in the Baseline period for water-levels only.

Early during the Baseline period, it was discovered that a round of water level measurements from the monitoring well network was not recorded prior to sampling of the monitoring wells. BREC recognized this discrepancy and will adjust the water level measurement protocols during future CCR monitoring events.

No other problems were encountered during the 2016-2017 monitoring period.

4.2 Actions Planned for 2018

BREC plans on performing Assessment Monitoring of all monitoring wells for the Wilson Phase II Landfill. Pending the results from the Assessment Monitoring, Alternate Source Demonstration activities or Assessment of Corrective Measures will be triggered. Any notifications required by 40 CFR § 257.95(e), (f), or (g) will be transmitted accordingly.

5.0 REFERENCES

United States Environmental Protection Agency, 2015. Part 257.90, Sub-Part (e) Coal Combustion Residuals Rule.

Tables

TABLE 1

CCR GROUNDWATER MONITORING SYSTEM
WILSON PHASE II LANDFILL

BIG RIVERS ELECTRIC CORPORATION - WILSON STATION
OHIO COUNTY, KENTUCKY

Well No.		Location* Lat	Long	Reference Elevation* TOIC (feet, NAD27)	GS (feet, NAD27)	Casing Length (feet, TOIC)	Size / Type (ID / Material)	Filter Pack Interval (feet, GS, NAD27) Top	Bottom	Screened Interval (feet, GS, NAD27) Top	Bottom	Bottom of Boring (feet, GS)
Monitoring Wells												
MW-5 (8005-3477)	D	37.46380	-87.09098	469.27	467.38	75.0	2 inch / PVC	404.88	391.38	402.88	392.88	76
MW-6 (8005-3476)	D	37.46144	-87.09103	433.06	431.16	53.5	2 inch / PVC	390.46	377.16	388.16	378.16	54
MW-7 (8005-3479)	D	37.45841	-87.09132	426.20	424.15	50.0	2 inch / PVC	386.65	373.25	384.65	374.65	50.9
MW-8 (8005-3475)	U / B	37.46815	-87.08829	471.77	469.94	63.5	2 inch / PVC	419.46	405.89	416.98	406.98	64.05
MW-10 (8005-3478)	D	37.45437	-87.09017	398.84	396.96	22.4	2 inch / PVC	387.21	373.88	385.04	375.04	23.08
P-9 (8005-3480)	NA	37.46219	-87.08669	423.28	421.24	38.7	2 inch / PVC	395.04	382.04	393.04	383.04	39.2
P-11 (8005-3472)	NA	37.45928	-87.08721	446.65	444.02	68.6	2 inch / PVC	388.42	374.89	385.92	375.92	69.13

Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky February 2009
Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum
PVC = Polyvinyl chloride
ID = Internal Diameter
TOIC = Top of internal casing
GS = Ground Surface
U / B = Upgradient / Background
D = Downgradient

TABLE 2

MONITORING WELL NETWORK GROUNDWATER ELEVATIONS - APRIL 2016 - OCTOBER 2017
WILSON PHASE II LANDFILL

BIG RIVERS ELECTRIC CORPORATION - WILSON STATION
OHIO COUNTY, KENTUCKY

	GROUNDWATER MONITORING WELL NETWORK										PEIZOMETERS (water levels only)			
	MW-5		MW-6		MW-7		MW-8		MW-10		North (P9)		South (P11)	
Reference Elevation TOIC*(ft, NAD27)	Downgradient 469.27		Downgradient 433.06		Downgradient 426.20		Upgradient/Background 471.77		Downgradient 398.84		423.28		446.65	
Date Measured	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)
4/4/2016	59.16	410.11			39.44	386.76	46.33	425.44						
4/5/2016			42.92	390.14					12.72	386.12	NM		NM	
5/18/2016									15.6	383.24	NM		NM	
5/19/2016			42.32	390.74	39.05	387.15	46.74	425.03						
5/20/2016	58.96	410.31												
8/25/2016	59.83	409.44	43.14	389.92	39.63	386.57	47.31	424.46	13.02	385.82	NM		NM	
10/3/2016							47.87	423.9						
10/4/2016	60.93	408.34	44.06	389										
10/6/2016					40.63	385.57			13.74	385.10	27.21	396.07	60.92	385.73
2/15/2017	61.82	407.45	43.91	389.15	40.09	386.11	48.86	422.91			28.01	395.27	60.82	385.83
2/17/2017									13.24	385.60				
5/17/2017	60.81	408.46					48.22	423.55						
5/18/2017			43.48	389.58	40.02	386.18			13.36	385.48	27.28	396	60.68	385.97
8/15/2017							49.14	422.63						
8/16/2017	61.89	407.38	44.51	388.55	40.8	385.40					28.04	395.24	61.39	385.26
8/18/2017									13.81	385.03				
9/28/2017	62.84	406.43					49.75	422.02			28.31	394.97	61.04	385.61
9/29/2017			44.52	388.54	40.6	385.60								
10/2/2017									13.6	385.24				
10/12/2017	62.82	406.45	44.18	388.88	39.70	386.50	49.87	421.90			28.13	395.15	61.15	385.5
10/13/2017									13.1	385.74				

Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky February 2009
Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum
TOIC = Top of internal casing
GW = Groundwater; GS = Ground Surface; NM = Not measured

TABLE 3

HYDRAULIC GRADIENT
GROUNDWATER MONITORING SYSTEM
WILSON PHASE II LANDFILL

BIG RIVERS ELECTRIC CORPORATION - WILSON STATION
OHIO COUNTY, KENTUCKY

	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-8	MW-6			
Oct 2016	423.90	389.00	34.90	2236	0.0156
May 2017	423.55	389.58	33.97	2236	0.0152
Aug 2017	422.63	388.55	34.08	2236	0.0152
Sept 2017	422.02	388.54	33.48	2236	0.0150

	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-8	P9			
Oct 2016	423.90	396.07	27.83	1561	0.0178
May 2017	423.55	396.00	27.55	1561	0.0176
Aug 2017	422.63	395.24	27.39	1561	0.0175
Sept 2017	422.02	394.97	27.05	1561	0.0173

	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-6	MW-7			
Oct 2016	389.00	385.57	3.43	1012	0.0034
May 2017	389.58	386.18	3.40	1012	0.0034
Aug 2017	388.55	385.40	3.15	1012	0.0031
Sept 2017	388.54	385.60	2.94	1012	0.0029

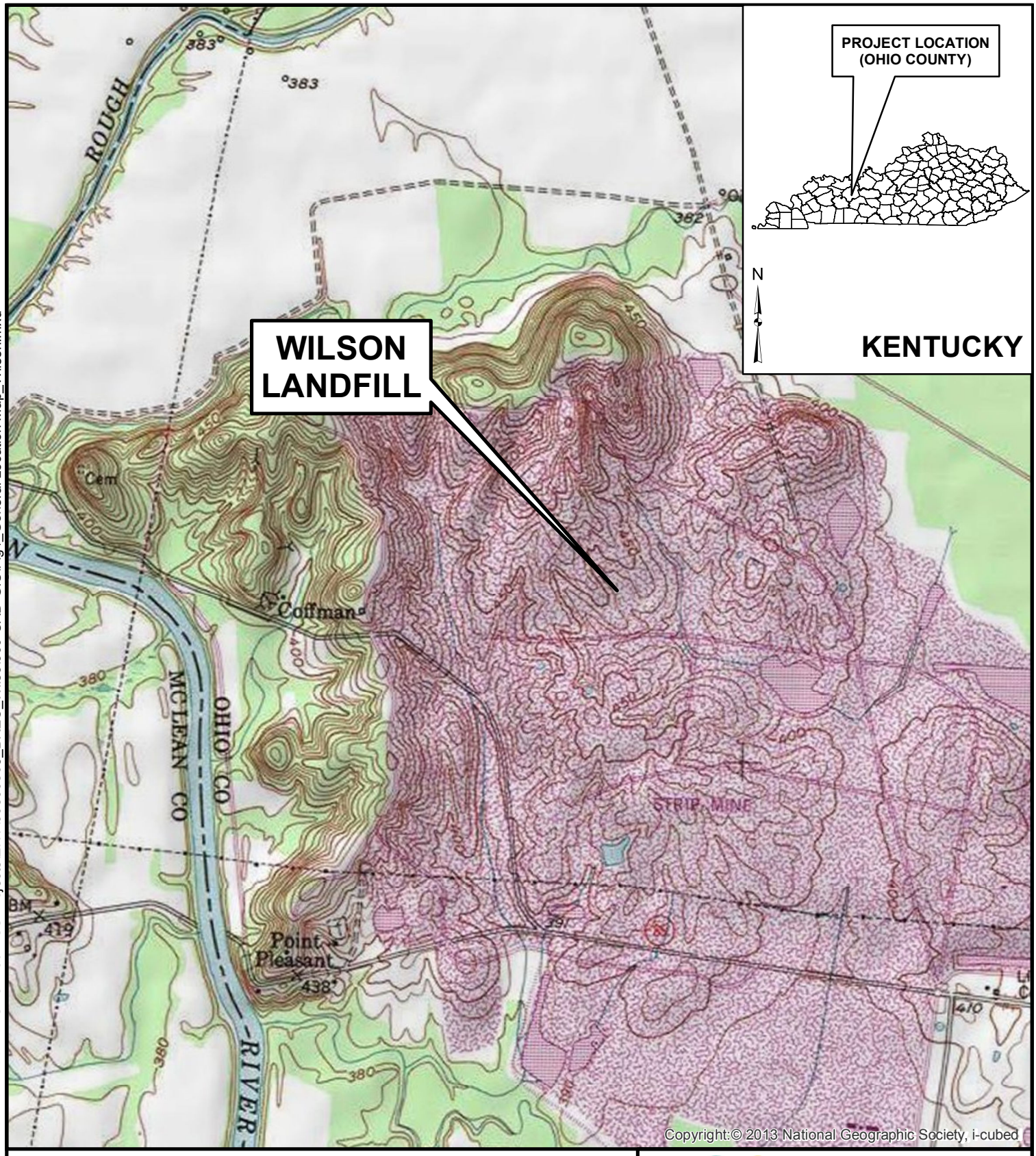
	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	P9	P11			
Oct 2016	396.07	385.73	10.34	1342	0.0077
May 2017	396.00	385.97	10.03	1342	0.0075
Aug 2017	395.24	385.26	9.98	1342	0.0074
Sept 2017	394.97	385.61	9.36	1342	0.0070

Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky February 2009

Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum

*Horizontal distance between monitoring wells, parallel to the direction of groundwater flow (as determined by measurements utilizing Kentucky GIS)

Figures



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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EQUALITY QUADRANGLE
(https://viewer.nationalmap.gov/basic/)

0 1,500 3,000 Feet

N

Big Rivers ELECTRIC CORPORATION

Wilson Station
Ohio County, Kentucky

FIGURE 1
GENERAL LOCATION MAP

DATE: 1/24/2018	SCALE: 1IN = 1,500 FEET
CREATED BY: ALW	
JOB NO. 60560563	

Document Path: G:\Cincinnati\DCS\Projects\ENV\60560563_BREC_Wilso\900-CAD-GIS\Fig2_Well Locations.mxd

Legend

- Downgradient Monitoring Well Location
- Upgradient Monitoring Well Location
- Piezometer Location (Water Level Only)
- Unit Boundary

0 400 800
Feet

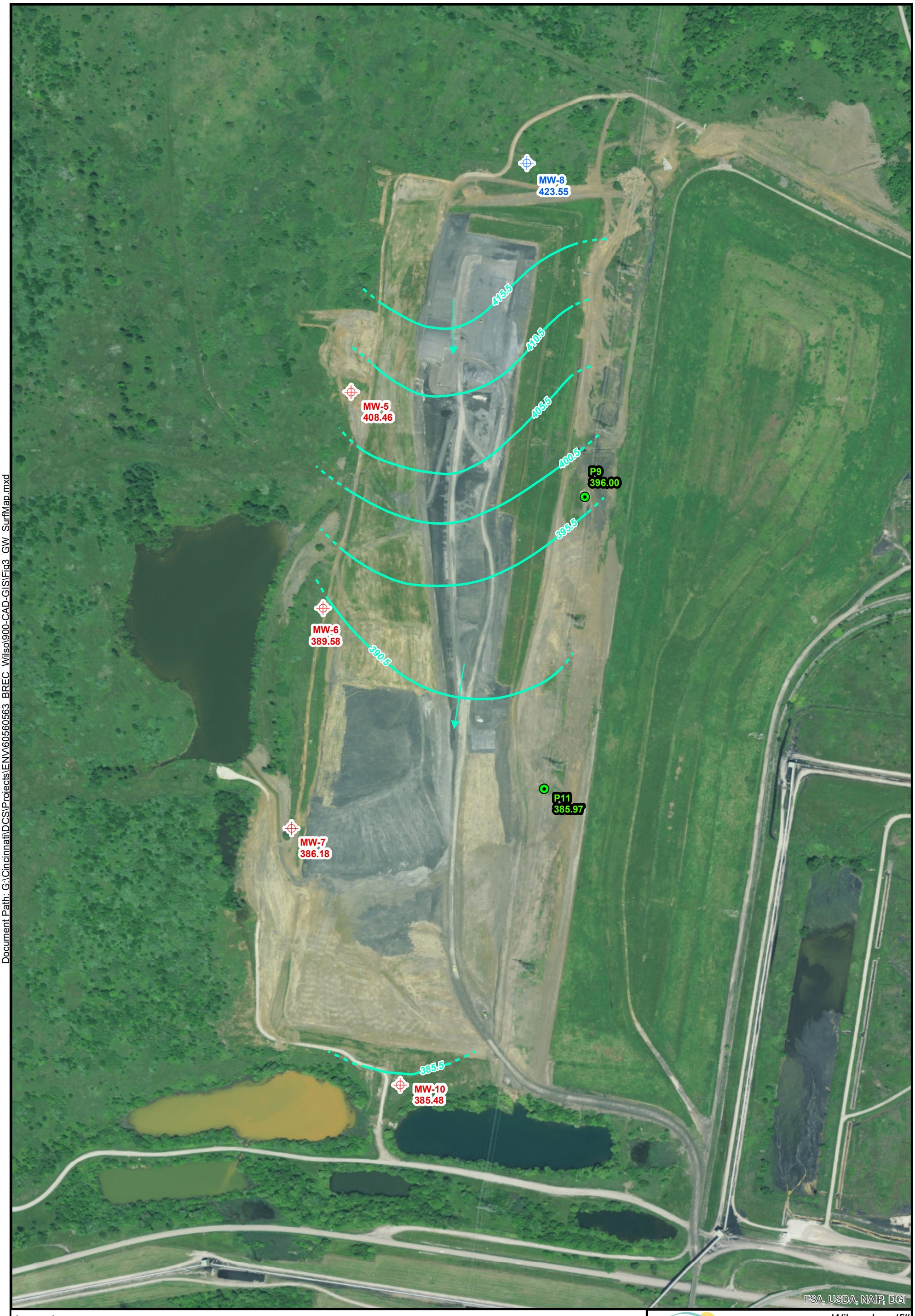
N

Big Rivers Electric Corporation

Wilson Landfill
Ohio County, Kentucky

FIGURE 2
CCR GROUNDWATER
MONITORING SYSTEM

DATE: 1/24/2018	SCALE: 1IN = 400 FEET
CREATED BY: ALW	
JOB NO. 60560563	



Legend

- Unit Boundary
- Downgradient Monitoring Well Location
- Upgradient Monitoring Well Location
- Piezometer Location (Water Level Only)
- Water Table Contour (Inferred from Available Monitoring Data)
- Groundwater Flow Direction

389.58 Groundwater Elevation (Feet, NAD27) Measured May 2017

0 400 800
Feet

N

Big Rivers Electric Corporation

Wilson Landfill
Ohio County, Kentucky

FIGURE 3
GROUNDWATER SURFACE MAP
MAP 2017

DATE: 1/24/2018	SCALE: 1IN = 400 FEET
CREATED BY: ALW	
JOB NO. 60560563	

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Attachment A

WILSON LANDFILL - CCR ANALYTICAL SUMMARY

MW-5

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/4/2016	5/20/2016	8/25/2016	10/4/2016	2/15/2017	5/17/2017	8/16/2017	9/28/2017	10/12/2017
Boron	NA	0.387	0.282	0.386	0.367	0.839	0.981	1.17	0.81	1.27
Calcium	NA	673	472	509	464	471	514	480	493	480
Chloride	NA	49.3	60.2	73.5	89.8	160	169	180	158	261
Fluoride	4 mg/L	0.0905	0.633	ND	0.838	0.0757	0.104	0.109	0.156	2.88
Sulfate	NA	1630	1950	1670	1570	1620	1530	2040	1860	1730
pH (Field Measurement)	NA	6.59	6.34	7.17	6.93	5.94	6.92	6.77	6.46	7.18
Total Dissolved Solids	NA	2840	2960	2940	2930	3000	3100	3220	3090	3040
APPENDIX IV CONSTIUENTS										
Antimony		ND	ND	0.000167	0.00017	ND	0.00032	0.000199	0.00025	
Arsenic		0.00524	0.00523	0.00577	0.00434	0.0043	0.00432	0.00289	0.00254	
Barium		0.0101	0.00973	0.0119	0.0118	0.011	0.016	0.0121	0.0102	
Beryllium		ND	0.000045	0.000127	0.000104	ND	0.000105	0.000133	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.00111	0.00309	0.000346	ND	0.00114	0.000578	ND	
Cobalt		0.00909	0.00829	0.00659	0.00664	0.00518	0.0057	0.00487	0.0051	
Fluoride		0.0905	0.633	ND	0.838	0.0757	0.104	0.109	0.156	
Lead		ND	ND	0.00144	0.00124	0.000462	0.00158	0.000469	0.000113	
Lithium		0.0243	0.0283	0.0374	0.0338	0.0432	0.042	0.0489	0.0398	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.00388	0.00383	0.00417	0.00368	0.00432	0.00491	0.00443	0.00408	
Radium 226		0.645	0.915	0.714	1.19	1.01	0.967	1.22	1.01	
Radium 228										
Selenium		ND	0.000496	0.000706	0.000491	0.00061	0.00132	0.000434	ND	
Thallium		ND	0.000021	ND	0.000036	ND	0.00006	0.000038	ND	

*All results listed in mg/L unless otherwise noted
by the MCL

WILSON LANDFILL - CCR ANALYTICAL SUMMARY

MW-6

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/5/2016	5/19/2016	8/25/2016	10/4/2016	2/15/2017	5/18/2017	8/16/2017	9/29/2017	10/12/2017
Boron	NA	0.255	0.243	0.27	0.228	0.293	0.265	0.298	0.328	0.286
Calcium	NA	534	466	470	445	414	490	477	459	438
Chloride	NA	3.65	5.09	4.1	4.63	4.93	4.37	5.49	5.36	5.6
Fluoride	4 mg/L	0.126	0.39	ND	ND	0.114	0.127	0.143	0.181	2.96
Sulfate	NA	1560	1710	1660	1790	1610	1570	1840	1630	1670
pH (Field Measurement)	NA	6.40	6.26	6.56	6.64	6.09	6.35	6.36	6.29	6.4
Total Dissolved Solids	NA	2740	2780	2790	2800	2620	2820	2950	2900	2920
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000049	0.000105	0.000193	0.000166	0.00032	0.000465	0.000637	
Arsenic		0.00777	0.00736	0.00476	0.00534	0.0123	0.00673	0.00598	0.00632	
Barium		0.0111	0.0108	0.0113	0.0106	0.013	0.0105	0.0104	0.0113	
Beryllium		ND	ND	ND	0.000118	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.000816	0.00366	ND	ND	ND	ND	0.000528	
Cobalt		0.00728	0.00713	0.0074	0.00688	0.0054	0.0059	0.00578	0.00686	
Fluoride		0.126	0.39	ND	ND	0.114	0.127	0.143	0.181	
Lead		ND	0.000081	0.000288	0.000226	0.00137	0.000268	0.000318	0.000272	
Lithium		0.0326	0.0419	0.0494	0.0459	0.0508	0.0455	0.0495	0.0472	
Mercury		ND	ND	ND	ND	ND	ND	ND	0.000161	
Molybdenum		0.0082	0.00701	0.00741	0.00738	0.00917	0.00772	0.00797	0.00762	
Radium 226		0.596	0.581	0.519	0.847	0.919	0.892	0.82	0.639	
Radium 228										
Selenium		ND	ND	ND	0.000393	ND	ND	ND	ND	
Thallium		ND	0.000037	0.000044	0.000048	ND	ND	ND	0.000044	

*All results listed in mg/L unless otherwise noted
by the MCL

WILSON LANDFILL - CCR ANALYTICAL SUMMARY

MW-7

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/4/2016	5/19/2016	8/25/2016	10/6/2016	2/15/2017	5/18/2017	8/16/2017	9/29/2017	10/12/2017
Boron	NA	0.241	0.165	0.277	0.203	0.293	0.232	0.263	0.28	0.245
Calcium	NA	364	241	287	251	262	273	268	269	259
Chloride	NA	3.47	5.31	5.67	5.65	6.15	6.91	7.91	7.54	7.77
Fluoride	4 mg/L	0.243	0.357	0.36	0.326	0.218	0.242	0.237	0.314	1.43
Sulfate	NA	759	784	813	822	850	877	940	1780	910
pH (Field Measurement)	NA	6.53	6.29	6.60	7.33	5.60	6.55	6.49	6.32	6.50
Total Dissolved Solids	NA	1450	1450	1520	1560	1540	1550	1600	1590	1610
APPENDIX IV CONSTIUENTS										
Antimony		ND	ND	0.000042	0.000201	ND	0.000294	0.000162	0.00045	
Arsenic		ND	0.00408	0.00317	0.00218	0.00303	0.00226	0.00161	0.00197	
Barium		0.015	0.0131	0.0153	0.0129	0.0158	0.0152	0.0123	0.0122	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.00122	0.00304	ND	ND	ND	ND	ND	
Cobalt		0.0084	0.0058	0.0062	0.00483	0.00531	0.00358	0.00395	0.00454	
Fluoride		0.243	0.357	0.36	0.326	0.218	0.242	0.237	0.314	
Lead		ND	ND	ND	0.000082	ND	ND	ND	ND	
Lithium		0.0241	0.0241	0.0305	0.0263	0.0318	0.0277	0.0291	0.0278	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.00196	N.00204	0.00236	0.00217	0.00287	0.00292	0.00317	0.00294	
Radium 226		0.727	0.558	0.613	0.66	ND	0.817	0.852	0.779	
Radium 228										
Selenium		ND	ND	ND	ND	ND	ND	ND	ND	
Thallium		ND	ND	ND	ND	ND	ND	ND	ND	

*All results listed in mg/L unless otherwise noted by the MCL

WILSON LANDFILL - CCR ANALYTICAL SUMMARY

MW-8

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/4/2016	5/19/2016	8/25/2016	10/3/2016	2/15/2017	5/17/2017	8/15/2017	9/28/2017	10/12/2017
Boron	NA	0.042	0.0385	0.0369	0.0474	0.0385	0.036	0.0518	0.0207	0.0409
Calcium	NA	329	242	237	226	213	225	230	214	216
Chloride	NA	4.12	5.48	4.38	4.69	4.7	4.19	4.68	4.82	4.44
Fluoride	4 mg/L	0.262	0.361	0.357	0.486	0.214	0.234	0.237	0.298	1.21
Sulfate	NA	876	910	872	854	779	877	964	900	894
pH (Field Measurement)	NA	6.47	6.34	6.64	6.63	4.91	6.47	6.44	6.35	6.50
Total Dissolved Solids	NA	1530	1590	1550	1520	1450	1560	1590	1520	1560
APPENDIX IV CONSTIUENTS										
Antimony		ND	ND	0.000035	0.00153	ND	0.000236	0.000125	0.000177	
Arsenic		0.00931	0.00698	0.00709	0.00581	0.00799	0.0072	0.00548	0.00515	
Barium		0.0218	0.0213	0.0217	0.0201	0.0249	0.0208	0.0201	0.0184	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.000886	0.00114	ND	ND	ND	ND	ND	
Cobalt		ND	0.00156	0.00118	0.0015	0.0011	0.000739	0.000943	0.00102	
Fluoride		0.262	0.361	0.357	0.486	0.214	0.234	0.237	0.298	
Lead		ND	ND	ND	ND	ND	ND	ND	ND	
Lithium		ND	ND	0.0116	0.012	0.0142	0.0103	0.0137	ND	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.0187	0.0142	0.0145	0.0151	0.0185	0.0137	0.0166	0.0153	
Radium 226		1.12	1.31	0.741	1.12	0.854	1.07	1.04	0.901	
Radium 228										
Selenium		ND	ND	ND	ND	ND	ND	0.000501	ND	
Thallium		ND	ND	ND	ND	ND	ND	ND	ND	

*All results listed in mg/L unless otherwise noted by the MCL

WILSON LANDFILL - CCR ANALYTICAL SUMMARY

MW-10

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/5/2016	5/18/2016	8/25/2016	10/6/2016	2/17/2017	5/18/2017	8/18/2017	10/2/2017	10/13/2017
Boron	NA	0.291	0.217	0.205	0.166	0.229	0.163	0.196	0.181	0.251
Calcium	NA	497	390	404	369	440	390	368	379	347
Chloride	NA	53.7	85.7	53	44	44	47.4	43.5	63.3	83
Fluoride	4 mg/L	0.0981	0.329	ND	0.217	0.0688	0.1	0.1129	0.112	2.8
Sulfate	NA	2090	2210	2000	2030	1980	2070	2320	2250	2080
pH (Field Measurement)	NA	6.03	5.82	6.05	6.91	4.62	5.88	5.83	5.84	6.00
Total Dissolved Solids	NA	2980	3300	3240	3230	3050	3240	3200	3300	3120
APPENDIX IV CONSTIUENTS										
Antimony		ND	ND	0.000028	0.000164	ND	0.000288	0.00396	0.00028	
Arsenic		0.00514	0.00309	0.00309	0.00139	0.00173	0.00108	0.000666	0.00111	
Barium		0.0109	0.00816	0.00953	0.00957	0.00988	0.00775	0.009	0.00958	
Beryllium		ND	0.000043	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	0.000329	0.000186	ND	ND	
Chromimum		ND	0.00119	0.00126	ND	ND	ND	ND	0.00042	
Cobalt		0.158	0.113	0.126	0.108	0.0836	0.0602	0.121	0.139	
Fluoride		0.0981	0.329	ND	0.217	0.0688	0.1	0.1129	0.112	
Lead		ND	0.000068	0.000092	0.000143	0.000087	ND	ND	0.000073	
Lithium		ND	ND	0.0141	0.0149	0.0133	0.0109	0.0129	0.0124	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		ND	ND	ND	ND	ND	ND	0.00144	ND	
Radium 226		ND	ND	ND	ND	ND	0.384	0.372	0.506	
Radium 228										
Selenium		ND	ND	ND	ND	ND	ND	0.000375	0.00072	
Thallium		ND	0.000029	0.000036	ND	ND	ND	0.000111	ND	

*All results listed in mg/L unless otherwise noted by the MCL

Attachment B

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-101188-1
Client Project/Site: Wilson Landfull CCR
Revision: 2

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 4:40:56 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-101188-5	MW-5	Water	04/04/16 13:45	04/07/16 09:40
490-101188-6	MW-6	Water	04/05/16 11:10	04/07/16 09:40
490-101188-7	MW-7	Water	04/04/16 15:40	04/07/16 09:40
490-101188-8	MW-8	Water	04/04/16 12:25	04/07/16 09:40
490-101188-9	MW-10	Water	04/05/16 12:40	04/07/16 09:40

Job ID: 490-101188-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-101188-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 4/7/2016 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.1º C, 1.2º C, 1.9º C, 2.8º C and 2.9º C.

RAD
Method(s) 904.0: Radium-228 Prep Batch 160-245644: The absolute value of the negative result for the method blank (MB) associated with the following samples is outside the three sigma uncertainty: MW-5 (490-101188-5), MW-6 (490-101188-6), MW-7 (490-101188-7), MW-8 (490-101188-8), MW-10 (490-101188-9), (LCS 160-245644/2-A), (LCSD 160-245644/3-A) and (MB 160-245644/1-A). A recount was not possible due to the passing of a full decay cycle of yttrium-90. The data has been qualified and reported.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-245644: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-5 (490-101188-5), MW-6 (490-101188-6), MW-7 (490-101188-7), MW-8 (490-101188-8), and MW-10 (490-101188-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-245644: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows:
Samples were re-prepared as follows: Precipitate on planchette was re-dissolved with EDTA, moved to a centrifuge tube, added standardized yttrium carrier and lead carrier. Samples were placed into a "re-ingrowth" period of at least 36 hours. This is to ensure proper separation of the yttrium oxalate and the barium sulfate which was believed to not have fully separated causing a high radium-228 spike recovery. New T1 times were recorded for the actinium-228, but not for the radium-226. Original T1 time will be used for the radium-226 portion as recorded in TALs.
MW-5 (490-101188-5), MW-6 (490-101188-6), MW-7 (490-101188-7), MW-8 (490-101188-8), and MW-10 (490-101188-9)

Method(s) PrecSep-21: Radium-226Prep Batch 160-245638: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-5 (490-101188-5), MW-6 (490-101188-6), MW-7 (490-101188-7), MW-8 (490-101188-8), and MW-10 (490-101188-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-245638: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows:
Samples were re-prepared as follows: Precipitate on planchette was re-dissolved with EDTA, moved to a centrifuge tube, added standardized yttrium carrier and lead carrier. Samples were placed into a "re-ingrowth" period of at least 36 hours. This is to ensure proper separation of the yttrium oxalate and the barium sulfate which was believed to not have fully separated causing a high radium-228 spike recovery. New T1 times were recorded for the actinium-228, but not for the radium-226. Original T1 time will be used for the radium-226 portion as recorded in TALs.
MW-5 (490-101188-5), MW-6 (490-101188-6), MW-7 (490-101188-7), MW-8 (490-101188-8), and MW-10 (490-101188-9)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Narrative

Job Narrative
490-101188-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

HPLC/IC
Method(s) 9056A: The method blank for 490-332637contained Chloride above the method detection limit (MDL). Associated samples

Job ID: 490-101188-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: The method blank for 490-332637 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-5 (490-101188-5), MW-6 (490-101188-6), MW-7 (490-101188-7), MW-8 (490-101188-8), MW-10 (490-101188-9), (490-101188-B-1 MS) and (490-101188-B-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 490-334032 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample/ laboratory sample duplicate (LCS/ LCSD) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 04/04/16 13:45
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.0905	J	1.00	0.0100	mg/L			04/18/16 23:15	1
Sulfate	1630		500	3.00	mg/L			04/23/16 09:38	100
Chloride	49.3	B	3.00	0.200	mg/L			04/18/16 23:15	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:06	1
Arsenic	0.00524	J	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:31	10
Barium	0.0101	J	0.200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:06	1
Beryllium	ND		0.0200	0.0100	mg/L		04/11/16 08:53	04/12/16 20:31	10
Boron	0.387	J B	10.0	0.00700	mg/L		04/11/16 08:53	04/12/16 20:31	10
Cadmium	ND		0.0100	0.00400	mg/L		04/11/16 08:53	04/12/16 20:31	10
Calcium	673		10.0	1.25	mg/L		04/11/16 08:53	04/12/16 20:31	10
Chromium	ND		0.0300	0.00500	mg/L		04/11/16 08:53	04/12/16 20:31	10
Cobalt	0.00909	J	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:31	10
Lead	ND		0.0500	0.00200	mg/L		04/11/16 08:53	04/12/16 20:31	10
Lithium	0.0243	J	0.500	0.00800	mg/L		04/11/16 08:53	04/12/16 20:31	10
Molybdenum	0.00388	J	0.0100	0.000500	mg/L		04/11/16 08:53	04/13/16 19:06	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/13/16 19:06	1
Thallium	ND		0.0100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:31	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:28	04/11/16 22:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2840		20.0	14.0	mg/L			04/08/16 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.237		0.0895	0.0920	1.00	0.0971	pCi/L	04/13/16 11:37	05/05/16 07:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.7*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.407	U	0.393	0.395	1.00	0.638	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.7*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*89.7*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Client Sample ID: MW-5
Date Collected: 04/04/16 13:45
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-5
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.645		0.403	0.405	5.00	0.638	pCi/L		05/06/16 16:59	1

Client Sample ID: MW-6

Date Collected: 04/05/16 11:10
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.126**	**J**	1.00	0.0100	mg/L			04/18/16 23:34	1
Sulfate	**1560**		500	3.00	mg/L			04/23/16 09:58	100
Chloride	**3.65**	**B**	3.00	0.200	mg/L			04/18/16 23:34	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:12	1
Arsenic	**0.00777**	**J**	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:37	10
Barium	**0.0111**	**J**	0.200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:12	1
Beryllium	ND		0.0200	0.0100	mg/L		04/11/16 08:53	04/12/16 20:37	10
Boron	**0.255**	**J B**	10.0	0.00700	mg/L		04/11/16 08:53	04/12/16 20:37	10
Cadmium	ND		0.0100	0.00400	mg/L		04/11/16 08:53	04/12/16 20:37	10
Calcium	**534**		10.0	1.25	mg/L		04/11/16 08:53	04/12/16 20:37	10
Chromium	ND		0.0300	0.00500	mg/L		04/11/16 08:53	04/12/16 20:37	10
Cobalt	**0.00728**	**J**	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:37	10
Lead	ND		0.0500	0.00200	mg/L		04/11/16 08:53	04/12/16 20:37	10
Lithium	**0.0326**	**J**	0.500	0.00800	mg/L		04/11/16 08:53	04/12/16 20:37	10
Molybdenum	**0.00820**	**J**	0.100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:37	10
Selenium	ND		0.100	0.00600	mg/L		04/11/16 08:53	04/12/16 20:37	10
Thallium	ND		0.0100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:37	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:28	04/11/16 22:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2740**		20.0	14.0	mg/L			04/08/16 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.341**		0.0995	0.104	1.00	0.0888	pCi/L	04/13/16 11:37	05/05/16 07:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.1*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.255	U	0.303	0.304	1.00	0.501	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*88.6*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Client Sample ID: MW-6
Date Collected: 04/05/16 11:10
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-6
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.596		0.319	0.322	5.00	0.501	pCi/L		05/06/16 16:59	1

Client Sample ID: MW-7

Date Collected: 04/04/16 15:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.243**	**J**	1.00	0.0100	mg/L			04/18/16 23:52	1
Sulfate	**759**		500	3.00	mg/L			04/23/16 10:17	100
Chloride	**3.47**	**B**	3.00	0.200	mg/L			04/18/16 23:52	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:29	1
Arsenic	ND		0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:42	10
Barium	**0.0150**	**J**	0.200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:29	1
Beryllium	ND		0.0200	0.0100	mg/L		04/11/16 08:53	04/12/16 20:42	10
Boron	**0.241**	**J B**	10.0	0.00700	mg/L		04/11/16 08:53	04/12/16 20:42	10
Cadmium	ND		0.0100	0.00400	mg/L		04/11/16 08:53	04/12/16 20:42	10
Calcium	**364**		10.0	1.25	mg/L		04/11/16 08:53	04/12/16 20:42	10
Chromium	ND		0.0300	0.00500	mg/L		04/11/16 08:53	04/12/16 20:42	10
Cobalt	**0.00840**	**J**	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:42	10
Lead	ND		0.0500	0.00200	mg/L		04/11/16 08:53	04/12/16 20:42	10
Lithium	**0.0241**	**J**	0.500	0.00800	mg/L		04/11/16 08:53	04/12/16 20:42	10
Molybdenum	**0.00196**	**J**	0.0100	0.000500	mg/L		04/11/16 08:53	04/13/16 19:29	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/13/16 19:29	1
Thallium	ND		0.0100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:42	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:28	04/11/16 22:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1450**		10.0	7.00	mg/L			04/08/16 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.166**		0.0876	0.0889	1.00	0.118	pCi/L	04/13/16 11:37	05/05/16 07:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.7*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.561**		0.310	0.314	1.00	0.456	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.7*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*89.3*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Client Sample ID: MW-7
Date Collected: 04/04/16 15:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-7
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.727		0.322	0.326	5.00	0.456	pCi/L		05/06/16 16:59	1

Client Sample ID: MW-8

Date Collected: 04/04/16 12:25
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.262**	**J**	1.00	0.0100	mg/L			04/19/16 00:11	1
Sulfate	**876**		500	3.00	mg/L			04/23/16 10:37	100
Chloride	**4.12**	**B**	3.00	0.200	mg/L			04/19/16 00:11	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:34	1
Arsenic	**0.00931**	**J**	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:48	10
Barium	**0.0218**	**J**	0.200	0.000500	mg/L		04/11/16 08:53	04/13/16 19:34	1
Beryllium	ND		0.0200	0.0100	mg/L		04/11/16 08:53	04/12/16 20:48	10
Boron	**0.0420**	**J B**	10.0	0.00700	mg/L		04/11/16 08:53	04/12/16 20:48	10
Cadmium	ND		0.0100	0.00400	mg/L		04/11/16 08:53	04/12/16 20:48	10
Calcium	**329**		10.0	1.25	mg/L		04/11/16 08:53	04/12/16 20:48	10
Chromium	ND		0.0300	0.00500	mg/L		04/11/16 08:53	04/12/16 20:48	10
Cobalt	ND		0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:48	10
Lead	ND		0.0500	0.00200	mg/L		04/11/16 08:53	04/12/16 20:48	10
Lithium	ND		0.500	0.00800	mg/L		04/11/16 08:53	04/12/16 20:48	10
Molybdenum	**0.0187**	**J**	0.100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:48	10
Selenium	ND		0.100	0.00600	mg/L		04/11/16 08:53	04/12/16 20:48	10
Thallium	ND		0.0100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:48	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:28	04/11/16 22:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1530**		20.0	14.0	mg/L			04/08/16 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.722**		0.145	0.159	1.00	0.126	pCi/L	04/13/16 11:37	05/05/16 07:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.1*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.398	U	0.281	0.283	1.00	0.435	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*90.8*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Client Sample ID: MW-8
Date Collected: 04/04/16 12:25
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-8
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.12		0.316	0.325	5.00	0.435	pCi/L		05/06/16 16:59	1

Client Sample ID: MW-10

Date Collected: 04/05/16 12:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.0981**	**J**	1.00	0.0100	mg/L			04/19/16 00:29	1
Sulfate	**2090**		500	3.00	mg/L			04/23/16 10:56	100
Chloride	**53.7**	**B**	3.00	0.200	mg/L			04/19/16 00:29	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0200	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10
Arsenic	**0.00514**	**J**	0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10
Barium	**0.0109**	**J**	2.00	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10
Beryllium	ND		0.0200	0.0100	mg/L		04/11/16 08:53	04/12/16 20:53	10
Boron	**0.291**	**J B**	10.0	0.00700	mg/L		04/11/16 08:53	04/12/16 20:53	10
Cadmium	ND		0.0100	0.00400	mg/L		04/11/16 08:53	04/12/16 20:53	10
Calcium	**497**		10.0	1.25	mg/L		04/11/16 08:53	04/12/16 20:53	10
Chromium	ND		0.0300	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10
Cobalt	**0.158**		0.0500	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10
Lead	ND		0.0500	0.00200	mg/L		04/11/16 08:53	04/12/16 20:53	10
Lithium	ND		0.500	0.00800	mg/L		04/11/16 08:53	04/12/16 20:53	10
Molybdenum	ND		0.100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10
Selenium	ND		0.100	0.00600	mg/L		04/11/16 08:53	04/12/16 20:53	10
Thallium	ND		0.0100	0.00500	mg/L		04/11/16 08:53	04/12/16 20:53	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:28	04/11/16 22:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2980**		20.0	14.0	mg/L			04/08/16 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0870	U	0.0650	0.0655	1.00	0.0946	pCi/L	04/13/16 11:37	05/05/16 07:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.4*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.291	U	0.327	0.328	1.00	0.537	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.4*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*88.2*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Client Sample ID: MW-10
Date Collected: 04/05/16 12:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-9
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.378	U	0.333	0.334	5.00	0.537	pCi/L		05/06/16 16:59	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-332637/3
Matrix: Water
Analysis Batch: 332637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			04/18/16 20:28	1
Sulfate	ND		5.00	0.0300	mg/L			04/18/16 20:28	1
Chloride	0.3901	J	3.00	0.200	mg/L			04/18/16 20:28	1

Lab Sample ID: LCS 490-332637/4
Matrix: Water
Analysis Batch: 332637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	10.0	9.834		mg/L		98	80 - 120
Sulfate	100	98.47		mg/L		98	80 - 120
Chloride	100	97.38		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-332637/5
Matrix: Water
Analysis Batch: 332637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	10.0	9.731		mg/L		97	80 - 120	1	20
Sulfate	100	97.98		mg/L		98	80 - 120	1	20
Chloride	100	97.49		mg/L		97	80 - 120	0	20

Lab Sample ID: 490-101188-1 MS
Matrix: Water
Analysis Batch: 332637

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.41	F1	10.0	17.33	F1	mg/L		129	80 - 120
Sulfate	2760	E	100	2350	E 4	mg/L		-410	80 - 120
Chloride	90.3	B	100	173.2		mg/L		83	80 - 120

Lab Sample ID: 490-101188-1 MSD
Matrix: Water
Analysis Batch: 332637

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	4.41	F1	10.0	17.45	F1	mg/L		130	80 - 120	1	20
Sulfate	2760	E	100	2295	E 4	mg/L		-466	80 - 120	2	20
Chloride	90.3	B	100	171.4		mg/L		81	80 - 120	1	20

Lab Sample ID: MB 490-334032/3
Matrix: Water
Analysis Batch: 334032

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			04/23/16 06:42	1
Sulfate	ND		5.00	0.0300	mg/L			04/23/16 06:42	1
Chloride	0.4715	J	3.00	0.200	mg/L			04/23/16 06:42	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-334032/4
Matrix: Water
Analysis Batch: 334032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	10.0	10.09		mg/L		101	80 - 120
Sulfate	100	98.66		mg/L		99	80 - 120
Chloride	100	100.3		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-334032/5
Matrix: Water
Analysis Batch: 334032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	10.0	10.13		mg/L		101	80 - 120	0	20
Sulfate	100	98.80		mg/L		99	80 - 120	0	20
Chloride	100	100.3		mg/L		100	80 - 120	0	20

Lab Sample ID: 490-101188-1 MS
Matrix: Water
Analysis Batch: 334032

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	20.7	J	2000	2081		mg/L		103	80 - 120
Sulfate	9690	F1	20000	21720	F1	mg/L		60	80 - 120
Chloride	306	J B	20000	19660		mg/L		97	80 - 120

Lab Sample ID: 490-101188-1 MSD
Matrix: Water
Analysis Batch: 334032

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	20.7	J	2000	2059		mg/L		102	80 - 120	1	20
Sulfate	9690	F1	20000	21660	F1	mg/L		60	80 - 120	0	20
Chloride	306	J B	20000	19480		mg/L		96	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 490-330466/1-A
Matrix: Water
Analysis Batch: 331103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330466

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1
Arsenic	ND		0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1
Barium	ND		0.200	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1
Beryllium	ND		0.00200	0.00100	mg/L		04/11/16 08:53	04/12/16 13:32	1
Boron	0.001302	J	1.00	0.000700	mg/L		04/11/16 08:53	04/12/16 13:32	1
Cadmium	ND		0.00100	0.000400	mg/L		04/11/16 08:53	04/12/16 13:32	1
Calcium	ND		1.00	0.125	mg/L		04/11/16 08:53	04/12/16 13:32	1
Chromium	ND		0.00300	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1
Cobalt	ND		0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1
Lead	ND		0.00500	0.000200	mg/L		04/11/16 08:53	04/12/16 13:32	1
Lithium	ND		0.0500	0.000800	mg/L		04/11/16 08:53	04/12/16 13:32	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 490-330466/1-A
Matrix: Water
Analysis Batch: 331103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330466

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0100	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/12/16 13:32	1
Thallium	ND		0.00100	0.000500	mg/L		04/11/16 08:53	04/12/16 13:32	1

Lab Sample ID: MB 490-330466/1-A
Matrix: Water
Analysis Batch: 331476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330466

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1
Arsenic	ND		0.00500	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1
Barium	ND		0.200	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1
Beryllium	ND		0.00200	0.00100	mg/L		04/11/16 08:53	04/13/16 18:21	1
Boron	0.008338	J ^	1.00	0.000700	mg/L		04/11/16 08:53	04/13/16 18:21	1
Cadmium	ND		0.00100	0.000400	mg/L		04/11/16 08:53	04/13/16 18:21	1
Calcium	ND		1.00	0.125	mg/L		04/11/16 08:53	04/13/16 18:21	1
Chromium	ND		0.00300	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1
Cobalt	ND		0.00500	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1
Lead	ND		0.00500	0.000200	mg/L		04/11/16 08:53	04/13/16 18:21	1
Lithium	ND		0.0500	0.000800	mg/L		04/11/16 08:53	04/13/16 18:21	1
Molybdenum	ND		0.0100	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/13/16 18:21	1
Thallium	ND		0.00100	0.000500	mg/L		04/11/16 08:53	04/13/16 18:21	1

Lab Sample ID: LCS 490-330466/2-A
Matrix: Water
Analysis Batch: 331103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.1016		mg/L		102	80 - 120
Arsenic	0.100	0.09496		mg/L		95	80 - 120
Barium	0.100	0.09600	J	mg/L		96	80 - 120
Beryllium	0.100	0.1041		mg/L		104	80 - 120
Boron	1.00	1.065		mg/L		107	80 - 120
Cadmium	0.100	0.09813		mg/L		98	80 - 120
Calcium	10.0	9.655		mg/L		97	80 - 120
Chromium	0.100	0.09885		mg/L		99	80 - 120
Cobalt	0.100	0.1046		mg/L		105	80 - 120
Lead	0.100	0.09932		mg/L		99	80 - 120
Lithium	0.100	0.09628		mg/L		96	80 - 120
Molybdenum	0.100	0.09854		mg/L		99	80 - 120
Selenium	0.100	0.09421		mg/L		94	80 - 120
Thallium	0.100	0.1012		mg/L		101	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 490-330466/2-A
Matrix: Water
Analysis Batch: 331476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.09222		mg/L		92	80 - 120
Arsenic	0.100	0.1002		mg/L		100	80 - 120
Barium	0.100	0.09350	J	mg/L		94	80 - 120
Beryllium	0.100	0.1001		mg/L		100	80 - 120
Boron	1.00	1.096	^	mg/L		110	80 - 120
Cadmium	0.100	0.09480		mg/L		95	80 - 120
Calcium	10.0	9.753		mg/L		98	80 - 120
Chromium	0.100	0.09477		mg/L		95	80 - 120
Cobalt	0.100	0.09359		mg/L		94	80 - 120
Lead	0.100	0.09532		mg/L		95	80 - 120
Lithium	0.100	0.09513		mg/L		95	80 - 120
Molybdenum	0.100	0.09976		mg/L		100	80 - 120
Selenium	0.100	0.09320		mg/L		93	80 - 120
Thallium	0.100	0.09903		mg/L		99	80 - 120

Lab Sample ID: 490-101188-2 MS
Matrix: Water
Analysis Batch: 331103

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00509	J F1	0.100	0.1359	F1	mg/L		131	75 - 125
Arsenic	0.0261	J F1	0.100	0.1558	F1	mg/L		130	75 - 125
Barium	0.190	J F1	0.100	0.3022	J	mg/L		112	75 - 125
Beryllium	ND	F1	0.100	0.1286	F1	mg/L		129	75 - 125
Boron	0.112	J B F1	1.00	1.385	J F1	mg/L		127	75 - 125
Cadmium	ND	F1	0.100	0.1322	F1	mg/L		132	75 - 125
Calcium	102		10.0	103.6	4	mg/L		20	75 - 125
Chromium	ND	F1	0.100	0.1271	F1	mg/L		127	75 - 125
Cobalt	0.0192	J F1	0.100	0.1478	F1	mg/L		129	75 - 125
Lead	ND	F1	0.100	0.1326	F1	mg/L		133	75 - 125
Lithium	ND	F1	0.100	0.1319	J F1 ^	mg/L		132	75 - 125
Molybdenum	ND	F1	0.100	0.1321	F1	mg/L		132	75 - 125
Selenium	ND	F1	0.100	0.1295	F1	mg/L		130	75 - 125
Thallium	ND	F1	0.100	0.1324	F1	mg/L		132	75 - 125

Lab Sample ID: 490-101188-2 MS
Matrix: Water
Analysis Batch: 331476

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.100	0.08981		mg/L		90	75 - 125
Arsenic	0.0181		0.100	0.1152		mg/L		97	75 - 125
Barium	0.122	J	0.100	0.2124		mg/L		91	75 - 125
Beryllium	ND		0.100	0.09951		mg/L		100	75 - 125
Boron	0.0516	J B ^	1.00	1.143	^	mg/L		109	75 - 125
Cadmium	ND		0.100	0.09299		mg/L		93	75 - 125
Calcium	67.0		10.0	74.69	4	mg/L		77	75 - 125
Chromium	0.000876	J	0.100	0.09467		mg/L		94	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-101188-2 MS
Matrix: Water
Analysis Batch: 331476

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0118		0.100	0.1029		mg/L		91	75 - 125
Lead	ND		0.100	0.09507		mg/L		95	75 - 125
Lithium	0.00730	J	0.100	0.1010		mg/L		94	75 - 125
Molybdenum	0.00167	J	0.100	0.09870		mg/L		97	75 - 125
Selenium	0.000770	J	0.100	0.09371		mg/L		93	75 - 125
Thallium	ND		0.100	0.09916		mg/L		99	75 - 125

Lab Sample ID: 490-101188-2 MSD
Matrix: Water
Analysis Batch: 331103

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00509	J F1	0.100	0.1485	F1	mg/L		143	75 - 125	9	20
Arsenic	0.0261	J F1	0.100	0.1658	F1	mg/L		140	75 - 125	6	20
Barium	0.190	J F1	0.100	0.3296	J F1	mg/L		140	75 - 125	9	20
Beryllium	ND	F1	0.100	0.1401	F1	mg/L		140	75 - 125	9	20
Boron	0.112	J B F1	1.00	1.472	J F1	mg/L		136	75 - 125	6	20
Cadmium	ND	F1	0.100	0.1424	F1	mg/L		142	75 - 125	7	20
Calcium	102		10.0	113.2	4	mg/L		116	75 - 125	9	20
Chromium	ND	F1	0.100	0.1371	F1	mg/L		137	75 - 125	8	20
Cobalt	0.0192	J F1	0.100	0.1595	F1	mg/L		140	75 - 125	8	20
Lead	ND	F1	0.100	0.1428	F1	mg/L		143	75 - 125	7	20
Lithium	ND	F1	0.100	0.1412	J F1 ^	mg/L		141	75 - 125	7	20
Molybdenum	ND	F1	0.100	0.1432	F1	mg/L		143	75 - 125	8	20
Selenium	ND	F1	0.100	0.1382	F1	mg/L		138	75 - 125	6	20
Thallium	ND	F1	0.100	0.1422	F1	mg/L		142	75 - 125	7	20

Lab Sample ID: 490-101188-2 MSD
Matrix: Water
Analysis Batch: 331476

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.100	0.09107		mg/L		91	75 - 125	1	20
Arsenic	0.0181		0.100	0.1183		mg/L		100	75 - 125	3	20
Barium	0.122	J	0.100	0.2133		mg/L		92	75 - 125	0	20
Beryllium	ND		0.100	0.1018		mg/L		102	75 - 125	2	20
Boron	0.0516	J B ^	1.00	1.132	^	mg/L		108	75 - 125	1	20
Cadmium	ND		0.100	0.09576		mg/L		96	75 - 125	3	20
Calcium	67.0		10.0	77.15	4	mg/L		102	75 - 125	3	20
Chromium	0.000876	J	0.100	0.09769		mg/L		97	75 - 125	3	20
Cobalt	0.0118		0.100	0.1058		mg/L		94	75 - 125	3	20
Lead	ND		0.100	0.09662		mg/L		97	75 - 125	2	20
Lithium	0.00730	J	0.100	0.09920		mg/L		92	75 - 125	2	20
Molybdenum	0.00167	J	0.100	0.1014		mg/L		100	75 - 125	3	20
Selenium	0.000770	J	0.100	0.09604		mg/L		95	75 - 125	2	20
Thallium	ND		0.100	0.1006		mg/L		101	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-330680/1-A
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330680

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:28	04/11/16 21:51	1

Lab Sample ID: LCS 490-330680/2-A
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 330680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.8029		ug/L		80	80 - 120

Lab Sample ID: 400-119778-I-4-E MS
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 330680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.8352		ug/L		84	75 - 125

Lab Sample ID: 400-119778-I-4-F MSD
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 330680

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.7897		ug/L		79	75 - 125	6	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-328125/1
Matrix: Water
Analysis Batch: 328125

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			04/08/16 18:45	1

Lab Sample ID: LCS 490-328125/2
Matrix: Water
Analysis Batch: 328125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	93.00		mg/L		93	90 - 110

Lab Sample ID: 490-101192-C-3 DU
Matrix: Water
Analysis Batch: 328125

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	699		693.0		mg/L		0.9	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-245638/1-A
Matrix: Water
Analysis Batch: 249606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245638

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02566	U	0.0471	0.0472	1.00	0.0833	pCi/L	04/13/16 11:37	05/05/16 07:18	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:18*	*1*

Lab Sample ID: LCS 160-245638/2-A
Matrix: Water
Analysis Batch: 249606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245638

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.58		1.34	1.00	0.0782	pCi/L	122	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*78.3*		*40 - 110*

Lab Sample ID: LCSD 160-245638/3-A
Matrix: Water
Analysis Batch: 249606

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 245638

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	12.63		1.25	1.00	0.116	pCi/L	113	68 - 137	0.37	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*82.9*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-245644/1-A
Matrix: Water
Analysis Batch: 248630

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245644

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.4046	U	0.244	0.247	1.00	0.513	pCi/L	04/13/16 12:28	04/29/16 11:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:45*	*1*
Y Carrier	*84.9*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:45*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-245644/2-A
Matrix: Water
Analysis Batch: 248630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245644

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.2	17.97		1.94	1.00	0.487	pCi/L	118	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*78.3*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

Lab Sample ID: LCSD 160-245644/3-A
Matrix: Water
Analysis Batch: 248630

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 245644

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			15.2	17.97		1.91	1.00	0.403	pCi/L	118	56 - 140	0	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*82.9*		*40 - 110*
Y Carrier	*91.2*		*40 - 110*

HPLC/IC

Analysis Batch: 332637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	9056A	
490-101188-6	MW-6	Total/NA	Water	9056A	
490-101188-7	MW-7	Total/NA	Water	9056A	
490-101188-8	MW-8	Total/NA	Water	9056A	
490-101188-9	MW-10	Total/NA	Water	9056A	

Analysis Batch: 334032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	9056A	
490-101188-6	MW-6	Total/NA	Water	9056A	
490-101188-7	MW-7	Total/NA	Water	9056A	
490-101188-8	MW-8	Total/NA	Water	9056A	
490-101188-9	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 330466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	3010A	
490-101188-6	MW-6	Total/NA	Water	3010A	
490-101188-7	MW-7	Total/NA	Water	3010A	
490-101188-8	MW-8	Total/NA	Water	3010A	
490-101188-9	MW-10	Total/NA	Water	3010A	

Prep Batch: 330680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	7470A	
490-101188-6	MW-6	Total/NA	Water	7470A	
490-101188-7	MW-7	Total/NA	Water	7470A	
490-101188-8	MW-8	Total/NA	Water	7470A	
490-101188-9	MW-10	Total/NA	Water	7470A	

Analysis Batch: 330724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	7470A	330680
490-101188-6	MW-6	Total/NA	Water	7470A	330680
490-101188-7	MW-7	Total/NA	Water	7470A	330680
490-101188-8	MW-8	Total/NA	Water	7470A	330680
490-101188-9	MW-10	Total/NA	Water	7470A	330680

Analysis Batch: 331103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-6	MW-6	Total/NA	Water	6020A	330466
490-101188-8	MW-8	Total/NA	Water	6020A	330466
490-101188-9	MW-10	Total/NA	Water	6020A	330466

Analysis Batch: 331476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	6020A	330466
490-101188-6	MW-6	Total/NA	Water	6020A	330466

Metals (Continued)

Analysis Batch: 331476 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-7	MW-7	Total/NA	Water	6020A	330466
490-101188-8	MW-8	Total/NA	Water	6020A	330466

Analysis Batch: 332612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	6020A	330466
490-101188-6	MW-6	Total/NA	Water	6020A	330466
490-101188-7	MW-7	Total/NA	Water	6020A	330466
490-101188-8	MW-8	Total/NA	Water	6020A	330466
490-101188-9	MW-10	Total/NA	Water	6020A	330466

General Chemistry

Analysis Batch: 328125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	SM 2540C	
490-101188-6	MW-6	Total/NA	Water	SM 2540C	
490-101188-7	MW-7	Total/NA	Water	SM 2540C	
490-101188-8	MW-8	Total/NA	Water	SM 2540C	
490-101188-9	MW-10	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 245638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	PrecSep-21	
490-101188-6	MW-6	Total/NA	Water	PrecSep-21	
490-101188-7	MW-7	Total/NA	Water	PrecSep-21	
490-101188-8	MW-8	Total/NA	Water	PrecSep-21	
490-101188-9	MW-10	Total/NA	Water	PrecSep-21	

Prep Batch: 245644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-5	MW-5	Total/NA	Water	PrecSep_0	
490-101188-6	MW-6	Total/NA	Water	PrecSep_0	
490-101188-7	MW-7	Total/NA	Water	PrecSep_0	
490-101188-8	MW-8	Total/NA	Water	PrecSep_0	
490-101188-9	MW-10	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-5

Date Collected: 04/04/16 13:45
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			332637	04/18/16 23:15	LDC	TAL NSH
Total/NA	Analysis	9056A		100			334032	04/23/16 09:38	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		1			331476	04/13/16 19:06	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			332612	04/12/16 20:31	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330680	04/11/16 16:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			330724	04/11/16 22:37	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	328125	04/08/16 18:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.65 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	249606	05/05/16 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.65 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1			248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249842	05/06/16 16:59	CAH	TAL SL

Client Sample ID: MW-6

Date Collected: 04/05/16 11:10
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			332637	04/18/16 23:34	LDC	TAL NSH
Total/NA	Analysis	9056A		100			334032	04/23/16 09:58	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		1			331476	04/13/16 19:12	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			331103	04/12/16 20:37	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			332612	04/12/16 20:37	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330680	04/11/16 16:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			330724	04/11/16 22:44	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	328125	04/08/16 18:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.24 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	249606	05/05/16 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.24 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1			248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249842	05/06/16 16:59	CAH	TAL SL

Client Sample ID: MW-7

Date Collected: 04/04/16 15:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			332637	04/18/16 23:52	LDC	TAL NSH
Total/NA	Analysis	9056A		100			334032	04/23/16 10:17	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		1			331476	04/13/16 19:29	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			332612	04/12/16 20:42	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330680	04/11/16 16:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			330724	04/11/16 22:47	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328125	04/08/16 18:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	249606	05/05/16 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1			248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249842	05/06/16 16:59	CAH	TAL SL

Client Sample ID: MW-8

Date Collected: 04/04/16 12:25
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			332637	04/19/16 00:11	LDC	TAL NSH
Total/NA	Analysis	9056A		100			334032	04/23/16 10:37	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		1			331476	04/13/16 19:34	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			331103	04/12/16 20:48	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			332612	04/12/16 20:48	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330680	04/11/16 16:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			330724	04/11/16 22:49	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	328125	04/08/16 18:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.89 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	249606	05/05/16 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.89 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1			248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249842	05/06/16 16:59	CAH	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Client Sample ID: MW-10

Date Collected: 04/05/16 12:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101188-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			332637	04/19/16 00:29	LDC	TAL NSH
Total/NA	Analysis	9056A		100			334032	04/23/16 10:56	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			331103	04/12/16 20:53	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53		TAL NSH
Total/NA	Analysis	6020A		10			332612	04/12/16 20:53	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330680	04/11/16 16:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			330724	04/11/16 22:51	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	328125	04/08/16 18:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.91 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	249606	05/05/16 07:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.91 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1			248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249842	05/06/16 16:59	CAH	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6020A	Metals (ICP/MS)	SW846	TAL NSH
7470A	Mercury (CVAA)	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Laboratory: TestAmerica Nashville

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-101188 Chain of Custody

Cooler Received/Opened On 4-7-16 09:40

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 1753 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID Raynger pH Strip Lot HC568401 Chlorine Strip Lot 1211515B _

2. Temperature of rep. sample or temp blank when opened: 1.2 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) DM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) DM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) DM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) DM

I certify that I attached a label with the unique LIMS number to each container (intial) DM

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
101188

Cooler Received/Opened On 4-7-16 09:40

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 9331 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID Raynger pH Strip Lot HC568401 Chlorine Strip Lot 1211515B _

2. Temperature of rep. sample or temp blank when opened: 2.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) EM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) EM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) EM

I certify that I attached a label with the unique LIMS number to each container (intial) EM

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
101188

COOLER RECEIPT FORM

Cooler Received/Opened On 4-7-16 09:40

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 9310 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID Raynger pH Strip Lot HC568401 Chlorine Strip Lot 1211515B _

2. Temperature of rep. sample or temp blank when opened: 1.9 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) JL

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) ELA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) ELA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) ELA

I certify that I attached a label with the unique LIMS number to each container (intial) ELA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

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THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
101188

COOLER RECEIPT FORM

Cooler Received/Opened On 4-7-16 09:40

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 2815 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID Raynger pH Strip Lot HC568401 Chlorine Strip Lot 1211515B

2. Temperature of rep. sample or temp blank when opened: 2.9 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
101188
#1
A

Cooler Received/Opened On 4-7-16 09:40

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 2907 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot HC568401 Chlorine Strip Lot 1211515B

2. Temperature of rep. sample or temp blank when opened: 0.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...(NA)

4. Were custody seals on outside of cooler? (YES)...NO...NA

If yes, how many and where: 1 Front

5. Were the seals intact, signed, and dated correctly? (YES)..NO...NA

6. Were custody papers inside cooler? YES..(NO)..NA

I certify that I opened the cooler and answered questions 1-6 (intial) JJT

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other (None)

9. Cooling process: (Ice) Ice-pack (Ice (direct contact)) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)..NO...NA

13a. Were VOA vials received? YES...(NO)...NA

b. Was there any observable headspace present in any VOA vial? YES...NO..(NA)

14. Was there a Trip Blank in this cooler? YES...(NO)..NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) BWG

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..(NA)

b. Did the bottle labels indicate that the correct preservatives were used (YES)..NO...NA

16. Was residual chlorine present? YES...NO...(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) BWG

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) BLA

I certify that I attached a label with the unique LIMS number to each container (intial) BLA

21. Were there Non-Conformance issues at login? YES..(NO) Was a NCM generated? YES...(NO)...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

1/31/2018 (Rev. 2)

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 4/6/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6000 Phone	TAT if different from Below: Standard		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: Wilson Landfill CCR Groundwater-Round 1	☐ 1 week		
Site: Wilson Station, Wilson Landfill	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-51439-16691.1
__1__ of __1__ COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	9040C, 9056_ORGFM_28D	6010B, 7470A	2540C_Calcd-TDS	Ra226 & 228 Combined	Sample Specific Notes:
MW-1	4/4/16	1135	G	Water	5	N	N	x	x	x	x	
MW-2	4/5/16	1555	G	Water	5	N	N	x	x	x	x	
MW-3	4/5/16	1450	G	Water	5	N	N	x	x	x	x	
MW-4	4/5/16	1345	G	Water	5	N	N	x	x	x	x	
MW-5	4/4/16	1345	G	Water	5	N	N	x	x	x	x	
MW-6	4/5/16	1110	G	Water	5	N	N	x	x	x	x	
MW-7	4/4/16	1540	G	Water	5	N	N	x	x	x	x	
MW-8	4/4/16	1225	G	Water	5	N	N	x	x	x	x	
MW-10	4/5/16	1240	G	Water	5	N	N	x	x	x	x	
DUPE	4/5/16	1500	G	Water	5	N	N	x	x	x	x	
								7	4	7	4	

Loc: 490
101188

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run in accordance with CCR Regulations

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by: Greg Dick	Company: Big Rivers Electric Corp.	Date/Time: 1400	Received by:	Company:	Date/Time:
Relinquished by	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: EAN	Date/Time: 4-7-16 940

1.2, 2.8, 1.9, 2.9, 0.1

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Gartner, Cathy	Carrier Tracking No(s):	COC No: 490-43169.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: cathy.gartner@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-101188-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/6/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Wilson Landfull CCR	Project #: 49010431			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (490-101188-1)	4/4/16	11:35 Central		Water			X	X	X	2	
MW-2 (490-101188-2)	4/5/16	15:55 Central		Water			X	X	X	2	
MW-3 (490-101188-3)	4/5/16	14:50 Central		Water			X	X	X	2	
MW-4 (490-101188-4)	4/5/16	13:45 Central		Water			X	X	X	2	
MW-5 (490-101188-5)	4/4/16	13:45 Central		Water			X	X	X	2	
MW-6 (490-101188-6)	4/5/16	11:10 Central		Water			X	X	X	2	
MW-7 (490-101188-7)	4/4/16	15:40 Central		Water			X	X	X	2	
MW-8 (490-101188-8)	4/4/16	12:25 Central		Water			X	X	X	2	
MW-10 (490-101188-9)	4/5/16	12:40 Central		Water			X	X	X	2	
DUPE (490-101188-10)	4/5/16	15:00 Central		Water			X	X	X	2	

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 4/11/16 13:11	Company	Received by:	Date/Time: 041216 0910	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-101188-1

Login Number: 101188

List Source: TestAmerica Nashville

List Number: 1

Creator: Abernathy, Eric

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-101188-1

Login Number: 101188
List Number: 2
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 04/12/16 01:30 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	12.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfull CCR

TestAmerica Job ID: 490-101188-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-101188-5	MW-5	68.7
490-101188-6	MW-6	72.1
490-101188-7	MW-7	70.7
490-101188-8	MW-8	76.1
490-101188-9	MW-10	70.4

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-101188-5	MW-5	68.7	89.7
490-101188-6	MW-6	72.1	88.6
490-101188-7	MW-7	70.7	89.3
490-101188-8	MW-8	76.1	90.8
490-101188-9	MW-10	70.4	88.2

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-104236-1
Client Project/Site: Wilson Landfill CCR
Sampling Event: Big Rivers CCR/SemiAnnual GW
Revision: 1

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 4:40:13 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-104236-5	MW-5	Water	05/20/16 10:45	05/23/16 09:50
490-104236-6	MW-6	Water	05/19/16 14:20	05/23/16 09:50
490-104236-7	MW-7	Water	05/19/16 15:15	05/23/16 09:50
490-104236-8	MW-8	Water	05/19/16 11:15	05/23/16 09:50
490-104236-9	MW-10	Water	05/18/16 12:35	05/23/16 09:50
490-104236-10	DUPE	Water	05/19/16 11:30	05/23/16 09:50
490-104236-11	FIELD BLANK	Water	05/19/16 16:30	05/23/16 09:50

Job ID: 490-104236-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-104236-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 5/23/2016 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.3º C, 0.7º C, 2.4º C, 2.4º C and 2.8º C.

RAD
Method(s) PrecSep_0: Radium-228 Batch 160-254160: Sample MW-4 (490-104236-4) was prepared at a reduced aliquot due to sediment and discoloration. The sample was not used to demonstrate batch duplicity to avoid matrix interference with homogeneity.

Method(s) PrecSep-21: Radium-226 Batch 160-254139: Sample MW-4 (490-104236-4) was prepared at a reduced aliquot due to sediment and discoloration. The sample was not used to demonstrate batch duplicity to avoid matrix interference with homogeneity.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Narrative

Job Narrative
490-104236-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 5/23/2016 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.3º C, 0.7º C, 2.4º C, 2.4º C and 2.8º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-343994 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-343994 contained Chloride above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-343994 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-5 (490-104236-5), MW-6 (490-104236-6), MW-7 (490-104236-7), MW-8 (490-104236-8), MW-10 (490-104236-9), and DUPE (490-104236-10). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank as well as the continuing calibration blank for analytical batch 490-344102 contained chloride above the method detection limit (MDL). The associated sample was not re-analyzed because the result was greater than 10X the value found in the method blank: MW-5 (490-104236-5).

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-344102 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-344629 contained Chloride above the method detection limit. This target

Job ID: 490-104236-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-344945 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-344945 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: Due to matrix interferences which required dilution of all associated samples, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-344629 was not analyzed. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 05/20/16 10:45
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	60.2	J B	600	40.0	mg/L			05/30/16 21:43	200
Fluoride	0.633	J	1.00	0.0100	mg/L			05/30/16 21:26	1
Sulfate	1950		1000	6.00	mg/L			05/30/16 21:43	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0283	J	0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	05/31/16 23:43	1
Arsenic	0.00523		0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 20:20	1
Barium	0.00973	J	0.200	0.0000980	mg/L		05/26/16 07:31	05/31/16 23:43	1
Beryllium	0.0000450	J	0.00200	0.0000367	mg/L		05/26/16 07:31	05/31/16 23:43	1
Boron	0.282	J B	1.00	0.000277	mg/L		05/26/16 07:31	05/31/16 23:43	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	05/31/16 23:43	1
Calcium	472		1.00	0.00284	mg/L		05/26/16 07:31	05/31/16 23:43	1
Chromium	0.00111	J	0.00300	0.000543	mg/L		05/26/16 07:31	05/31/16 23:43	1
Cobalt	0.00829		0.00500	0.0000263	mg/L		05/26/16 07:31	05/31/16 23:43	1
Lead	ND		0.00500	0.0000192	mg/L		05/26/16 07:31	05/31/16 23:43	1
Molybdenum	0.00383	J	0.0100	0.000223	mg/L		05/26/16 07:31	05/31/16 23:43	1
Selenium	0.000496	J	0.0100	0.000422	mg/L		05/26/16 07:31	05/31/16 23:43	1
Thallium	0.0000210	J	0.00100	0.0000152	mg/L		05/26/16 07:31	05/31/16 23:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 12:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.91		0.100	0.100	SU			05/28/16 09:19	1
Temperature	22.4		0.100	0.100	Degrees C			05/28/16 09:19	1
Total Dissolved Solids	2960		20.0	14.0	mg/L			05/24/16 17:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.308		0.103	0.107	1.00	0.101	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.607		0.257	0.263	1.00	0.361	pCi/L	06/01/16 17:32	06/21/16 13:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:31*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Client Sample ID: MW-5
Date Collected: 05/20/16 10:45
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-5
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.3		40 - 110	06/01/16 17:32	06/21/16 13:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.915		0.277	0.284	5.00	0.361	pCi/L		06/27/16 15:40	1

Client Sample ID: MW-6

Date Collected: 05/19/16 14:20
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.09	B	3.00	0.200	mg/L			05/29/16 01:12	1
Fluoride	0.390	J	1.00	0.0100	mg/L			05/29/16 01:12	1
Sulfate	1710		500	3.00	mg/L			06/01/16 08:34	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0419	J	0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:08	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000490	J	0.00200	0.0000187	mg/L		05/26/16 07:31	05/31/16 23:48	1
Arsenic	0.00736		0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 20:25	1
Barium	0.0108	J	0.200	0.0000980	mg/L		05/26/16 07:31	05/31/16 23:48	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/26/16 07:31	05/31/16 23:48	1
Boron	0.243	J B	1.00	0.000277	mg/L		05/26/16 07:31	05/31/16 23:48	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	05/31/16 23:48	1
Calcium	466		1.00	0.00284	mg/L		05/26/16 07:31	05/31/16 23:48	1
Chromium	0.000816	J	0.00300	0.000543	mg/L		05/26/16 07:31	05/31/16 23:48	1
Cobalt	0.00713		0.00500	0.0000263	mg/L		05/26/16 07:31	05/31/16 23:48	1
Lead	0.0000810	J	0.00500	0.0000192	mg/L		05/26/16 07:31	05/31/16 23:48	1
Molybdenum	0.00701	J	0.0100	0.000223	mg/L		05/26/16 07:31	05/31/16 23:48	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	05/31/16 23:48	1
Thallium	0.0000370	J	0.00100	0.0000152	mg/L		05/26/16 07:31	05/31/16 23:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 12:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.81		0.100	0.100	SU			05/28/16 09:19	1
Temperature	22.4		0.100	0.100	Degrees C			05/28/16 09:19	1
Total Dissolved Solids	2780		20.0	14.0	mg/L			05/24/16 17:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.491		0.125	0.133	1.00	0.100	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0900	U	0.222	0.222	1.00	0.383	pCi/L	06/01/16 17:32	06/21/16 13:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:31*	*1*

Client Sample ID: MW-6
Date Collected: 05/19/16 14:20
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-6
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.0		40 - 110	06/01/16 17:32	06/21/16 13:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.581		0.255	0.259	5.00	0.383	pCi/L		06/27/16 15:40	1

Client Sample ID: MW-7

Date Collected: 05/19/16 15:15
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.31**	**B**	3.00	0.200	mg/L			05/29/16 01:46	1
Fluoride	**0.357**	**J**	1.00	0.0100	mg/L			05/29/16 01:46	1
Sulfate	**784**		250	1.50	mg/L			06/03/16 03:22	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0241**	**J**	0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:14	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	05/31/16 23:53	1
Arsenic	**0.00408**	**J**	0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 20:30	1
Barium	**0.0131**	**J**	0.200	0.0000980	mg/L		05/26/16 07:31	05/31/16 23:53	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/26/16 07:31	05/31/16 23:53	1
Boron	**0.165**	**J B**	1.00	0.000277	mg/L		05/26/16 07:31	05/31/16 23:53	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	05/31/16 23:53	1
Calcium	**241**		1.00	0.00284	mg/L		05/26/16 07:31	05/31/16 23:53	1
Chromium	**0.00122**	**J**	0.00300	0.000543	mg/L		05/26/16 07:31	05/31/16 23:53	1
Cobalt	**0.00580**		0.00500	0.0000263	mg/L		05/26/16 07:31	05/31/16 23:53	1
Lead	ND		0.00500	0.0000192	mg/L		05/26/16 07:31	05/31/16 23:53	1
Molybdenum	**0.00204**	**J**	0.0100	0.000223	mg/L		05/26/16 07:31	05/31/16 23:53	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	05/31/16 23:53	1
Thallium	ND		0.00100	0.0000152	mg/L		05/26/16 07:31	05/31/16 23:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.23**		0.100	0.100	SU			05/28/16 09:19	1
Temperature	**22.4**		0.100	0.100	Degrees C			05/28/16 09:19	1
Total Dissolved Solids	**1450**		20.0	14.0	mg/L			05/24/16 17:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.150**		0.0841	0.0852	1.00	0.111	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.408**		0.242	0.245	1.00	0.365	pCi/L	06/01/16 17:32	06/21/16 13:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:31*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Client Sample ID: MW-7
Date Collected: 05/19/16 15:15
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-7
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.5		40 - 110	06/01/16 17:32	06/21/16 13:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.558		0.257	0.260	5.00	0.365	pCi/L		06/27/16 15:40	1

Client Sample ID: MW-8

Date Collected: 05/19/16 11:15
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.48**	**B**	3.00	0.200	mg/L			05/29/16 02:20	1
Fluoride	**0.361**	**J**	1.00	0.0100	mg/L			05/29/16 02:20	1
Sulfate	**910**		500	3.00	mg/L			06/03/16 03:42	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:19	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	05/31/16 23:57	1
Arsenic	**0.00698**		0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 20:50	1
Barium	**0.0213**	**J**	0.200	0.0000980	mg/L		05/26/16 07:31	05/31/16 23:57	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/26/16 07:31	05/31/16 23:57	1
Boron	**0.0385**	**J B**	1.00	0.000277	mg/L		05/26/16 07:31	05/31/16 23:57	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	05/31/16 23:57	1
Calcium	**242**		1.00	0.00284	mg/L		05/26/16 07:31	05/31/16 23:57	1
Chromium	**0.000886**	**J**	0.00300	0.000543	mg/L		05/26/16 07:31	05/31/16 23:57	1
Cobalt	**0.00156**	**J**	0.00500	0.0000263	mg/L		05/26/16 07:31	05/31/16 23:57	1
Lead	ND		0.00500	0.0000192	mg/L		05/26/16 07:31	05/31/16 23:57	1
Molybdenum	**0.0142**		0.0100	0.000223	mg/L		05/26/16 07:31	05/31/16 23:57	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	05/31/16 23:57	1
Thallium	ND		0.00100	0.0000152	mg/L		05/26/16 07:31	05/31/16 23:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 13:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.14**		0.100	0.100	SU			05/28/16 09:19	1
Temperature	**22.4**		0.100	0.100	Degrees C			05/28/16 09:19	1
Total Dissolved Solids	**1590**		20.0	14.0	mg/L			05/24/16 17:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.673**		0.142	0.155	1.00	0.0939	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.639**		0.268	0.275	1.00	0.373	pCi/L	06/01/16 17:32	06/21/16 13:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:32*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Client Sample ID: MW-8
Date Collected: 05/19/16 11:15
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-8
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.0		40 - 110	06/01/16 17:32	06/21/16 13:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.31		0.304	0.315	5.00	0.373	pCi/L		06/27/16 15:40	1

Client Sample ID: MW-10

Date Collected: 05/18/16 12:35
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85.7**	**J B**	300	20.0	mg/L			05/29/16 03:11	100
Fluoride	**0.329**	**J**	1.00	0.0100	mg/L			05/29/16 02:54	1
Sulfate	**2210**		500	3.00	mg/L			05/29/16 03:11	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:25	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	06/01/16 00:02	1
Arsenic	**0.00390**	**J**	0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 20:55	1
Barium	**0.00816**	**J**	0.200	0.0000980	mg/L		05/26/16 07:31	06/01/16 00:02	1
Beryllium	**0.0000430**	**J**	0.00200	0.0000367	mg/L		05/26/16 07:31	06/01/16 00:02	1
Boron	**0.217**	**J B**	1.00	0.000277	mg/L		05/26/16 07:31	06/01/16 00:02	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	06/01/16 00:02	1
Calcium	**390**		1.00	0.00284	mg/L		05/26/16 07:31	06/01/16 00:02	1
Chromium	**0.00119**	**J**	0.00300	0.000543	mg/L		05/26/16 07:31	06/01/16 00:02	1
Cobalt	**0.113**		0.00500	0.0000263	mg/L		05/26/16 07:31	06/01/16 00:02	1
Lead	**0.0000680**	**J**	0.00500	0.0000192	mg/L		05/26/16 07:31	06/01/16 00:02	1
Molybdenum	ND		0.0100	0.000223	mg/L		05/26/16 07:31	06/01/16 00:02	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	06/01/16 00:02	1
Thallium	**0.0000290**	**J**	0.00100	0.0000152	mg/L		05/26/16 07:31	06/01/16 00:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 13:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.60**		0.100	0.100	SU			05/28/16 09:19	1
Temperature	**22.4**		0.100	0.100	Degrees C			05/28/16 09:19	1
Total Dissolved Solids	**3300**		20.0	14.0	mg/L			05/24/16 17:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0937	U	0.0691	0.0697	1.00	0.100	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.259	U	0.259	0.260	1.00	0.421	pCi/L	06/01/16 17:32	06/21/16 13:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:32*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Client Sample ID: MW-10
Date Collected: 05/18/16 12:35
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-9
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	06/01/16 17:32	06/21/16 13:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.353	U	0.268	0.269	5.00	0.421	pCi/L		06/27/16 15:40	1

Client Sample ID: DUPE

Date Collected: 05/19/16 11:30
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-10

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.39**	**B**	3.00	0.200	mg/L			05/29/16 03:28	1
Fluoride	**0.347**	**J**	1.00	0.0100	mg/L			05/29/16 03:28	1
Sulfate	**856**		500	3.00	mg/L			06/03/16 04:22	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:30	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	06/01/16 00:07	1
Arsenic	**0.00685**		0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 21:00	1
Barium	**0.0206**	**J**	0.200	0.0000980	mg/L		05/26/16 07:31	06/01/16 00:07	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/26/16 07:31	06/01/16 00:07	1
Boron	**0.0385**	**J B**	1.00	0.000277	mg/L		05/26/16 07:31	06/01/16 00:07	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	06/01/16 00:07	1
Calcium	**231**		1.00	0.00284	mg/L		05/26/16 07:31	06/01/16 00:07	1
Chromium	**0.000757**	**J**	0.00300	0.000543	mg/L		05/26/16 07:31	06/01/16 00:07	1
Cobalt	**0.00163**	**J**	0.00500	0.0000263	mg/L		05/26/16 07:31	06/01/16 00:07	1
Lead	ND		0.00500	0.0000192	mg/L		05/26/16 07:31	06/01/16 00:07	1
Molybdenum	**0.0138**		0.0100	0.000223	mg/L		05/26/16 07:31	06/01/16 00:07	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	06/01/16 00:07	1
Thallium	ND		0.00100	0.0000152	mg/L		05/26/16 07:31	06/01/16 00:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 13:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.64**		0.100	0.100	SU			06/03/16 11:47	1
Temperature	**22.8**		0.100	0.100	Degrees C			06/03/16 11:47	1
Total Dissolved Solids	**1590**		20.0	14.0	mg/L			05/24/16 17:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.639**		0.137	0.149	1.00	0.0910	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.351	U	0.277	0.279	1.00	0.440	pCi/L	06/01/16 17:32	06/21/16 13:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:32*	*1*

Client Sample ID: DUPE
Date Collected: 05/19/16 11:30
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-10
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.4		40 - 110	06/01/16 17:32	06/21/16 13:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.990		0.310	0.317	5.00	0.440	pCi/L		06/27/16 15:40	1

Client Sample ID: FIELD BLANK

Date Collected: 05/19/16 16:30
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.730**	**J B**	3.00	0.200	mg/L			05/29/16 03:45	1
Fluoride	ND		1.00	0.0100	mg/L			05/29/16 03:45	1
Sulfate	**0.315**	**J**	5.00	0.0300	mg/L			05/29/16 03:45	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 17:35	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	06/01/16 00:26	1
Arsenic	ND		0.00500	0.000291	mg/L		05/26/16 07:31	06/01/16 00:26	1
Barium	ND		0.200	0.0000980	mg/L		05/26/16 07:31	06/01/16 00:26	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/26/16 07:31	06/01/16 00:26	1
Boron	**0.00139**	**J B**	1.00	0.000277	mg/L		05/26/16 07:31	06/01/16 00:26	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	06/01/16 00:26	1
Calcium	**0.00447**	**J**	1.00	0.00284	mg/L		05/26/16 07:31	06/01/16 00:26	1
Chromium	ND		0.00300	0.000543	mg/L		05/26/16 07:31	06/01/16 00:26	1
Cobalt	ND		0.00500	0.0000263	mg/L		05/26/16 07:31	06/01/16 00:26	1
Lead	ND		0.00500	0.0000192	mg/L		05/26/16 07:31	06/01/16 00:26	1
Molybdenum	ND		0.0100	0.000223	mg/L		05/26/16 07:31	06/01/16 00:26	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	06/01/16 00:26	1
Thallium	ND		0.00100	0.0000152	mg/L		05/26/16 07:31	06/01/16 00:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.47**		0.100	0.100	SU			06/03/16 14:36	1
Temperature	**22.2**		0.100	0.100	Degrees C			06/03/16 14:36	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/26/16 16:27	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.185**		0.0829	0.0846	1.00	0.0970	pCi/L	06/01/16 14:38	06/24/16 06:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:17*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0444	U	0.212	0.212	1.00	0.386	pCi/L	06/01/16 17:32	06/21/16 13:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:32*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Client Sample ID: FIELD BLANK
Date Collected: 05/19/16 16:30
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-11
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	06/01/16 17:32	06/21/16 13:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.141	U	0.228	0.228	5.00	0.386	pCi/L		06/27/16 15:40	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-343994/3
Matrix: Water
Analysis Batch: 343994

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4560	J	3.00	0.200	mg/L			05/28/16 20:21	1
Fluoride	ND		1.00	0.0100	mg/L			05/28/16 20:21	1
Sulfate	ND		5.00	0.0300	mg/L			05/28/16 20:21	1

Lab Sample ID: LCS 490-343994/4
Matrix: Water
Analysis Batch: 343994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.59		mg/L		106	80 - 120
Fluoride	1.00	1.049		mg/L		105	80 - 120
Sulfate	10.0	10.51		mg/L		105	80 - 120

Lab Sample ID: LCSD 490-343994/5
Matrix: Water
Analysis Batch: 343994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.68		mg/L		107	80 - 120	1	20
Fluoride	1.00	1.053		mg/L		105	80 - 120	0	20
Sulfate	10.0	10.53		mg/L		105	80 - 120	0	20

Lab Sample ID: 490-104186-B-3 MS
Matrix: Water
Analysis Batch: 343994

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	175	E B	2.00	141.7	E 4	mg/L		-1653	80 - 120
Fluoride	2.57		0.200	2.293	4	mg/L		-137	80 - 120
Sulfate	657	E	2.00	543.0	E 4	mg/L		-5713	80 - 120

Lab Sample ID: 490-104186-B-3 MSD
Matrix: Water
Analysis Batch: 343994

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	175	E B	2.00	141.0	E 4	mg/L		-1683	80 - 120	0	20
Fluoride	2.57		0.200	2.329	4	mg/L		-120	80 - 120	2	20
Sulfate	657	E	2.00	557.7	E 4	mg/L		-4975	80 - 120	3	20

Lab Sample ID: MB 490-344102/12
Matrix: Water
Analysis Batch: 344102

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.5930	J	3.00	0.200	mg/L			05/30/16 19:44	1
Fluoride	ND		1.00	0.0100	mg/L			05/30/16 19:44	1
Sulfate	ND		5.00	0.0300	mg/L			05/30/16 19:44	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-344102/13
Matrix: Water
Analysis Batch: 344102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.77		mg/L		108	80 - 120
Fluoride	1.00	1.024		mg/L		102	80 - 120
Sulfate	10.0	10.27		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-344102/14
Matrix: Water
Analysis Batch: 344102

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.83		mg/L		108	80 - 120	0	20
Fluoride	1.00	1.030		mg/L		103	80 - 120	1	20
Sulfate	10.0	10.29		mg/L		103	80 - 120	0	20

Lab Sample ID: 490-104186-B-1 MS
Matrix: Water
Analysis Batch: 344102

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.39	B F1	2.00	7.645	F1	mg/L		13	80 - 120
Fluoride	0.215	J	0.200	0.3741	J	mg/L		80	80 - 120
Sulfate	177	E	2.00	142.3	E 4	mg/L		-1714	80 - 120

Lab Sample ID: 490-104186-B-1 MSD
Matrix: Water
Analysis Batch: 344102

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.39	B F1	2.00	7.618	F1	mg/L		11	80 - 120	0	20
Fluoride	0.215	J	0.200	0.3991	J	mg/L		92	80 - 120	6	20
Sulfate	177	E	2.00	142.2	E 4	mg/L		-1719	80 - 120	0	20

Lab Sample ID: MB 490-344629/3
Matrix: Water
Analysis Batch: 344629

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.5436	J	3.00	0.200	mg/L			06/01/16 06:18	1
Fluoride	ND		1.00	0.0100	mg/L			06/01/16 06:18	1
Sulfate	ND		5.00	0.0300	mg/L			06/01/16 06:18	1

Lab Sample ID: LCS 490-344629/4
Matrix: Water
Analysis Batch: 344629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.59		mg/L		106	80 - 120
Fluoride	1.00	1.053		mg/L		105	80 - 120
Sulfate	10.0	10.32		mg/L		103	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 490-344629/5
Matrix: Water
Analysis Batch: 344629

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.61		mg/L		106	80 - 120	0	20
Fluoride	1.00	1.070		mg/L		107	80 - 120	2	20
Sulfate	10.0	10.40		mg/L		104	80 - 120	1	20

Lab Sample ID: MB 490-344945/3
Matrix: Water
Analysis Batch: 344945

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2833	J	3.00	0.200	mg/L			06/03/16 00:01	1
Fluoride	ND		1.00	0.0100	mg/L			06/03/16 00:01	1
Sulfate	ND		5.00	0.0300	mg/L			06/03/16 00:01	1

Lab Sample ID: LCS 490-344945/4
Matrix: Water
Analysis Batch: 344945

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.490		mg/L		95	80 - 120
Fluoride	1.00	0.9472	J	mg/L		95	80 - 120
Sulfate	10.0	11.80		mg/L		118	80 - 120

Lab Sample ID: LCSD 490-344945/5
Matrix: Water
Analysis Batch: 344945

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.261		mg/L		93	80 - 120	2	20
Fluoride	1.00	0.9705	J	mg/L		97	80 - 120	2	20
Sulfate	10.0	11.79		mg/L		118	80 - 120	0	20

Lab Sample ID: 490-104186-A-2 MS
Matrix: Water
Analysis Batch: 344945

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.36	F1 B	2.00	4.483	F1	mg/L		56	80 - 120
Fluoride	0.948	J	0.200	0.9921	J 4	mg/L		22	80 - 120
Sulfate	2640	E	2.00	2195	E 4	mg/L		-2246	80 - 120

Lab Sample ID: 490-104186-A-2 MSD
Matrix: Water
Analysis Batch: 344945

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.36	F1 B	2.00	4.455	F1	mg/L		55	80 - 120	1	20
Fluoride	0.948	J	0.200	0.9644	J 4	mg/L		8	80 - 120	3	20
Sulfate	2640	E	2.00	2153	E 4	mg/L		-2457	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-177441/1-A
Matrix: Water
Analysis Batch: 177708

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 177441

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/26/16 07:29	05/27/16 16:11	1

Lab Sample ID: LCS 180-177441/2-A
Matrix: Water
Analysis Batch: 177708

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 177441

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9330		mg/L		93	80 - 120

Lab Sample ID: LCSD 180-177441/3-A
Matrix: Water
Analysis Batch: 177708

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 177441

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9298		mg/L		93	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-177442/1-A
Matrix: Water
Analysis Batch: 177846

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 177442

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/26/16 07:31	05/31/16 22:56	1
Arsenic	ND		0.00500	0.000291	mg/L		05/26/16 07:31	05/31/16 22:56	1
Barium	ND		0.200	0.0000980	mg/L		05/26/16 07:31	05/31/16 22:56	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/26/16 07:31	05/31/16 22:56	1
Boron	0.0006260	J	1.00	0.000277	mg/L		05/26/16 07:31	05/31/16 22:56	1
Cadmium	ND		0.00100	0.000114	mg/L		05/26/16 07:31	05/31/16 22:56	1
Calcium	ND		1.00	0.00284	mg/L		05/26/16 07:31	05/31/16 22:56	1
Chromium	ND		0.00300	0.000543	mg/L		05/26/16 07:31	05/31/16 22:56	1
Cobalt	ND		0.00500	0.0000263	mg/L		05/26/16 07:31	05/31/16 22:56	1
Lead	ND		0.00500	0.0000192	mg/L		05/26/16 07:31	05/31/16 22:56	1
Molybdenum	ND		0.0100	0.000223	mg/L		05/26/16 07:31	05/31/16 22:56	1
Selenium	ND		0.0100	0.000422	mg/L		05/26/16 07:31	05/31/16 22:56	1
Thallium	ND		0.00100	0.0000152	mg/L		05/26/16 07:31	05/31/16 22:56	1

Lab Sample ID: LCS 180-177442/2-A
Matrix: Water
Analysis Batch: 177846

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 177442

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4527		mg/L		91	80 - 120
Arsenic	0.0400	0.04095		mg/L		102	80 - 120
Barium	2.00	1.788		mg/L		89	80 - 120
Beryllium	0.0500	0.05293		mg/L		106	80 - 120
Boron	1.00	0.8050	J	mg/L		81	80 - 120
Cadmium	0.0500	0.04790		mg/L		96	80 - 120
Calcium	50.0	50.39		mg/L		101	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-177442/2-A
Matrix: Water
Analysis Batch: 177846

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 177442

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.2047		mg/L		102	80 - 120
Cobalt	0.500	0.5273		mg/L		105	80 - 120
Lead	0.0200	0.01949		mg/L		97	80 - 120
Molybdenum	1.00	1.002		mg/L		100	80 - 120
Selenium	0.0100	0.01022		mg/L		102	80 - 120
Thallium	0.0500	0.04852		mg/L		97	80 - 120

Lab Sample ID: LCSD 180-177442/3-A
Matrix: Water
Analysis Batch: 177846

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 177442

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.4810		mg/L		96	80 - 120	6	20
Arsenic	0.0400	0.04206		mg/L		105	80 - 120	3	20
Barium	2.00	1.867		mg/L		93	80 - 120	4	20
Beryllium	0.0500	0.04864		mg/L		97	80 - 120	8	20
Boron	1.00	0.8073	J	mg/L		81	80 - 120	0	20
Cadmium	0.0500	0.04855		mg/L		97	80 - 120	1	20
Calcium	50.0	48.56		mg/L		97	80 - 120	4	20
Chromium	0.200	0.2083		mg/L		104	80 - 120	2	20
Cobalt	0.500	0.5513		mg/L		110	80 - 120	4	20
Lead	0.0200	0.02003		mg/L		100	80 - 120	3	20
Molybdenum	1.00	1.054		mg/L		105	80 - 120	5	20
Selenium	0.0100	0.01025		mg/L		103	80 - 120	0	20
Thallium	0.0500	0.04998		mg/L		100	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-342385/1-A
Matrix: Water
Analysis Batch: 342578

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 342385

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/24/16 05:28	05/24/16 12:19	1

Lab Sample ID: LCS 490-342385/2-A
Matrix: Water
Analysis Batch: 342578

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 342385

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9667		ug/L		97	80 - 120

Lab Sample ID: 490-104186-F-3-B MS
Matrix: Water
Analysis Batch: 342578

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 342385

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.8799		ug/L		88	75 - 125

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 490-104186-F-3-C MSD
Matrix: Water
Analysis Batch: 342578

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 342385

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8649		ug/L		86	75 - 125	2	20

Method: 9040C - pH

Lab Sample ID: LCS 490-343809/1
Matrix: Water
Analysis Batch: 343809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.990		SU		100	98 - 103

Lab Sample ID: 490-104183-A-1 DU
Matrix: Water
Analysis Batch: 343809

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.40		7.370		SU		0.4	20
Temperature	22.4		22.40		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-341556/1
Matrix: Water
Analysis Batch: 341556

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7.000	J	10.0	7.00	mg/L			05/26/16 16:27	1

Lab Sample ID: LCS 490-341556/2
Matrix: Water
Analysis Batch: 341556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	105.0		mg/L		105	90 - 110

Lab Sample ID: 490-104180-B-1 DU
Matrix: Water
Analysis Batch: 341556

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	865	B	876.0		mg/L		1	20

Lab Sample ID: MB 490-342094/1
Matrix: Water
Analysis Batch: 342094

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/24/16 17:45	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-342094/2
Matrix: Water
Analysis Batch: 342094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	90.00		mg/L		90	90 - 110		

Lab Sample ID: 490-104236-9 DU
Matrix: Water
Analysis Batch: 342094

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	3300			3322		mg/L				0.7	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-254139/1-A
Matrix: Water
Analysis Batch: 257878

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254139

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05532	U	0.0688	0.0689	1.00	0.114	pCi/L	06/01/16 14:38	06/24/16 06:16	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*06/01/16 14:38*	*06/24/16 06:16*	*1*

Lab Sample ID: LCS 160-254139/2-A
Matrix: Water
Analysis Batch: 257974

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 254139

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.81		1.36	1.00	0.0689	pCi/L	124	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.4*		*40 - 110*

Lab Sample ID: 500-112198-D-1-C DU
Matrix: Water
Analysis Batch: 257881

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 254139

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.150			0.1511		0.0842	1.00	0.108	pCi/L			0.01	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.8*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-254160/1-A
Matrix: Water
Analysis Batch: 257291

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254160

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2591	U	0.238	0.239	1.00	0.383	pCi/L	06/01/16 17:32	06/21/16 13:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:26*	*1*
Y Carrier	*88.2*		*40 - 110*	*06/01/16 17:32*	*06/21/16 13:26*	*1*

Lab Sample ID: LCS 160-254160/2-A
Matrix: Water
Analysis Batch: 257291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 254160

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.0	18.24		1.91	1.00	0.350	pCi/L	122	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.4*		*40 - 110*
Y Carrier	*86.0*		*40 - 110*

Lab Sample ID: 500-112198-D-1-E DU
Matrix: Water
Analysis Batch: 257290

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 254160

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.00917	U		0.1984	U	0.252	1.00	0.417	pCi/L			0.40	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.8*		*40 - 110*
Y Carrier	*86.7*		*40 - 110*

HPLC/IC

Analysis Batch: 343994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-6	MW-6	Total/NA	Water	9056A	
490-104236-7	MW-7	Total/NA	Water	9056A	
490-104236-8	MW-8	Total/NA	Water	9056A	
490-104236-9	MW-10	Total/NA	Water	9056A	
490-104236-9	MW-10	Total/NA	Water	9056A	
490-104236-10	DUPE	Total/NA	Water	9056A	
490-104236-11	FIELD BLANK	Total/NA	Water	9056A	

Analysis Batch: 344102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	9056A	
490-104236-5	MW-5	Total/NA	Water	9056A	

Analysis Batch: 344629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-6	MW-6	Total/NA	Water	9056A	

Analysis Batch: 344945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-7	MW-7	Total/NA	Water	9056A	
490-104236-8	MW-8	Total/NA	Water	9056A	
490-104236-10	DUPE	Total/NA	Water	9056A	

Metals

Prep Batch: 177441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total Recoverable	Water	3005A	
490-104236-6	MW-6	Total Recoverable	Water	3005A	
490-104236-7	MW-7	Total Recoverable	Water	3005A	
490-104236-8	MW-8	Total Recoverable	Water	3005A	
490-104236-9	MW-10	Total Recoverable	Water	3005A	
490-104236-10	DUPE	Total Recoverable	Water	3005A	
490-104236-11	FIELD BLANK	Total Recoverable	Water	3005A	

Prep Batch: 177442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total Recoverable	Water	3005A	
490-104236-6	MW-6	Total Recoverable	Water	3005A	
490-104236-7	MW-7	Total Recoverable	Water	3005A	
490-104236-8	MW-8	Total Recoverable	Water	3005A	
490-104236-9	MW-10	Total Recoverable	Water	3005A	
490-104236-10	DUPE	Total Recoverable	Water	3005A	
490-104236-11	FIELD BLANK	Total Recoverable	Water	3005A	

Analysis Batch: 177708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total Recoverable	Water	6010C	177441
490-104236-6	MW-6	Total Recoverable	Water	6010C	177441
490-104236-7	MW-7	Total Recoverable	Water	6010C	177441

Metals (Continued)

Analysis Batch: 177708 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-8	MW-8	Total Recoverable	Water	6010C	177441
490-104236-9	MW-10	Total Recoverable	Water	6010C	177441
490-104236-10	DUPE	Total Recoverable	Water	6010C	177441
490-104236-11	FIELD BLANK	Total Recoverable	Water	6010C	177441

Analysis Batch: 177846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total Recoverable	Water	6020A	177442
490-104236-6	MW-6	Total Recoverable	Water	6020A	177442
490-104236-7	MW-7	Total Recoverable	Water	6020A	177442
490-104236-8	MW-8	Total Recoverable	Water	6020A	177442
490-104236-9	MW-10	Total Recoverable	Water	6020A	177442
490-104236-10	DUPE	Total Recoverable	Water	6020A	177442
490-104236-11	FIELD BLANK	Total Recoverable	Water	6020A	177442

Analysis Batch: 178055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total Recoverable	Water	6020A	177442
490-104236-6	MW-6	Total Recoverable	Water	6020A	177442
490-104236-7	MW-7	Total Recoverable	Water	6020A	177442
490-104236-8	MW-8	Total Recoverable	Water	6020A	177442
490-104236-9	MW-10	Total Recoverable	Water	6020A	177442
490-104236-10	DUPE	Total Recoverable	Water	6020A	177442

Prep Batch: 342385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	7470A	
490-104236-6	MW-6	Total/NA	Water	7470A	
490-104236-7	MW-7	Total/NA	Water	7470A	
490-104236-8	MW-8	Total/NA	Water	7470A	
490-104236-9	MW-10	Total/NA	Water	7470A	
490-104236-10	DUPE	Total/NA	Water	7470A	
490-104236-11	FIELD BLANK	Total/NA	Water	7470A	

Analysis Batch: 342578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	7470A	342385
490-104236-6	MW-6	Total/NA	Water	7470A	342385
490-104236-7	MW-7	Total/NA	Water	7470A	342385
490-104236-8	MW-8	Total/NA	Water	7470A	342385
490-104236-9	MW-10	Total/NA	Water	7470A	342385
490-104236-10	DUPE	Total/NA	Water	7470A	342385
490-104236-11	FIELD BLANK	Total/NA	Water	7470A	342385

General Chemistry

Analysis Batch: 341556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-11	FIELD BLANK	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 342094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	SM 2540C	
490-104236-6	MW-6	Total/NA	Water	SM 2540C	
490-104236-7	MW-7	Total/NA	Water	SM 2540C	
490-104236-8	MW-8	Total/NA	Water	SM 2540C	
490-104236-9	MW-10	Total/NA	Water	SM 2540C	
490-104236-10	DUPE	Total/NA	Water	SM 2540C	

Analysis Batch: 343809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	9040C	
490-104236-6	MW-6	Total/NA	Water	9040C	
490-104236-7	MW-7	Total/NA	Water	9040C	
490-104236-8	MW-8	Total/NA	Water	9040C	
490-104236-9	MW-10	Total/NA	Water	9040C	

Analysis Batch: 345134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-10	DUPE	Total/NA	Water	9040C	

Analysis Batch: 345184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-11	FIELD BLANK	Total/NA	Water	9040C	

Rad

Prep Batch: 254139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	PrecSep-21	
490-104236-6	MW-6	Total/NA	Water	PrecSep-21	
490-104236-7	MW-7	Total/NA	Water	PrecSep-21	
490-104236-8	MW-8	Total/NA	Water	PrecSep-21	
490-104236-9	MW-10	Total/NA	Water	PrecSep-21	
490-104236-10	DUPE	Total/NA	Water	PrecSep-21	
490-104236-11	FIELD BLANK	Total/NA	Water	PrecSep-21	

Prep Batch: 254160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104236-5	MW-5	Total/NA	Water	PrecSep_0	
490-104236-6	MW-6	Total/NA	Water	PrecSep_0	
490-104236-7	MW-7	Total/NA	Water	PrecSep_0	
490-104236-8	MW-8	Total/NA	Water	PrecSep_0	
490-104236-9	MW-10	Total/NA	Water	PrecSep_0	
490-104236-10	DUPE	Total/NA	Water	PrecSep_0	
490-104236-11	FIELD BLANK	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-5

Date Collected: 05/20/16 10:45
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			344102	05/30/16 21:26	JHS	TAL NSH
Total/NA	Analysis	9056A		200			344102	05/30/16 21:43	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:03	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	05/31/16 23:43	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			178055	06/01/16 20:20	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 12:52	BLG	TAL NSH
Total/NA	Analysis	9040C		1			343809	05/28/16 09:19	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	342094	05/24/16 17:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.78 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.78 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:31	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 05/19/16 14:20
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			343994	05/29/16 01:12	KS	TAL NSH
Total/NA	Analysis	9056A		100			344629	06/01/16 08:34	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:08	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	05/31/16 23:48	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			178055	06/01/16 20:25	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 12:54	BLG	TAL NSH
Total/NA	Analysis	9040C		1			343809	05/28/16 09:19	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	342094	05/24/16 17:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.15 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.15 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:31	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Client Sample ID: MW-7

Lab Sample ID: 490-104236-7

Date Collected: 05/19/16 15:15

Matrix: Water

Date Received: 05/23/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			343994	05/29/16 01:46	KS	TAL NSH
Total/NA	Analysis	9056A		50			344945	06/03/16 03:22	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:14	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	05/31/16 23:53	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			178055	06/01/16 20:30	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 13:01	BLG	TAL NSH
Total/NA	Analysis	9040C		1			343809	05/28/16 09:19	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	342094	05/24/16 17:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.88 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.88 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:31	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Client Sample ID: MW-8

Lab Sample ID: 490-104236-8

Date Collected: 05/19/16 11:15

Matrix: Water

Date Received: 05/23/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			343994	05/29/16 02:20	KS	TAL NSH
Total/NA	Analysis	9056A		100			344945	06/03/16 03:42	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:19	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	05/31/16 23:57	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			178055	06/01/16 20:50	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 13:04	BLG	TAL NSH
Total/NA	Analysis	9040C		1			343809	05/28/16 09:19	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	342094	05/24/16 17:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.91 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.91 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Client Sample ID: MW-10

Lab Sample ID: 490-104236-9

Date Collected: 05/18/16 12:35

Matrix: Water

Date Received: 05/23/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			343994	05/29/16 02:54	KS	TAL NSH
Total/NA	Analysis	9056A		100			343994	05/29/16 03:11	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:25	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	06/01/16 00:02	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			178055	06/01/16 20:55	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 13:06	BLG	TAL NSH
Total/NA	Analysis	9040C		1			343809	05/28/16 09:19	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	342094	05/24/16 17:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.48 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.48 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-104236-10

Date Collected: 05/19/16 11:30

Matrix: Water

Date Received: 05/23/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			343994	05/29/16 03:28	KS	TAL NSH
Total/NA	Analysis	9056A		100			344945	06/03/16 04:22	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:30	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	06/01/16 00:07	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			178055	06/01/16 21:00	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 13:08	BLG	TAL NSH
Total/NA	Analysis	9040C		1			345134	06/03/16 11:47	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	342094	05/24/16 17:45	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.05 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.05 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Client Sample ID: FIELD BLANK

Date Collected: 05/19/16 16:30
Date Received: 05/23/16 09:50

Lab Sample ID: 490-104236-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			343994	05/29/16 03:45	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177441	05/26/16 07:29	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			177708	05/27/16 17:35	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177442	05/26/16 07:31	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	177846	06/01/16 00:26	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	342385	05/24/16 05:28	BLG	TAL NSH
Total/NA	Analysis	7470A		1			342578	05/24/16 13:11	BLG	TAL NSH
Total/NA	Analysis	9040C		1			345184	06/03/16 14:36	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	341556	05/26/16 16:27	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.33 mL	1.0 g	254139	06/01/16 14:38	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	257878	06/24/16 06:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.33 mL	1.0 g	254160	06/01/16 17:32	MCJ	TAL SL
Total/NA	Analysis	904.0		1			257290	06/21/16 13:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258193	06/27/16 15:40	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Laboratory: TestAmerica Nashville

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-104236 Chain of Custody

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1325 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 0.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (intial) MDA

7. Were custody seals on containers: YES NO and Intact YES NO NA

Were these signed and dated correctly? YES NO NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13a. Were VOA vials received? YES NO NA

b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial)

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial)

I certify that I attached a label with the unique LIMS number to each container (intial)

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO #

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
104236

COOLER RECEIPT FORM

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1277 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1, front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AES

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

1/31/2018 (Rev. 1)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
Loc: 490
104236
#10
H

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # N28 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 0.3 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..(NA)

4. Were custody seals on outside of cooler? YES..(NO)..NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES…NO..(NA)

6. Were custody papers inside cooler? YES..(NO)..NA

I certify that I opened the cooler and answered questions 1-6 (intial) MSW

7. Were custody seals on containers: YES (NO) and Intact YES…NO…(NA)

Were these signed and dated correctly? YES…NO…(NA)

8. Packing mat'l used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)..NO…NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)…NO…NA

12. Did all container labels and tags agree with custody papers? (YES)..NO…NA

13a. Were VOA vials received? YES..(NO)..NA

b. Was there any observable headspace present in any VOA vial? YES…NO..(NA)

14. Was there a Trip Blank in this cooler? YES…NO..(NA) If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES)..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used (YES)…NO…NA

16. Was residual chlorine present? YES..(NO)..NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? (YES)..NO…NA

18. Did you sign the custody papers in the appropriate place? (YES)…NO…NA

19. Were correct containers used for the analysis requested? (YES)..NO…NA

20. Was sufficient amount of sample sent in each container? (YES)..NO…NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES…(NO) Was a NCM generated? YES..(NO)..#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

1/31/2018 (Rev. 1)

Big River Energy Corp

Big River Energy Corp

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 5/20/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6000 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☒ 2 weeks		
Project Name: WL CCR Groundwater-Round 2/1st Semi-Annual	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-53214-17238.1
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Loc: 490
104194

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
1	MW-1	5/19/16	1315	G	Water	8	N	N	x	x	x	x	x	x	
2	MW-2	5/18/16	1455	G	Water	8	N	N	x	x	x	x	x	x	
3	MW-3	5/18/16	1600	G	Water	8	N	N	x	x	x	x	x	x	
4	MW-4	5/18/16	1405	G	Water	8	N	N	x	x	x	x	x	x	
5	MW-5	5/20/16	1045	G	Water	8	N	N	x	x	x	x	x	x	
6	MW-6	5/19/16	1420	G	Water	8	N	N	x	x	x	x	x	x	
7	MW-7	5/19/16	1515	G	Water	8	N	N	x	x	x	x	x	x	
8	MW-8	5/19/16	1115	G	Water	8	N	N	x	x	x	x	x	x	
9	MW-10	5/18/16	1235	G	Water	8	N	N	x	x	x	x	x	x	
10	DUPE	5/19/16	1130	G	Water	8	N	N	x	x	x	x	x	x	
11	FIELD BLANK	5/19/16	1630	G	Water	8	N	N	x	x	x	x	x	x	
	Greg Dick														

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

4	4	3	7	3	7	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run in accordance with Federal CCR and Kentucky Chapter 45 Regulations

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 1600	Received by:	Company: TAN	Date/Time: 5/21/16 @ 0950
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp° 0.7/2.8/2.4/2.4/0.3

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-104236 Chain of Custody

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1325 (last 4 digits, FedEx) Courier: _FedEx_

   IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 0.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 0)Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) MSM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
104236

COOLER RECEIPT FORM

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1277 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...(NA)

4. Were custody seals on outside of cooler? (YES)...NO...NA

If yes, how many and where: 1, front

5. Were the seals intact, signed, and dated correctly? (YES)...NO...NA

6. Were custody papers inside cooler? YES...(NO)...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AES

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? YES...(NO)...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...(NA)

14. Was there a Trip Blank in this cooler? YES...NO...(NA) If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES)...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES...(NO)...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...(NO) Was a NCM generated? YES...(NO)...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

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End of Form

Revised 12/15/15

1/31/2018 (Rev. 1)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
Loc: 490
104236
#10
H

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1428 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 0.3 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..(NA)

4. Were custody seals on outside of cooler? YES..(NO)..NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES...NO..(NA)

6. Were custody papers inside cooler? YES..(NO)..NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)..NO...NA

13a. Were VOA vials received? YES..(NO)..NA

b. Was there any observable headspace present in any VOA vial? YES...NO..(NA)

14. Was there a Trip Blank in this cooler? YES...NO..(NA) If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES)..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES..(NO)..NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? (YES)..NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)..NO...NA

20. Was sufficient amount of sample sent in each container? (YES)..NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...(NO) Was a NCM generated? YES..(NO)..#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
104236

COOLER RECEIPT FORM

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1370 (last 4 digits, FedEx) Courier: _FedEx_

   IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

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End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
104236
#1
G

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1222 (last 4 digits, FedEx) Courier: _FedEx_

   IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: (1)Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) MM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 5/20/2016**	COC No: 490-53214-17238.1
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**	___1___ of ___1___ COCs
Address: PO Box 24	**Analysis Turnaround Time**			Sampler: Greg Dick
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(270) 844-6000 Phone	TAT if different from Below _____			Walk-in Client:
(xxx) xxx-xxxx FAX	☒ 2 weeks			Lab Sampling:
Project Name: WL CCR Groundwater-Round 2/1st Semi-Annual	☐ 1 week			
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days			Job / SDG No.:
P O #: Purchase Order-see DOCs	☐ 1 day			

Loc: 490
104194

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
1	MW-1	5/19/16	1315	G	Water	8	N	N	x	x	x	x	x	x	
2	MW-2	5/18/16	1455	G	Water	8	N	N	x	x	x	x	x	x	
3	MW-3	5/18/16	1600	G	Water	8	N	N	x	x	x	x	x	x	
4	MW-4	5/18/16	1405	G	Water	8	N	N	x	x	x	x	x	x	
5	MW-5	5/20/16	1045	G	Water	8	N	N	x	x	x	x	x	x	
6	MW-6	5/19/16	1420	G	Water	8	N	N	x	x	x	x	x	x	
7	MW-7	5/19/16	1515	G	Water	8	N	N	x	x	x	x	x	x	
8	MW-8	5/19/16	1115	G	Water	8	N	N	x	x	x	x	x	x	
9	MW-10	5/18/16	1235	G	Water	8	N	N	x	x	x	x	x	x	
10	DUPE	5/19/16	1130	G	Water	8	N	N	x	x	x	x	x	x	
11	FIELD BLANK	5/19/16	1630	G	Water	8	N	N	x	x	x	x	x	x	
	Greg Dick														

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____ 4 4 3 7 3 7

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run in accordance with Federal CCR and Kentucky Chapter 45 Regulations

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 1600	Received by:	Company: TAN	Date/Time: 5/21/16 @ 0945
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp° 0.7/2.8/2.4/2.4/0.3

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-104236 Chain of Custody

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1325 (last 4 digits, FedEx) Courier: _FedEx_

   IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 0.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

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End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
104236

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1277 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1, front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AES

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
Loc: 490
104236
#10
H

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # N28 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 0.3 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..NA

4. Were custody seals on outside of cooler? YES..NO..NA

If yes, how many and where:_____

5. Were the seals intact, signed, and dated correctly? YES...NO..NA

6. Were custody papers inside cooler? YES..NO..NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES..NO...NA

13a. Were VOA vials received? YES..NO..NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES..NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES..NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES..NO...NA

20. Was sufficient amount of sample sent in each container? YES..NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES..NO..#_____

BIS = Broken in shipment
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End of Form

Revised 12/15/15

1/31/2018 (Rev. 1)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
104236

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1370 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: (1)Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) mon

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) SW

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) SW

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) SW

I certify that I attached a label with the unique LIMS number to each container (intial) SW

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

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Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
104236
#1
G

Cooler Received/Opened On 5/21/2016 @ 0950

Time Samples Removed From Cooler 1135 Time Samples Placed In Storage 1215 (2 Hour Window)

1. Tracking # 1222 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) MDM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 5/20/2016**	COC No: 490-53214-17238.1
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**	___1___ of ___1___ COCs
Address: PO Box 24	**Analysis Turnaround Time**			Sampler: Greg Dick
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(270) 844-6000 Phone	TAT if different from Below _____			Walk-in Client:
(xxx) xxx-xxxx FAX	☒ 2 weeks			Lab Sampling:
Project Name: WL CCR Groundwater-Round 2/1st Semi-Annual	☐ 1 week			
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days			Job / SDG No.:
P O #: Purchase Order-see DOCs	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
1	MW-1	5/19/16	1315	G	Water	8	N	N	x	x	x	x	x	x	
2	MW-2	5/18/16	1455	G	Water	8	N	N	x	x	x	x	x	x	
3	MW-3	5/18/16	1600	G	Water	8	N	N	x	x	x	x	x	x	
4	MW-4	5/18/16	1405	G	Water	8	N	N	x	x	x	x	x	x	
5	MW-5	5/20/16	1045	G	Water	8	N	N	x	x	x	x	x	x	
6	MW-6	5/19/16	1420	G	Water	8	N	N	x	x	x	x	x	x	
7	MW-7	5/19/16	1515	G	Water	8	N	N	x	x	x	x	x	x	
8	MW-8	5/19/16	1115	G	Water	8	N	N	x	x	x	x	x	x	
9	MW-10	5/18/16	1235	G	Water	8	N	N	x	x	x	x	x	x	
10	DUPE	5/19/16	1130	G	Water	8	N	N	x	x	x	x	x	x	
11	FIELD BLANK	5/19/16	1630	G	Water	8	N	N	x	x	x	x	x	x	
	Greg Dick														
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____								4	4	3	7	3	7	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run in accordance with Federal CCR and Kentucky Chapter 45 Regulations

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 1600	Received by:	Company: TAN	Date/Time: 5/21/16 0940
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp° 0.7/2.8/2.4/2.4/0.3

Uncorrected temp
Thermometer ID
Initials
CF
PT-WI-SR-001 effective 7/26/13
TRK# 6493 8978 7332
0201
WED - 25 MAY 10:30A
PRIORITY OVERNIGHT
15238
PIT
PA-US
FedEx
Express
REF: S490-53706
(412) 963-7058
PITTSBURGH PA 15238
RIDC PARK
301 ALPHA DRIVE
TESTAMERICA LABORATORIES, INC.
SHIPPING/RECEIVING
TO
ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US
SHIP DATE: 24MAY16
ACTWGT: 30.0 LB MAN
CAD: 5340003/CAFE2912
BILL RECIPIENT
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica
Part # 159470-434 Rit 12/12
490-104236 Waybill

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-44625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-104236-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/23/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Wilson Landfill CCR	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special
Preservation Code:											
MW-1 (490-104236-1)	5/19/16	13:15 Central		Water			X	X	X	2	
MW-2 (490-104236-2)	5/18/16	14:55 Central		Water			X	X	X	2	
MW-3 (490-104236-3)	5/18/16	16:00 Central		Water			X	X	X	2	
MW-4 (490-104236-4)	5/18/16	14:05 Central		Water			X	X	X	2	
MW-5 (490-104236-5)	5/20/16	10:45 Central		Water			X	X	X	2	
MW-6 (490-104236-6)	5/19/16	14:20 Central		Water			X	X	X	2	
MW-7 (490-104236-7)	5/19/16	15:15 Central		Water			X	X	X	2	
MW-8 (490-104236-8)	5/19/16	11:15 Central		Water			X	X	X	2	
MW-10 (490-104236-9)	5/18/16	12:35 Central		Water			X	X	X	2	
DUPE (490-104236-10)	5/19/16	11:30 Central		Water			X	X	X	2	
FIELD BLANK (490-104236-11)	5/19/16	16:30 Central		Water			X	X	X	2	

490-104236 Chain of Custody

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 5/19/16 1630	Company TAN	Received by:	Date/Time: 5/20/16 0840	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-104236-1

Login Number: 104236

List Source: TestAmerica Nashville

List Number: 1

Creator: Abernathy, Eric

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-104236-1

Login Number: 104236
List Number: 3
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 05/25/16 04:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Wilson Landfill CCR

TestAmerica Job ID: 490-104236-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-104236-5	MW-5	90.9
490-104236-6	MW-6	90.9
490-104236-7	MW-7	86.3
490-104236-8	MW-8	86.6
490-104236-9	MW-10	95.2
490-104236-10	DUPE	86.3
490-104236-11	FIELD BLANK	96.9

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-104236-5	MW-5	90.9	89.3
490-104236-6	MW-6	90.9	89.0
490-104236-7	MW-7	86.3	90.5
490-104236-8	MW-8	86.6	86.0
490-104236-9	MW-10	95.2	87.1
490-104236-10	DUPE	86.3	86.4
490-104236-11	FIELD BLANK	96.9	88.2

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-110695-1
TestAmerica SDG: Wilson Station, Wilson Landfill (WL)
Client Project/Site: WL CCR Groundwater-Round 3
Revision: 1

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:
1/31/2018 4:29:34 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

LINKS

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Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-110695-5	MW-5	Water	08/25/16 13:35	08/27/16 09:15
490-110695-6	MW-6	Water	08/25/16 15:15	08/27/16 09:15
490-110695-7	MW-7	Water	08/25/16 16:45	08/27/16 09:15
490-110695-8	MW-8	Water	08/25/16 12:10	08/27/16 09:15
490-110695-9	MW-10	Water	08/25/16 18:00	08/27/16 09:15
490-110695-11	FIELD BLANK	Water	08/25/16 18:30	08/27/16 09:15

Job ID: 490-110695-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-110695-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 8/27/2016 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.6º C, 0.6º C, 1.5º C, 3.1º C and 3.5º C.

HPLC/IC
Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-5 (490-110695-5), MW-6 (490-110695-6), MW-7 (490-110695-7), MW-8 (490-110695-8), and MW-10 (490-110695-9). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-372025 contained chloride and/or sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
Method(s) PrecSep-21: Radium-226 Prep Batch: 160-268616: The following samples were prepared at a reduced aliquot due to sediment. MW-5 (490-110695-5)

Method(s) PrecSep_0: Radium-228 Prep Batch: 160-268621: The following samples were prepared at a reduced aliquot due to sediment. MW-5 (490-110695-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 08/25/16 13:35
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**73.5**		15.0	1.00	mg/L			09/22/16 13:28	5
Fluoride	ND		1.00	0.0100	mg/L			09/22/16 06:35	1
Sulfate	**1670**	**B**	500	3.00	mg/L			09/22/16 13:40	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0374**	**J**	0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 13:53	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000167**	**J**	0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 17:19	1
Arsenic	**0.00577**	**B**	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 17:19	1
Barium	**0.0119**	**J**	0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 17:19	1
Beryllium	**0.000127**	**J**	0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 17:19	1
Boron	**0.386**	**J**	1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 17:19	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 17:19	1
Calcium	**509**		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 17:19	1
Chromium	**0.00309**	**B**	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 17:19	1
Cobalt	**0.00659**		0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 17:19	1
Lead	**0.00144**	**J**	0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 17:19	1
Molybdenum	**0.00417**	**J**	0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 17:19	1
Selenium	**0.000706**	**J**	0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 17:19	1
Thallium	ND		0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 17:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 08:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.01**		0.100	0.100	SU			08/31/16 16:36	1
Temperature	**22.3**		0.100	0.100	Degrees C			08/31/16 16:36	1
Total Dissolved Solids	**2940**		20.0	14.0	mg/L			08/30/16 18:10	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.203**		0.0970	0.0987	1.00	0.119	pCi/L	09/08/16 17:31	09/30/16 05:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*09/08/16 17:31*	*09/30/16 05:48*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.511	U	0.392	0.395	1.00	0.616	pCi/L	09/08/16 18:24	09/19/16 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:49*	*1*

Client Sample ID: MW-5
Date Collected: 08/25/16 13:35
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-5
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	93.1		40 - 110	09/08/16 18:24	09/19/16 13:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.714		0.404	0.407	5.00	0.616	pCi/L		09/30/16 13:40	1

Client Sample ID: MW-6

Date Collected: 08/25/16 15:15
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.10**	**B**	3.00	0.200	mg/L			09/22/16 06:47	1
Fluoride	ND		1.00	0.0100	mg/L			09/22/16 06:47	1
Sulfate	**1660**	**B**	500	3.00	mg/L			09/22/16 14:17	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0494**	**J**	0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 13:58	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000105**	**J**	0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 17:24	1
Arsenic	**0.00476**	**J B**	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 17:24	1
Barium	**0.0113**	**J**	0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 17:24	1
Beryllium	ND		0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 17:24	1
Boron	**0.270**	**J**	1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 17:24	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 17:24	1
Calcium	**470**		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 17:24	1
Chromium	**0.00366**	**B**	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 17:24	1
Cobalt	**0.00740**		0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 17:24	1
Lead	**0.000288**	**J**	0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 17:24	1
Molybdenum	**0.00741**	**J**	0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 17:24	1
Selenium	ND		0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 17:24	1
Thallium	**0.0000440**	**J**	0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 17:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 08:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.52**		0.100	0.100	SU			08/30/16 17:06	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/30/16 17:06	1
Total Dissolved Solids	**2790**		20.0	14.0	mg/L			08/30/16 18:10	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.190**		0.0613	0.0636	1.00	0.0651	pCi/L	09/08/16 17:31	09/30/16 05:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*09/08/16 17:31*	*09/30/16 05:48*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.330	U	0.229	0.231	1.00	0.356	pCi/L	09/08/16 18:24	09/19/16 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:49*	*1*

Client Sample ID: MW-6
Date Collected: 08/25/16 15:15
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-6
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.8		40 - 110	09/08/16 18:24	09/19/16 13:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.519		0.237	0.240	5.00	0.356	pCi/L		09/30/16 13:40	1

Client Sample ID: MW-7

Date Collected: 08/25/16 16:45
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.67	B	3.00	0.200	mg/L			09/22/16 06:59	1
Fluoride	0.360	J	1.00	0.0100	mg/L			09/22/16 06:59	1
Sulfate	813	B	500	3.00	mg/L			09/22/16 14:29	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0305	J	0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 14:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000420	J	0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 17:28	1
Arsenic	0.00317	J B	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 17:28	1
Barium	0.0153	J	0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 17:28	1
Beryllium	ND		0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 17:28	1
Boron	0.277	J	1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 17:28	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 17:28	1
Calcium	287		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 17:28	1
Chromium	0.00304	B	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 17:28	1
Cobalt	0.00620		0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 17:28	1
Lead	ND		0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 17:28	1
Molybdenum	0.00236	J	0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 17:28	1
Selenium	ND		0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 17:28	1
Thallium	ND		0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 17:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 09:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.68		0.100	0.100	SU			08/30/16 17:09	1
Temperature	22.7		0.100	0.100	Degrees C			08/30/16 17:09	1
Total Dissolved Solids	1520		20.0	14.0	mg/L			08/30/16 18:10	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.117		0.0514	0.0525	1.00	0.0598	pCi/L	09/08/16 17:31	09/30/16 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*40 - 110*	*09/08/16 17:31*	*09/30/16 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.496		0.233	0.238	1.00	0.333	pCi/L	09/08/16 18:24	09/19/16 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:49*	*1*

Client Sample ID: MW-7
Date Collected: 08/25/16 16:45
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-7
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	09/08/16 18:24	09/19/16 13:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.613		0.239	0.243	5.00	0.333	pCi/L		09/30/16 13:40	1

Client Sample ID: MW-8

Date Collected: 08/25/16 12:10
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.38	B	3.00	0.200	mg/L			09/22/16 07:12	1
Fluoride	0.357	J	1.00	0.0100	mg/L			09/22/16 07:12	1
Sulfate	872	B	500	3.00	mg/L			09/22/16 14:42	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0116	J	0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 14:09	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000350	J	0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 17:33	1
Arsenic	0.00709	B	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 17:33	1
Barium	0.0217	J	0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 17:33	1
Beryllium	ND		0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 17:33	1
Boron	0.0369	J	1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 17:33	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 17:33	1
Calcium	237		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 17:33	1
Chromium	0.00114	J B	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 17:33	1
Cobalt	0.00118	J	0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 17:33	1
Lead	ND		0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 17:33	1
Molybdenum	0.0145		0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 17:33	1
Selenium	ND		0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 17:33	1
Thallium	ND		0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 17:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 09:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.57		0.100	0.100	SU			08/30/16 17:09	1
Temperature	22.7		0.100	0.100	Degrees C			08/30/16 17:09	1
Total Dissolved Solids	1550		20.0	14.0	mg/L			08/30/16 18:10	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.497		0.0931	0.103	1.00	0.0644	pCi/L	09/08/16 17:31	09/30/16 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*09/08/16 17:31*	*09/30/16 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.244	U	0.229	0.230	1.00	0.369	pCi/L	09/08/16 18:24	09/19/16 13:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:50*	*1*

Client Sample ID: MW-8
Date Collected: 08/25/16 12:10
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-8
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	92.0		40 - 110	09/08/16 18:24	09/19/16 13:50	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.741		0.247	0.252	5.00	0.369	pCi/L		09/30/16 13:40	1

Client Sample ID: MW-10

Date Collected: 08/25/16 18:00
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**53.0**		15.0	1.00	mg/L			09/22/16 14:54	5
Fluoride	ND		1.00	0.0100	mg/L			09/22/16 07:24	1
Sulfate	**2000**	**B**	1000	6.00	mg/L			09/22/16 15:06	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0141**	**J**	0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 14:14	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000280**	**J**	0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 17:37	1
Arsenic	**0.00309**	**J B**	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 17:37	1
Barium	**0.00953**	**J**	0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 17:37	1
Beryllium	ND		0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 17:37	1
Boron	**0.205**	**J**	1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 17:37	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 17:37	1
Calcium	**404**		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 17:37	1
Chromium	**0.00126**	**J B**	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 17:37	1
Cobalt	**0.126**		0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 17:37	1
Lead	**0.0000920**	**J**	0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 17:37	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 17:37	1
Selenium	ND		0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 17:37	1
Thallium	**0.0000360**	**J**	0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 17:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 09:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.20**		0.100	0.100	SU			08/30/16 17:09	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/30/16 17:09	1
Total Dissolved Solids	**3240**		20.0	14.0	mg/L			08/30/16 18:10	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0633	U	0.0453	0.0456	1.00	0.0652	pCi/L	09/08/16 17:31	09/30/16 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*09/08/16 17:31*	*09/30/16 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.236	U	0.219	0.220	1.00	0.352	pCi/L	09/08/16 18:24	09/19/16 13:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:50*	*1*

Client Sample ID: MW-10
Date Collected: 08/25/16 18:00
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-9
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*89.0*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:50*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.300	U	0.223	0.224	5.00	0.352	pCi/L		09/30/16 13:40	1

Client Sample ID: FIELD BLANK

Date Collected: 08/25/16 18:30
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			09/22/16 08:13	1
Fluoride	ND		1.00	0.0100	mg/L			09/22/16 08:13	1
Sulfate	**0.246**	**J B**	5.00	0.0300	mg/L			09/22/16 08:13	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 14:25	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 17:55	1
Arsenic	**0.00115**	**J B**	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 17:55	1
Barium	ND		0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 17:55	1
Beryllium	ND		0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 17:55	1
Boron	**0.0178**	**J**	1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 17:55	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 17:55	1
Calcium	ND		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 17:55	1
Chromium	**0.00145**	**J B**	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 17:55	1
Cobalt	**0.0000400**	**J**	0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 17:55	1
Lead	ND		0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 17:55	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 17:55	1
Selenium	ND		0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 17:55	1
Thallium	ND		0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 17:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 09:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.77**		0.100	0.100	SU			08/30/16 17:09	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/30/16 17:09	1
Total Dissolved Solids	**8.00**	**J**	10.0	7.00	mg/L			08/30/16 18:10	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00639	U	0.0336	0.0336	1.00	0.0647	pCi/L	09/08/16 17:31	09/30/16 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*09/08/16 17:31*	*09/30/16 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.137	U	0.204	0.204	1.00	0.343	pCi/L	09/08/16 18:24	09/19/16 13:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:51*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: FIELD BLANK
Date Collected: 08/25/16 18:30
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-11
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*92.3*		*40 - 110*	*09/08/16 18:24*	*09/19/16 13:51*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.143	U	0.207	0.207	5.00	0.343	pCi/L		09/30/16 13:40	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-372025/3
Matrix: Water
Analysis Batch: 372025

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3160	J	3.00	0.200	mg/L			09/22/16 04:44	1
Fluoride	ND		1.00	0.0100	mg/L			09/22/16 04:44	1
Sulfate	0.1915	J	5.00	0.0300	mg/L			09/22/16 04:44	1

Lab Sample ID: MB 490-372025/32
Matrix: Water
Analysis Batch: 372025

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			09/22/16 10:48	1
Fluoride	ND		1.00	0.0100	mg/L			09/22/16 10:48	1
Sulfate	0.2151	J	5.00	0.0300	mg/L			09/22/16 10:48	1

Lab Sample ID: LCS 490-372025/33
Matrix: Water
Analysis Batch: 372025

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.140		mg/L		91	80 - 120
Fluoride	1.00	0.9210	J	mg/L		92	80 - 120
Sulfate	10.0	9.832		mg/L		98	80 - 120

Lab Sample ID: LCS 490-372025/4
Matrix: Water
Analysis Batch: 372025

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.091		mg/L		91	80 - 120
Fluoride	1.00	0.9955	J	mg/L		100	80 - 120
Sulfate	10.0	9.875		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-372025/34
Matrix: Water
Analysis Batch: 372025

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.333		mg/L		93	80 - 120	2	20
Fluoride	1.00	0.9477	J	mg/L		95	80 - 120	3	20
Sulfate	10.0	9.933		mg/L		99	80 - 120	1	20

Lab Sample ID: LCSD 490-372025/5
Matrix: Water
Analysis Batch: 372025

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.129		mg/L		91	80 - 120	0	20
Fluoride	1.00	0.9527	J	mg/L		95	80 - 120	4	20
Sulfate	10.0	9.678		mg/L		97	80 - 120	2	20

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 490-110695-11 MS
Matrix: Water
Analysis Batch: 372025

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		2.00	1.688	J	mg/L		84	80 - 120
Fluoride	ND		0.200	0.1670	J	mg/L		84	80 - 120
Sulfate	0.273	J B F1	2.00	1.848	J F1	mg/L		79	80 - 120

Lab Sample ID: 490-110695-11 MSD
Matrix: Water
Analysis Batch: 372025

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		2.00	1.729	J	mg/L		86	80 - 120	2	20
Fluoride	ND		0.200	0.1628	J	mg/L		81	80 - 120	3	20
Sulfate	0.273	J B F1	2.00	1.891	J	mg/L		81	80 - 120	2	20

Lab Sample ID: 490-110695-D-1 MS
Matrix: Water
Analysis Batch: 372025

Client Sample ID: 490-110695-D-1 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	111	E B	2.00	92.00	E 4	mg/L		-933	80 - 120
Fluoride	2.34		0.200	2.093	4	mg/L		-123	80 - 120
Sulfate	2180	E B	2.00	1889	E 4	mg/L		-1454	80 - 120
								9	

Lab Sample ID: 490-110695-D-1 MSD
Matrix: Water
Analysis Batch: 372025

Client Sample ID: 490-110695-D-1 MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	111	E B	2.00	93.02	E 4	mg/L		-881	80 - 120	1	20
Fluoride	2.34		0.200	2.031	4	mg/L		-154	80 - 120	3	20
Sulfate	2180	E B	2.00	1874	E 4	mg/L		-1527	80 - 120	1	20
								7			

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-186487/1-A
Matrix: Water
Analysis Batch: 187985

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 186487

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		08/30/16 13:11	09/14/16 12:52	1

Lab Sample ID: LCS 180-186487/2-A
Matrix: Water
Analysis Batch: 187985

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 186487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.015		mg/L		102	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 180-186487/3-A
Matrix: Water
Analysis Batch: 187985

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 186487

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.005		mg/L		101	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-186488/1-A
Matrix: Water
Analysis Batch: 188868

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 186488

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		08/30/16 13:13	09/21/16 16:39	1
Arsenic	0.0005360	J	0.00500	0.000118	mg/L		08/30/16 13:13	09/21/16 16:39	1
Barium	ND		0.200	0.000270	mg/L		08/30/16 13:13	09/21/16 16:39	1
Beryllium	ND		0.00200	0.000102	mg/L		08/30/16 13:13	09/21/16 16:39	1
Boron	ND		1.00	0.00339	mg/L		08/30/16 13:13	09/21/16 16:39	1
Cadmium	ND		0.00100	0.000152	mg/L		08/30/16 13:13	09/21/16 16:39	1
Calcium	ND		1.00	0.0412	mg/L		08/30/16 13:13	09/21/16 16:39	1
Chromium	0.0008970	J	0.00300	0.000339	mg/L		08/30/16 13:13	09/21/16 16:39	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/30/16 13:13	09/21/16 16:39	1
Lead	ND		0.00500	0.0000675	mg/L		08/30/16 13:13	09/21/16 16:39	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/30/16 13:13	09/21/16 16:39	1
Selenium	ND		0.0100	0.000348	mg/L		08/30/16 13:13	09/21/16 16:39	1
Thallium	ND		0.00100	0.0000360	mg/L		08/30/16 13:13	09/21/16 16:39	1

Lab Sample ID: LCS 180-186488/2-A
Matrix: Water
Analysis Batch: 188868

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 186488

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5293		mg/L		106	80 - 120
Arsenic	0.0400	0.03861		mg/L		97	80 - 120
Barium	2.00	2.073		mg/L		104	80 - 120
Beryllium	0.0500	0.05229		mg/L		105	80 - 120
Boron	1.00	1.031		mg/L		103	80 - 120
Cadmium	0.0500	0.05287		mg/L		106	80 - 120
Calcium	50.0	50.03		mg/L		100	80 - 120
Chromium	0.200	0.2001		mg/L		100	80 - 120
Cobalt	0.500	0.4990		mg/L		100	80 - 120
Lead	0.0200	0.02076		mg/L		104	80 - 120
Molybdenum	1.00	1.101		mg/L		110	80 - 120
Selenium	0.0100	0.01057		mg/L		106	80 - 120
Thallium	0.0500	0.05031		mg/L		101	80 - 120

Lab Sample ID: LCSD 180-186488/3-A
Matrix: Water
Analysis Batch: 188868

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 186488

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5371		mg/L		107	80 - 120	1	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 180-186488/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 188868 — **Prep Batch: 186488**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			0.0400	0.04115		mg/L		103	80 - 120	6	20
Barium			2.00	2.108		mg/L		105	80 - 120	2	20
Beryllium			0.0500	0.05313		mg/L		106	80 - 120	2	20
Boron			1.00	1.073		mg/L		107	80 - 120	4	20
Cadmium			0.0500	0.05372		mg/L		107	80 - 120	2	20
Calcium			50.0	51.24		mg/L		102	80 - 120	2	20
Chromium			0.200	0.2023		mg/L		101	80 - 120	1	20
Cobalt			0.500	0.5061		mg/L		101	80 - 120	1	20
Lead			0.0200	0.02021		mg/L		101	80 - 120	3	20
Molybdenum			1.00	1.130		mg/L		113	80 - 120	3	20
Selenium			0.0100	0.01039		mg/L		104	80 - 120	2	20
Thallium			0.0500	0.05056		mg/L		101	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-366490/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 367553 — **Prep Batch: 366490**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/30/16 09:27	09/02/16 08:03	1

Lab Sample ID: LCS 490-366490/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 367553 — **Prep Batch: 366490**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9187		ug/L		92	80 - 120		

Lab Sample ID: 490-110695-1 MS — **Client Sample ID: MW-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 367553 — **Prep Batch: 366490**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	0.8854		ug/L		89	75 - 125		

Lab Sample ID: 490-110695-1 MSD — **Client Sample ID: MW-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 367553 — **Prep Batch: 366490**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8816		ug/L		88	75 - 125	0	20

Method: 9040C - pH

Lab Sample ID: LCS 490-366736/1
Matrix: Water
Analysis Batch: 366736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	6.990		SU		100	98 - 103		

Lab Sample ID: 490-110220-A-1 DU
Matrix: Water
Analysis Batch: 366736

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.78			7.780		SU				0	20
Temperature	22.7			22.70		Degrees C				0	20

Lab Sample ID: LCS 490-366746/1
Matrix: Water
Analysis Batch: 366746

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.030		SU		100	98 - 103		

Lab Sample ID: 490-110695-7 DU
Matrix: Water
Analysis Batch: 366746

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.68			6.680		SU				0	20
Temperature	22.7			22.70		Degrees C				0	20

Lab Sample ID: LCS 490-367041/1
Matrix: Water
Analysis Batch: 367041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.020		SU		100	98 - 103		

Lab Sample ID: 490-110543-A-1 DU
Matrix: Water
Analysis Batch: 367041

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	ND			ND		SU				NC	20
Temperature	22.3			22.30		Degrees C				0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-366696/1
Matrix: Water
Analysis Batch: 366696

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/30/16 18:10	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-366696/2
Matrix: Water
Analysis Batch: 366696

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	92.00		mg/L		92	90 - 110

Lab Sample ID: 490-110695-1 DU
Matrix: Water
Analysis Batch: 366696

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3810		3606		mg/L		5	20

Lab Sample ID: 490-110826-I-3 DU
Matrix: Water
Analysis Batch: 366696

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2100		2074		mg/L		1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-268616/1-A
Matrix: Water
Analysis Batch: 272536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268616

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.09138		0.0536	0.0542	1.00	0.0749	pCi/L	09/08/16 17:31	09/30/16 05:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*09/08/16 17:31*	*09/30/16 05:47*	*1*

Lab Sample ID: LCS 160-268616/2-A
Matrix: Water
Analysis Batch: 272536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268616

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.1	13.78		1.33	1.00	0.0682	pCi/L	124	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.6*		*40 - 110*

Lab Sample ID: 400-126543-A-4-B DU
Matrix: Water
Analysis Batch: 272536

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 268616

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.141		0.1148	U	0.0810	1.00	0.121	pCi/L	0.17	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 400-126543-A-4-B DU
Matrix: Water
Analysis Batch: 272536

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 268616

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	93.7		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-268621/1-A
Matrix: Water
Analysis Batch: 270529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268621

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3214	U	0.241	0.242	1.00	0.379	pCi/L	09/08/16 18:24	09/19/16 13:47	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110	09/08/16 18:24	09/19/16 13:47	1
Y Carrier	91.6		40 - 110	09/08/16 18:24	09/19/16 13:47	1

Lab Sample ID: LCS 160-268621/2-A
Matrix: Water
Analysis Batch: 270529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268621

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.5	17.70		1.85	1.00	0.404	pCi/L	122	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.6		40 - 110
Y Carrier	92.0		40 - 110

Lab Sample ID: 400-126543-A-4-D DU
Matrix: Water
Analysis Batch: 270529

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 268621

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.212	U		0.09456	U	0.293	1.00	0.507	pCi/L			0.19	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	93.7		40 - 110
Y Carrier	91.6		40 - 110

HPLC/IC

Analysis Batch: 372025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	9056A	
490-110695-5	MW-5	Total/NA	Water	9056A	
490-110695-5	MW-5	Total/NA	Water	9056A	
490-110695-6	MW-6	Total/NA	Water	9056A	
490-110695-6	MW-6	Total/NA	Water	9056A	
490-110695-7	MW-7	Total/NA	Water	9056A	
490-110695-7	MW-7	Total/NA	Water	9056A	
490-110695-8	MW-8	Total/NA	Water	9056A	
490-110695-8	MW-8	Total/NA	Water	9056A	
490-110695-9	MW-10	Total/NA	Water	9056A	
490-110695-9	MW-10	Total/NA	Water	9056A	
490-110695-9	MW-10	Total/NA	Water	9056A	
490-110695-11	FIELD BLANK	Total/NA	Water	9056A	

Metals

Prep Batch: 186487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total Recoverable	Water	3005A	
490-110695-6	MW-6	Total Recoverable	Water	3005A	
490-110695-7	MW-7	Total Recoverable	Water	3005A	
490-110695-8	MW-8	Total Recoverable	Water	3005A	
490-110695-9	MW-10	Total Recoverable	Water	3005A	
490-110695-11	FIELD BLANK	Total Recoverable	Water	3005A	

Prep Batch: 186488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total Recoverable	Water	3005A	
490-110695-6	MW-6	Total Recoverable	Water	3005A	
490-110695-7	MW-7	Total Recoverable	Water	3005A	
490-110695-8	MW-8	Total Recoverable	Water	3005A	
490-110695-9	MW-10	Total Recoverable	Water	3005A	
490-110695-11	FIELD BLANK	Total Recoverable	Water	3005A	

Analysis Batch: 187985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total Recoverable	Water	6010C	186487
490-110695-6	MW-6	Total Recoverable	Water	6010C	186487
490-110695-7	MW-7	Total Recoverable	Water	6010C	186487
490-110695-8	MW-8	Total Recoverable	Water	6010C	186487
490-110695-9	MW-10	Total Recoverable	Water	6010C	186487
490-110695-11	FIELD BLANK	Total Recoverable	Water	6010C	186487

Analysis Batch: 188868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total Recoverable	Water	6020A	186488
490-110695-6	MW-6	Total Recoverable	Water	6020A	186488
490-110695-7	MW-7	Total Recoverable	Water	6020A	186488
490-110695-8	MW-8	Total Recoverable	Water	6020A	186488
490-110695-9	MW-10	Total Recoverable	Water	6020A	186488

Metals (Continued)

Analysis Batch: 188868 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-11	FIELD BLANK	Total Recoverable	Water	6020A	186488

Prep Batch: 366490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	7470A	
490-110695-6	MW-6	Total/NA	Water	7470A	
490-110695-7	MW-7	Total/NA	Water	7470A	
490-110695-8	MW-8	Total/NA	Water	7470A	
490-110695-9	MW-10	Total/NA	Water	7470A	
490-110695-11	FIELD BLANK	Total/NA	Water	7470A	

Analysis Batch: 367553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	7470A	366490
490-110695-6	MW-6	Total/NA	Water	7470A	366490
490-110695-7	MW-7	Total/NA	Water	7470A	366490
490-110695-8	MW-8	Total/NA	Water	7470A	366490
490-110695-9	MW-10	Total/NA	Water	7470A	366490
490-110695-11	FIELD BLANK	Total/NA	Water	7470A	366490

General Chemistry

Analysis Batch: 366696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	SM 2540C	
490-110695-6	MW-6	Total/NA	Water	SM 2540C	
490-110695-7	MW-7	Total/NA	Water	SM 2540C	
490-110695-8	MW-8	Total/NA	Water	SM 2540C	
490-110695-9	MW-10	Total/NA	Water	SM 2540C	
490-110695-11	FIELD BLANK	Total/NA	Water	SM 2540C	

Analysis Batch: 366736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-6	MW-6	Total/NA	Water	9040C	

Analysis Batch: 366746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-7	MW-7	Total/NA	Water	9040C	
490-110695-8	MW-8	Total/NA	Water	9040C	
490-110695-9	MW-10	Total/NA	Water	9040C	
490-110695-11	FIELD BLANK	Total/NA	Water	9040C	

Analysis Batch: 367041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	9040C	

Rad

Prep Batch: 268616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	PrecSep-21	
490-110695-6	MW-6	Total/NA	Water	PrecSep-21	
490-110695-7	MW-7	Total/NA	Water	PrecSep-21	
490-110695-8	MW-8	Total/NA	Water	PrecSep-21	
490-110695-9	MW-10	Total/NA	Water	PrecSep-21	
490-110695-11	FIELD BLANK	Total/NA	Water	PrecSep-21	

Prep Batch: 268621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110695-5	MW-5	Total/NA	Water	PrecSep_0	
490-110695-6	MW-6	Total/NA	Water	PrecSep_0	
490-110695-7	MW-7	Total/NA	Water	PrecSep_0	
490-110695-8	MW-8	Total/NA	Water	PrecSep_0	
490-110695-9	MW-10	Total/NA	Water	PrecSep_0	
490-110695-11	FIELD BLANK	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-5

Date Collected: 08/25/16 13:35
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			372025	09/22/16 06:35	JHS	TAL NSH
Total/NA	Analysis	9056A		5			372025	09/22/16 13:28	JHS	TAL NSH
Total/NA	Analysis	9056A		100			372025	09/22/16 13:40	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186487	08/30/16 13:11	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			187985	09/14/16 13:53	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186488	08/30/16 13:13	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			188868	09/21/16 17:19	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366490	08/30/16 09:27	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/02/16 08:25	BLG	TAL NSH
Total/NA	Analysis	9040C		1			367041	08/31/16 16:36	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	366696	08/30/16 18:10	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			499.42 mL	1.0 g	268616	09/08/16 17:31	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	272536	09/30/16 05:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.42 mL	1.0 g	268621	09/08/16 18:24	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270529	09/19/16 13:49	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272577	09/30/16 13:40	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 08/25/16 15:15
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			372025	09/22/16 06:47	JHS	TAL NSH
Total/NA	Analysis	9056A		100			372025	09/22/16 14:17	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186487	08/30/16 13:11	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			187985	09/14/16 13:58	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186488	08/30/16 13:13	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			188868	09/21/16 17:24	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366490	08/30/16 09:27	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/02/16 08:27	BLG	TAL NSH
Total/NA	Analysis	9040C		1			366736	08/30/16 17:06	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	366696	08/30/16 18:10	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.46 mL	1.0 g	268616	09/08/16 17:31	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	272536	09/30/16 05:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.46 mL	1.0 g	268621	09/08/16 18:24	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270529	09/19/16 13:49	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272577	09/30/16 13:40	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 08/25/16 16:45
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			372025	09/22/16 06:59	JHS	TAL NSH
Total/NA	Analysis	9056A		100			372025	09/22/16 14:29	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186487	08/30/16 13:11	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			187985	09/14/16 14:03	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186488	08/30/16 13:13	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			188868	09/21/16 17:28	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366490	08/30/16 09:27	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/02/16 09:38	BLG	TAL NSH
Total/NA	Analysis	9040C		1			366746	08/30/16 17:09	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	366696	08/30/16 18:10	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.24 mL	1.0 g	268616	09/08/16 17:31	MCJ	TAL SL
Total/NA	Analysis	903.0		1			272545	09/30/16 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.24 mL	1.0 g	268621	09/08/16 18:24	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270529	09/19/16 13:49	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272577	09/30/16 13:40	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 08/25/16 12:10
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			372025	09/22/16 07:12	JHS	TAL NSH
Total/NA	Analysis	9056A		100			372025	09/22/16 14:42	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186487	08/30/16 13:11	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			187985	09/14/16 14:09	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186488	08/30/16 13:13	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			188868	09/21/16 17:33	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366490	08/30/16 09:27	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/02/16 09:40	BLG	TAL NSH
Total/NA	Analysis	9040C		1			366746	08/30/16 17:09	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	366696	08/30/16 18:10	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.24 mL	1.0 g	268616	09/08/16 17:31	MCJ	TAL SL
Total/NA	Analysis	903.0		1			272545	09/30/16 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.24 mL	1.0 g	268621	09/08/16 18:24	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270530	09/19/16 13:50	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272577	09/30/16 13:40	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 08/25/16 18:00
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			372025	09/22/16 07:24	JHS	TAL NSH
Total/NA	Analysis	9056A		5			372025	09/22/16 14:54	JHS	TAL NSH
Total/NA	Analysis	9056A		200			372025	09/22/16 15:06	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186487	08/30/16 13:11	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			187985	09/14/16 14:14	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186488	08/30/16 13:13	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			188868	09/21/16 17:37	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366490	08/30/16 09:27	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/02/16 09:43	BLG	TAL NSH
Total/NA	Analysis	9040C		1			366746	08/30/16 17:09	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	366696	08/30/16 18:10	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.98 mL	1.0 g	268616	09/08/16 17:31	MCJ	TAL SL
Total/NA	Analysis	903.0		1			272545	09/30/16 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.98 mL	1.0 g	268621	09/08/16 18:24	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270530	09/19/16 13:50	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272577	09/30/16 13:40	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 08/25/16 18:30
Date Received: 08/27/16 09:15

Lab Sample ID: 490-110695-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			372025	09/22/16 08:13	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186487	08/30/16 13:11	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			187985	09/14/16 14:25	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186488	08/30/16 13:13	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			188868	09/21/16 17:55	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366490	08/30/16 09:27	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/02/16 09:49	BLG	TAL NSH
Total/NA	Analysis	9040C		1			366746	08/30/16 17:09	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	366696	08/30/16 18:10	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.52 mL	1.0 g	268616	09/08/16 17:31	MCJ	TAL SL
Total/NA	Analysis	903.0		1			272545	09/30/16 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.52 mL	1.0 g	268621	09/08/16 18:24	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270530	09/19/16 13:51	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			272577	09/30/16 13:40	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
9040C		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-110695 Chain of Custody

Cooler Received/Opened On 8/27/2016 @ 0915

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 3446 (last 4 digits, FedEx) Courier: _FedEx Sat. Del._

   IR Gun ID 17960357 pH Strip Lot HC58117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 3.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) P/Y

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
110695

COOLER RECEIPT FORM

Cooler Received/Opened On 8/27/2016 @ 0915

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 4707 (last 4 digits, FedEx) Courier: FedEx Sat. Del.

IR Gun ID 17960353 pH Strip Lot HC58117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 0.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1(front) + 1(back)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) EA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) SLV

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) SLV

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) SLV

I certify that I attached a label with the unique LIMS number to each container (intial) SLV

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
110695

COOLER RECEIPT FORM

Cooler Received/Opened On 8/27/2016 @ 0915

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 3560 (last 4 digits, FedEx) Courier: FedEx Sat. Del.

   IR Gun ID 17960358 pH Strip Lot HC58117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 1.5 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..(NA)

4. Were custody seals on outside of cooler? (YES)..NO...NA

   If yes, how many and where: (2) Front / Back

5. Were the seals intact, signed, and dated correctly? (YES)..NO...NA

6. Were custody papers inside cooler? YES..(NO)..NA

I certify that I opened the cooler and answered questions 1-6 (intial) MBM

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

   Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? Bubblewrap (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)..NO...NA

12. Did all container labels and tags agree with custody papers? (YES)..NO...NA

13a. Were VOA vials received? YES..(NO)..NA

   b. Was there any observable headspace present in any VOA vial? YES...NO..(NA)

14. Was there a Trip Blank in this cooler? YES...NO..(NA) If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..(NA)

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO..(NA)

16. Was residual chlorine present? YES...NO...(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? (YES)..NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)..NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)..NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...(NO) Was a NCM generated? YES...(NO)..#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
110695

COOLER RECEIPT FORM

Cooler Received/Opened On 8/27/2016 @ 0915

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 9701 (last 4 digits, FedEx) Courier: _FedEx Sat. Del._

IR Gun ID Raynger pH Strip Lot HC58117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 0.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..(NA)

4. Were custody seals on outside of cooler? (YES)...NO...NA

If yes, how many and where: 1, front

5. Were the seals intact, signed, and dated correctly? (YES)...NO...NA

6. Were custody papers inside cooler? (YES)...NO...NA DCS 8/27/16

I certify that I opened the cooler and answered questions 1-6 (intial) DCS

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO..(NA)

8. Packing mat'l used? Bubblewrap (Plastic bag) Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)..NO...NA

12. Did all container labels and tags agree with custody papers? (YES)..NO...NA

13a. Were VOA vials received? YES..(NO)..NA

b. Was there any observable headspace present in any VOA vial? YES...NO..(NA)

14. Was there a Trip Blank in this cooler? YES...NO..(NA) If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) SLV

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..(NA)

b. Did the bottle labels indicate that the correct preservatives were used YES...NO..(NA)

16. Was residual chlorine present? YES...NO...(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) SLV

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) SLV

I certify that I attached a label with the unique LIMS number to each container (intial) SLV

21. Were there Non-Conformance issues at login? YES..(NO) Was a NCM generated? YES...(NO)...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-110695

Cooler Received/Opened On 8/27/2016 @ 0915

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 3527 (last 4 digits, FedEx) Courier: _FedEx Sat. Del._

   IR Gun ID 17960353 pH Strip Lot HC58117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 3.5 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1(front) + 1(back)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) KD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 8/26/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6000 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: WL CCR Groundwater-Round 3	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-52146-16875.1
__1__ of __1__ COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-1	8/25/16	1100	G	Water	6	N	N	x	x	x	x	
MW-2	8/26/16	1245	G	Water	6	N	N	x	x	x	x	
MW-3	8/26/16	1140	G	Water	6	N	N	x	x	x	x	
MW-4	8/26/16	1035	G	Water	6	N	N	x	x	x	x	
MW-5	8/25/16	1335	G	Water	6	N	N	x	x	x	x	
MW-6	8/25/16	1515	G	Water	6	N	N	x	x	x	x	
MW-7	8/25/16	1645	G	Water	6	N	N	x	x	x	x	
MW-8	8/25/16	1210	G	Water	6	N	N	x	x	x	x	
MW-10	8/25/16	1800	G	Water	6	N	N	x	x	x	x	
DUPE	8/25/16	1130	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	8/25/16	1830	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

490-110695

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

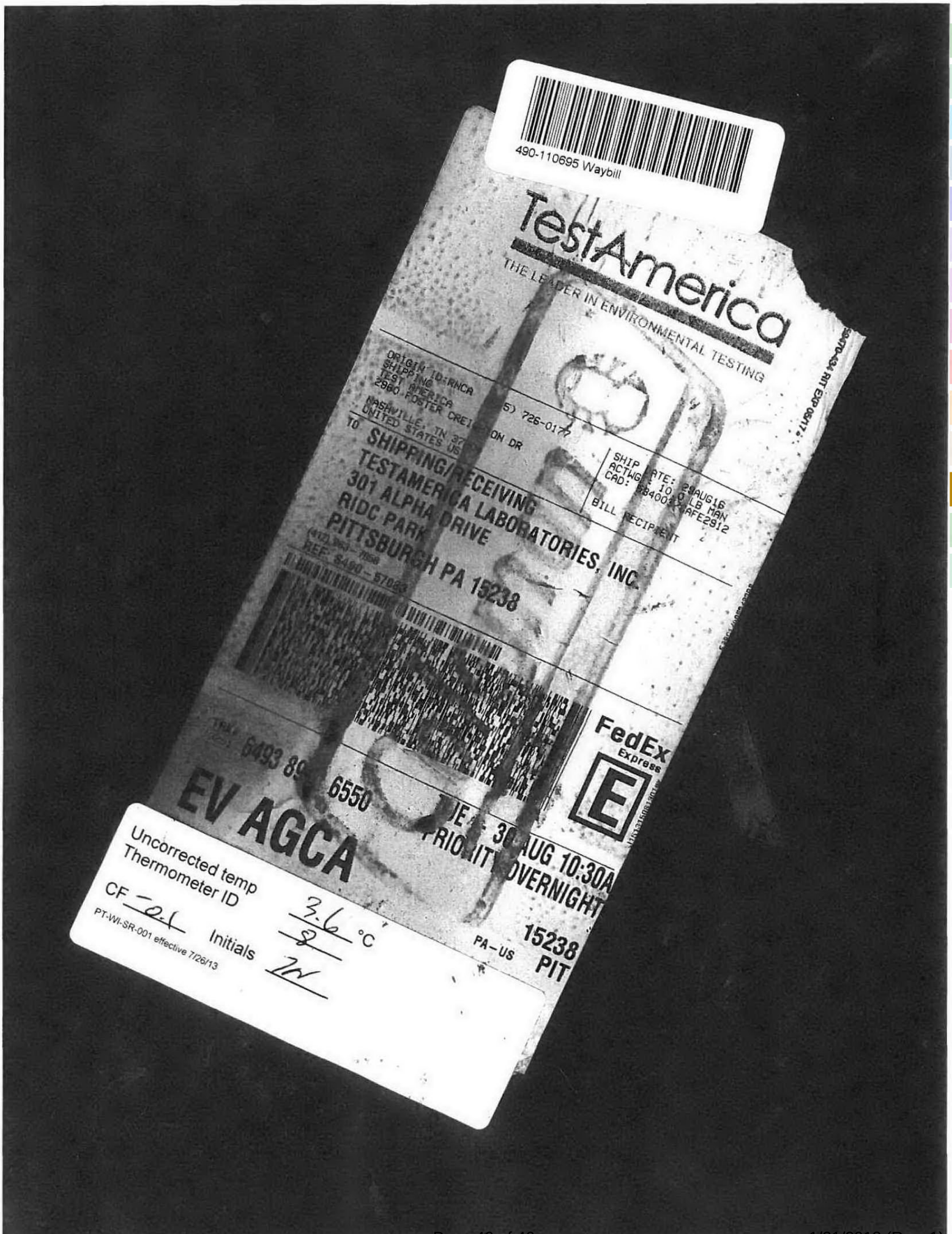
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations). See attached constituent list for analysis.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by:	Company: BREC	Date/Time: 1730 8/26/2016	Received by:	Company:	Date/Time: 8/27/16 0915
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:


490-110695 Waybill
TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
FedEx
Express
EV AGCA
Uncorrected temp 3.6 °C
Thermometer ID
CF -0.1
Initials
PT-WI-SR-001 effective 7/26/13

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-110695 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	): 7902.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested	Job #: 490-110695-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 9/27/2016		Preservation Codes:
City: Earth City	TAT Requested (days):		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: WL CCR Groundwater-Round 3	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (490-110695-1)	8/25/16	11:00 Central		Water			X	X	X	1	
MW-2 (490-110695-2)	8/25/16	12:45 Central		Water			X	X	X	1	
MW-3 (490-110695-3)	8/25/16	11:40 Central		Water			X	X	X	1	
MW-4 (490-110695-4)	8/25/16	10:35 Central		Water			X	X	X	1	
MW-5 (490-110695-5)	8/25/16	13:35 Central		Water			X	X	X	1	
MW-6 (490-110695-6)	8/25/16	15:15 Central		Water			X	X	X	1	
MW-7 (490-110695-7)	8/25/16	16:45 Central		Water			X	X	X	1	
MW-8 (490-110695-8)	8/25/16	12:10 Central		Water			X	X	X	1	
MW-10 (490-110695-9)	8/25/16	18:00 Central		Water			X	X	X	1	
DUPE (490-110695-10)	8/25/16	11:30 Central		Water			X	X	X	1	
FIELD BLANK (490-110695-11)	8/25/16	18:30 Central		Water			X	X	X	1	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	8.29.16 17.56	TAN		8/30/16 0920	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-110695 Chain of Custody

stAmerica
LEADER IN ENVIRONMENTAL TESTING

7901.1

Page 1 of 1

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com
Company: TestAmerica Laboratories, Inc.		
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 9/22/2016	
City: Pittsburgh	TAT Requested (days):	
State, Zip: PA, 15238		
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:	
Email:	WO #:	
Project Name: WL CCR Groundwater-Round 3	Project #: 49010431	
Site: Big Rivers CCR	SSOW#:	

Job #: 490-110695-1

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-110695-1)	8/25/16	11:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-110695-2)	8/25/16	12:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-3 (490-110695-3)	8/25/16	11:40 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-110695-4)	8/25/16	10:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-110695-5)	8/25/16	13:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-110695-6)	8/25/16	15:15 Central		Water			X	X	1	Metals - run once, upload together.
MW-7 (490-110695-7)	8/25/16	16:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-110695-8)	8/25/16	12:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-10 (490-110695-9)	8/25/16	18:00 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-110695-10)	8/25/16	11:30 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-110695-11)	8/25/16	18:30 Central		Water			X	X	1	Metals - run once, upload together.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 8-29-16 17:42	Company: TAN	Received by: DWatson	Date/Time: 8-30-16 9:00	Company: TAL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-110695-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 110695
List Number: 1
Creator: Vest, Laura E

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1,0.6,1.5,0.6,3.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-110695-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 110695
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 08/30/16 11:21 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-110695-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 110695
List Number: 3
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 08/30/16 01:34 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 3

TestAmerica Job ID: 490-110695-1
SDG: Wilson Station, Wilson Landfill (WL)

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-110695-5	MW-5	103
490-110695-6	MW-6	94.9
490-110695-7	MW-7	95.4
490-110695-8	MW-8	96.6
490-110695-9	MW-10	90.6
490-110695-11	FIELD BLANK	94.6

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-110695-5	MW-5	103	93.1
490-110695-6	MW-6	94.9	90.8
490-110695-7	MW-7	95.4	87.1
490-110695-8	MW-8	96.6	92.0
490-110695-9	MW-10	90.6	89.0
490-110695-11	FIELD BLANK	94.6	92.3

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-113345-1
Client Project/Site: WL CCR Groundwater Round 4
Sampling Event: Big Rivers CCR/SemiAnnual GW
Revision: 4

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 4:34:05 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-113345-3	MW-5	Water	10/04/16 12:14	10/06/16 11:59
490-113345-4	MW-6	Water	10/04/16 14:50	10/06/16 11:59
490-113345-5	MW-8	Water	10/03/16 12:30	10/06/16 11:59
490-113613-3	MW-7	Water	10/06/16 12:58	10/08/16 10:39
490-113613-4	MW-10	Water	10/06/16 14:25	10/08/16 10:39
490-113613-6	FIELD BLANK	Water	10/05/16 17:45	10/08/16 09:00

Job ID: 490-113345-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-113345-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 10/6/2016 11:59 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.2º C, 1.8º C, 2.1º C and 3.5º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-378753 contained Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-378753 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-378753 contained Fluoride and Sulfate above the method detection limit (MDL) but less than reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: Due to sample matrix, an matrix spike / matrix spike duplicate (MS/MSD) was not analyzed for analytical batch 490-379144 . However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) was within the acceptance limits. (LCS 490-379144/7) and (LCSD 490-379144/8)

Method(s) 9056A: The method blank for analytical batch 490-379144 contained fluoride and sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-5 (490-113345-3), MW-6 (490-113345-4) and MW-8 (490-113345-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
Method(s) PrecSep-21: Radium-226 Prep Batch 160-274050: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-5 (490-113345-3), MW-6 (490-113345-4) and MW-8 (490-113345-5). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. Sample 240-70443-1 was prepared at a reduced aliquot due to limited volume.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-274085: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-5 (490-113345-3), MW-6 (490-113345-4) and MW-8 (490-113345-5). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. Sample 240-70443-1 was prepared at a reduced aliquot due to limited volume.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 490-113613-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-113613-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 10/8/2016 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 2.2º C, 3.3º C, 3.3º C, 3.5º C and 3.5º C.

HPLC/IC
Method(s) 9056A: The following sample was diluted due to the nature of the sample matrix: MW-7 (490-113613-3), MW-10 (490-113613-4), (490-113613-E-1 MS) and (490-113613-E-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-379598 contained chloride above the method detection limit (MDL). This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: The method blank for analytical batch 490-379892 contained chloride above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-379598 were outside control limits for chloride and sulfate. The matrix spike duplicate (MS) was outside the control limits for fluoride. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-379892 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
Method(s) PrecSep_0: Radium-228 Prep Batch 160-274475: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) for the following samples: MW-7 (490-113613-3), MW-10 (490-113613-4), and FIELD BLANK (490-113613-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-274473: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) for the following samples: MW-7 (490-113613-3), MW-10 (490-113613-4), and FIELD BLANK (490-113613-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) 903.0, 9315: Radium-226 Prep Batch 160-274473: The Laboratory Control Sample (LCS) spike recovery (138%) associated with the following samples is outside the upper QC limit of 137% indicating a potential positive bias for that analyte : MW-7 (490-113613-3), MW-10 (490-113613-4), FIELD BLANK (490-113613-6), (LCS 160-274473/2-A), (LCSD 160-274473/3-A) and (MB 160-274473/1-A). This analyte was not observed above the requested limit in the associated samples; therefore the sample data was not adversely affected by this excursion. The data have been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 490-113613-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
U	Result is less than the sample detection limit.
*	LCS or LCSD is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 10/04/16 12:14
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	79.5		60.0	4.00	mg/L			10/15/16 20:10	20
Fluoride	ND		1.00	0.0100	mg/L			10/15/16 17:43	1
Sulfate	1570	B	1000	6.00	mg/L			10/17/16 21:01	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0338	J	0.0500	0.00959	mg/L		10/11/16 07:14	10/13/16 17:35	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000170	J B	0.00200	0.0000213	mg/L		10/11/16 07:15	10/14/16 10:31	1
Arsenic	0.00434	J	0.00500	0.000118	mg/L		10/11/16 07:15	10/14/16 10:31	1
Barium	0.0118	J	0.200	0.000270	mg/L		10/11/16 07:15	10/14/16 10:31	1
Beryllium	0.000104	J	0.00200	0.000102	mg/L		10/11/16 07:15	10/14/16 10:31	1
Boron	0.367	J B	1.00	0.00339	mg/L		10/11/16 07:15	10/14/16 10:31	1
Cadmium	ND		0.00100	0.000152	mg/L		10/11/16 07:15	10/14/16 10:31	1
Calcium	464		1.00	0.0412	mg/L		10/11/16 07:15	10/14/16 10:31	1
Chromium	0.000346	J	0.00300	0.000339	mg/L		10/11/16 07:15	10/14/16 10:31	1
Cobalt	0.00664		0.00500	0.0000218	mg/L		10/11/16 07:15	10/14/16 10:31	1
Lead	0.00124	J B	0.00500	0.0000675	mg/L		10/11/16 07:15	10/14/16 10:31	1
Molybdenum	0.00368	J	0.0100	0.000873	mg/L		10/11/16 07:15	10/14/16 10:31	1
Selenium	0.000491	J	0.0100	0.000348	mg/L		10/11/16 07:15	10/14/16 10:31	1
Thallium	0.0000360	J	0.00100	0.0000360	mg/L		10/11/16 07:15	10/14/16 10:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/11/16 09:59	10/12/16 09:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2930		20.0	14.0	mg/L			10/11/16 17:05	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.461		0.174	0.179	1.00	0.206	pCi/L	10/11/16 13:20	11/03/16 07:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*10/11/16 13:20*	*11/03/16 07:01*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.731		0.264	0.272	1.00	0.351	pCi/L	10/11/16 17:11	11/02/16 14:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*10/11/16 17:11*	*11/02/16 14:30*	*1*
Y Carrier	*87.1*		*40 - 110*	*10/11/16 17:11*	*11/02/16 14:30*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: MW-5
Date Collected: 10/04/16 12:14
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-3
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.19		0.316	0.326	5.00	0.351	pCi/L		11/07/16 10:32	1

Client Sample ID: MW-6

Date Collected: 10/04/16 14:50
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.04**		3.00	0.200	mg/L			10/15/16 18:07	1
Fluoride	ND		1.00	0.0100	mg/L			10/15/16 18:07	1
Sulfate	**1790**	**B**	500	3.00	mg/L			10/17/16 22:02	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0459**	**J**	0.0500	0.00959	mg/L		10/11/16 07:14	10/13/16 17:40	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000193**	**J B**	0.00200	0.0000213	mg/L		10/11/16 07:15	10/14/16 10:33	1
Arsenic	**0.00534**		0.00500	0.000118	mg/L		10/11/16 07:15	10/14/16 10:33	1
Barium	**0.0106**	**J**	0.200	0.000270	mg/L		10/11/16 07:15	10/14/16 10:33	1
Beryllium	**0.000118**	**J**	0.00200	0.000102	mg/L		10/11/16 07:15	10/14/16 10:33	1
Boron	**0.228**	**J B**	1.00	0.00339	mg/L		10/11/16 07:15	10/14/16 10:33	1
Cadmium	ND		0.00100	0.000152	mg/L		10/11/16 07:15	10/14/16 10:33	1
Calcium	**445**		1.00	0.0412	mg/L		10/11/16 07:15	10/14/16 10:33	1
Chromium	ND		0.00300	0.000339	mg/L		10/11/16 07:15	10/14/16 10:33	1
Cobalt	**0.00688**		0.00500	0.0000218	mg/L		10/11/16 07:15	10/14/16 10:33	1
Lead	**0.000226**	**J B**	0.00500	0.0000675	mg/L		10/11/16 07:15	10/14/16 10:33	1
Molybdenum	**0.00738**	**J**	0.0100	0.000873	mg/L		10/11/16 07:15	10/14/16 10:33	1
Selenium	**0.000393**	**J**	0.0100	0.000348	mg/L		10/11/16 07:15	10/14/16 10:33	1
Thallium	**0.0000480**	**J**	0.00100	0.0000360	mg/L		10/11/16 07:15	10/14/16 10:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/11/16 09:59	10/12/16 09:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2800**		20.0	14.0	mg/L			10/11/16 17:05	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.167	U	0.120	0.121	1.00	0.174	pCi/L	10/11/16 13:20	11/03/16 07:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*10/11/16 13:20*	*11/03/16 07:02*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.680**		0.288	0.295	1.00	0.410	pCi/L	10/11/16 17:11	11/02/16 14:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*10/11/16 17:11*	*11/02/16 14:31*	*1*
Y Carrier	*87.1*		*40 - 110*	*10/11/16 17:11*	*11/02/16 14:31*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: MW-6
Date Collected: 10/04/16 14:50
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-4
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.847		0.312	0.318	5.00	0.410	pCi/L		11/07/16 10:32	1

Client Sample ID: MW-8

Date Collected: 10/03/16 12:30
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.69		3.00	0.200	mg/L			10/17/16 22:27	1
Fluoride	0.486	J B	1.00	0.0100	mg/L			10/17/16 22:27	1
Sulfate	854	B	250	1.50	mg/L			10/17/16 23:53	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0120	J	0.0500	0.00959	mg/L		10/11/16 07:14	10/13/16 17:45	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000153	J B	0.00200	0.0000213	mg/L		10/11/16 07:15	10/14/16 10:35	1
Arsenic	0.00581		0.00500	0.000118	mg/L		10/11/16 07:15	10/14/16 10:35	1
Barium	0.0201	J	0.200	0.000270	mg/L		10/11/16 07:15	10/14/16 10:35	1
Beryllium	ND		0.00200	0.000102	mg/L		10/11/16 07:15	10/14/16 10:35	1
Boron	0.0474	J B	1.00	0.00339	mg/L		10/11/16 07:15	10/14/16 10:35	1
Cadmium	ND		0.00100	0.000152	mg/L		10/11/16 07:15	10/14/16 10:35	1
Calcium	226		1.00	0.0412	mg/L		10/11/16 07:15	10/14/16 10:35	1
Chromium	ND		0.00300	0.000339	mg/L		10/11/16 07:15	10/14/16 10:35	1
Cobalt	0.00150	J	0.00500	0.0000218	mg/L		10/11/16 07:15	10/14/16 10:35	1
Lead	ND		0.00500	0.0000675	mg/L		10/11/16 07:15	10/14/16 10:35	1
Molybdenum	0.0151		0.0100	0.000873	mg/L		10/11/16 07:15	10/14/16 10:35	1
Selenium	ND		0.0100	0.000348	mg/L		10/11/16 07:15	10/14/16 10:35	1
Thallium	ND		0.00100	0.0000360	mg/L		10/11/16 07:15	10/14/16 10:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/11/16 09:59	10/12/16 09:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1520		10.0	7.00	mg/L			10/09/16 18:11	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.734		0.189	0.200	1.00	0.157	pCi/L	10/11/16 13:20	11/03/16 07:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*10/11/16 13:20*	*11/03/16 07:02*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.382	U	0.250	0.253	1.00	0.384	pCi/L	10/11/16 17:11	11/02/16 14:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*10/11/16 17:11*	*11/02/16 14:31*	*1*
Y Carrier	*85.6*		*40 - 110*	*10/11/16 17:11*	*11/02/16 14:31*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: MW-8
Date Collected: 10/03/16 12:30
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-5
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.12		0.313	0.322	5.00	0.384	pCi/L		11/07/16 10:32	1

Client Sample ID: MW-7

Date Collected: 10/06/16 12:58
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.65	B	3.00	0.200	mg/L			10/19/16 14:14	1
Fluoride	0.326	J	1.00	0.0100	mg/L			10/19/16 14:14	1
Sulfate	822		250	1.50	mg/L			10/20/16 08:30	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0263	J	0.0500	0.00959	mg/L		10/12/16 06:44	10/14/16 15:26	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000201	J B	0.00200	0.0000213	mg/L		10/12/16 06:46	10/22/16 16:49	1
Arsenic	0.00218	J	0.00500	0.000118	mg/L		10/12/16 06:46	10/22/16 16:49	1
Barium	0.0129	J	0.200	0.000270	mg/L		10/12/16 06:46	10/22/16 16:49	1
Beryllium	ND		0.00200	0.000102	mg/L		10/12/16 06:46	10/22/16 16:49	1
Boron	0.203	J B	1.00	0.00339	mg/L		10/12/16 06:46	10/22/16 16:49	1
Cadmium	ND		0.00100	0.000152	mg/L		10/12/16 06:46	10/22/16 16:49	1
Calcium	251		1.00	0.0412	mg/L		10/12/16 06:46	10/22/16 16:49	1
Chromium	ND		0.00300	0.000339	mg/L		10/12/16 06:46	10/22/16 16:49	1
Cobalt	0.00483	J	0.00500	0.0000218	mg/L		10/12/16 06:46	10/22/16 16:49	1
Lead	0.0000820	J	0.00500	0.0000675	mg/L		10/12/16 06:46	10/22/16 16:49	1
Molybdenum	0.00217	J	0.0100	0.000873	mg/L		10/12/16 06:46	10/22/16 16:49	1
Selenium	ND		0.0100	0.000348	mg/L		10/12/16 06:46	10/22/16 16:49	1
Thallium	ND		0.00100	0.0000360	mg/L		10/12/16 06:46	10/22/16 16:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/12/16 10:10	10/12/16 16:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1560		20.0	14.0	mg/L			10/11/16 20:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.200	*	0.0953	0.0970	1.00	0.123	pCi/L	10/13/16 14:09	11/08/16 09:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*40 - 110*	*10/13/16 14:09*	*11/08/16 09:16*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.461	U	0.324	0.327	1.00	0.507	pCi/L	10/13/16 15:00	11/04/16 18:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*40 - 110*	*10/13/16 15:00*	*11/04/16 18:32*	*1*
Y Carrier	*87.5*		*40 - 110*	*10/13/16 15:00*	*11/04/16 18:32*	*1*

Client Sample ID: MW-7
Date Collected: 10/06/16 12:58
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-3
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.660		0.338	0.341	5.00	0.507	pCi/L		11/11/16 15:16	1

Client Sample ID: MW-10

Date Collected: 10/06/16 14:25
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.0**	**B**	15.0	1.00	mg/L			10/20/16 09:05	5
Fluoride	**0.217**	**J**	1.00	0.0100	mg/L			10/19/16 14:50	1
Sulfate	**2030**		1000	6.00	mg/L			10/20/16 09:41	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0149**	**J**	0.0500	0.00959	mg/L		10/12/16 06:44	10/14/16 15:31	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000164**	**J B**	0.00200	0.0000213	mg/L		10/12/16 06:46	10/22/16 16:51	1
Arsenic	**0.00139**	**J**	0.00500	0.000118	mg/L		10/12/16 06:46	10/22/16 16:51	1
Barium	**0.00957**	**J**	0.200	0.000270	mg/L		10/12/16 06:46	10/22/16 16:51	1
Beryllium	ND		0.00200	0.000102	mg/L		10/12/16 06:46	10/22/16 16:51	1
Boron	**0.166**	**J B**	1.00	0.00339	mg/L		10/12/16 06:46	10/22/16 16:51	1
Cadmium	ND		0.00100	0.000152	mg/L		10/12/16 06:46	10/22/16 16:51	1
Calcium	**369**		1.00	0.0412	mg/L		10/12/16 06:46	10/22/16 16:51	1
Chromium	ND		0.00300	0.000339	mg/L		10/12/16 06:46	10/22/16 16:51	1
Cobalt	**0.108**		0.00500	0.0000218	mg/L		10/12/16 06:46	10/22/16 16:51	1
Lead	**0.000143**	**J**	0.00500	0.0000675	mg/L		10/12/16 06:46	10/22/16 16:51	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/12/16 06:46	10/22/16 16:51	1
Selenium	ND		0.0100	0.000348	mg/L		10/12/16 06:46	10/22/16 16:51	1
Thallium	ND		0.00100	0.0000360	mg/L		10/12/16 06:46	10/22/16 16:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/12/16 10:10	10/12/16 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**3230**		20.0	14.0	mg/L			10/11/16 20:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.114	U *	0.0931	0.0937	1.00	0.144	pCi/L	10/13/16 14:09	11/08/16 09:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*40 - 110*	*10/13/16 14:09*	*11/08/16 09:16*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0964	U	0.248	0.248	1.00	0.428	pCi/L	10/13/16 15:00	11/04/16 18:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*40 - 110*	*10/13/16 15:00*	*11/04/16 18:32*	*1*
Y Carrier	*87.1*		*40 - 110*	*10/13/16 15:00*	*11/04/16 18:32*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: MW-10
Date Collected: 10/06/16 14:25
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-4
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.211	U	0.265	0.265	5.00	0.428	pCi/L		11/11/16 15:16	1

Client Sample ID: FIELD BLANK

Date Collected: 10/05/16 17:45
Date Received: 10/08/16 09:00

Lab Sample ID: 490-113613-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.219**	**J B**	3.00	0.200	mg/L			10/19/16 16:55	1
Fluoride	ND		1.00	0.0100	mg/L			10/19/16 16:55	1
Sulfate	**0.331**	**J**	5.00	0.0300	mg/L			10/19/16 16:55	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/12/16 06:44	10/14/16 15:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000125**	**J B**	0.00200	0.0000213	mg/L		10/12/16 06:46	10/22/16 16:55	1
Arsenic	**0.000290**	**J**	0.00500	0.000118	mg/L		10/12/16 06:46	10/22/16 16:55	1
Barium	ND		0.200	0.000270	mg/L		10/12/16 06:46	10/22/16 16:55	1
Beryllium	ND		0.00200	0.000102	mg/L		10/12/16 06:46	10/22/16 16:55	1
Boron	**0.0275**	**J B**	1.00	0.00339	mg/L		10/12/16 06:46	10/22/16 16:55	1
Cadmium	ND		0.00100	0.000152	mg/L		10/12/16 06:46	10/22/16 16:55	1
Calcium	**0.0962**	**J**	1.00	0.0412	mg/L		10/12/16 06:46	10/22/16 16:55	1
Chromium	ND		0.00300	0.000339	mg/L		10/12/16 06:46	10/22/16 16:55	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/12/16 06:46	10/22/16 16:55	1
Lead	**0.0000730**	**J**	0.00500	0.0000675	mg/L		10/12/16 06:46	10/22/16 16:55	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/12/16 06:46	10/22/16 16:55	1
Selenium	ND		0.0100	0.000348	mg/L		10/12/16 06:46	10/22/16 16:55	1
Thallium	ND		0.00100	0.0000360	mg/L		10/12/16 06:46	10/22/16 16:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/12/16 10:10	10/12/16 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/11/16 20:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0297	U *	0.0768	0.0769	1.00	0.137	pCi/L	10/13/16 14:09	11/08/16 09:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*10/13/16 14:09*	*11/08/16 09:38*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.188	U	0.261	0.262	1.00	0.437	pCi/L	10/13/16 15:00	11/04/16 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*10/13/16 15:00*	*11/04/16 18:33*	*1*
Y Carrier	*89.0*		*40 - 110*	*10/13/16 15:00*	*11/04/16 18:33*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: FIELD BLANK
Date Collected: 10/05/16 17:45
Date Received: 10/08/16 09:00

Lab Sample ID: 490-113613-6
Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.217	U	0.273	0.273	5.00	0.437	pCi/L		11/11/16 15:16	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-378753/3
Matrix: Water
Analysis Batch: 378753

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			10/15/16 15:52	1
Fluoride	0.04516	J	1.00	0.0100	mg/L			10/15/16 15:52	1
Sulfate	0.1836	J	5.00	0.0300	mg/L			10/15/16 15:52	1

Lab Sample ID: LCS 490-378753/4
Matrix: Water
Analysis Batch: 378753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.645		mg/L		96	80 - 120
Fluoride	1.00	1.081		mg/L		108	80 - 120
Sulfate	10.0	10.21		mg/L		102	80 - 120

Lab Sample ID: LCSD 490-378753/5
Matrix: Water
Analysis Batch: 378753

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.827		mg/L		98	80 - 120	2	20
Fluoride	1.00	1.087		mg/L		109	80 - 120	1	20
Sulfate	10.0	10.16		mg/L		102	80 - 120	0	20

Lab Sample ID: 490-113345-F-1 MS
Matrix: Water
Analysis Batch: 378753

Client Sample ID: 490-113345-F-1 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	111	E	2.00	92.06	E 4	mg/L		-966	80 - 120
Fluoride	2.66	B	0.200	2.495	4	mg/L		-84	80 - 120
Sulfate	2100	E B	2.00	1798	E 4	mg/L		-1497 2	80 - 120

Lab Sample ID: 490-113345-F-1 MSD
Matrix: Water
Analysis Batch: 378753

Client Sample ID: 490-113345-F-1 MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	111	E	2.00	90.64	E 4	mg/L		-1037	80 - 120	2	20
Fluoride	2.66	B	0.200	2.473	4	mg/L		-96	80 - 120	1	20
Sulfate	2100	E B	2.00	1780	E 4	mg/L		-1588 9	80 - 120	1	20

Lab Sample ID: MB 490-379144/32
Matrix: Water
Analysis Batch: 379144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			10/17/16 23:16	1
Fluoride	0.05212	J	1.00	0.0100	mg/L			10/17/16 23:16	1
Sulfate	0.1775	J	5.00	0.0300	mg/L			10/17/16 23:16	1

Lab Sample ID: MB 490-379144/6
Matrix: Water
Analysis Batch: 379144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			10/17/16 17:56	1
Fluoride	0.04532	J	1.00	0.0100	mg/L			10/17/16 17:56	1
Sulfate	0.1795	J	5.00	0.0300	mg/L			10/17/16 17:56	1

Lab Sample ID: LCS 490-379144/33
Matrix: Water
Analysis Batch: 379144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.853		mg/L		99	80 - 120
Fluoride	1.00	0.9793	J	mg/L		98	80 - 120
Sulfate	10.0	10.16		mg/L		102	80 - 120

Lab Sample ID: LCS 490-379144/7
Matrix: Water
Analysis Batch: 379144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.832		mg/L		98	80 - 120
Fluoride	1.00	1.098		mg/L		110	80 - 120
Sulfate	10.0	10.35		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-379144/34
Matrix: Water
Analysis Batch: 379144

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.913		mg/L		99	80 - 120	1	20
Fluoride	1.00	1.012		mg/L		101	80 - 120	3	20
Sulfate	10.0	10.21		mg/L		102	80 - 120	0	20

Lab Sample ID: LCSD 490-379144/8
Matrix: Water
Analysis Batch: 379144

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.823		mg/L		98	80 - 120	0	20
Fluoride	1.00	1.045		mg/L		104	80 - 120	5	20
Sulfate	10.0	10.18		mg/L		102	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-190727/1-A
Matrix: Water
Analysis Batch: 191132

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190727

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/11/16 07:14	10/13/16 17:09	1
Cadmium	ND		0.00500	0.000196	mg/L		10/11/16 07:14	10/13/16 17:09	1
Arsenic	ND		0.0100	0.00483	mg/L		10/11/16 07:14	10/13/16 17:09	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-190727/2-A
Matrix: Water
Analysis Batch: 191132

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.013		mg/L		101	80 - 120
Cadmium	0.0500	0.05176		mg/L		104	80 - 120
Arsenic	0.500	0.5124		mg/L		102	80 - 120

Lab Sample ID: LCSD 180-190727/3-A
Matrix: Water
Analysis Batch: 191132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 190727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.023		mg/L		102	80 - 120	1	20
Cadmium	0.0500	0.05333		mg/L		107	80 - 120	3	20
Arsenic	0.500	0.5231		mg/L		105	80 - 120	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-190728/1-A
Matrix: Water
Analysis Batch: 191326

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190728

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0005510	J	0.00200	0.0000213	mg/L		10/11/16 07:15	10/14/16 10:16	1
Arsenic	ND		0.00500	0.000118	mg/L		10/11/16 07:15	10/14/16 10:16	1
Barium	ND		0.200	0.000270	mg/L		10/11/16 07:15	10/14/16 10:16	1
Beryllium	ND		0.00200	0.000102	mg/L		10/11/16 07:15	10/14/16 10:16	1
Cadmium	ND		0.00100	0.000152	mg/L		10/11/16 07:15	10/14/16 10:16	1
Calcium	ND		1.00	0.0412	mg/L		10/11/16 07:15	10/14/16 10:16	1
Chromium	ND		0.00300	0.000339	mg/L		10/11/16 07:15	10/14/16 10:16	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/11/16 07:15	10/14/16 10:16	1
Lead	ND		0.00500	0.0000675	mg/L		10/11/16 07:15	10/14/16 10:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/11/16 07:15	10/14/16 10:16	1
Selenium	ND		0.0100	0.000348	mg/L		10/11/16 07:15	10/14/16 10:16	1
Thallium	ND		0.00100	0.0000360	mg/L		10/11/16 07:15	10/14/16 10:16	1

Lab Sample ID: MB 180-190728/1-A
Matrix: Water
Analysis Batch: 191326

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190728

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		10/11/16 07:15	10/14/16 12:07	1

Lab Sample ID: LCS 180-190728/2-A
Matrix: Water
Analysis Batch: 191326

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190728

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4885		mg/L		98	80 - 120
Arsenic	0.0400	0.03765		mg/L		94	80 - 120
Barium	2.00	1.949		mg/L		97	80 - 120
Beryllium	0.0500	0.04387		mg/L		88	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-190728/2-A
Matrix: Water
Analysis Batch: 191326

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190728

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.8877	J	mg/L		89	80 - 120
Cadmium	0.0500	0.05267		mg/L		105	80 - 120
Calcium	50.0	51.53		mg/L		103	80 - 120
Chromium	0.200	0.2017		mg/L		101	80 - 120
Cobalt	0.500	0.5056		mg/L		101	80 - 120
Lead	0.0200	0.02077		mg/L		104	80 - 120
Molybdenum	1.00	1.071		mg/L		107	80 - 120
Selenium	0.0100	0.009658	J	mg/L		97	80 - 120
Thallium	0.0500	0.05095		mg/L		102	80 - 120

Lab Sample ID: LCSD 180-190728/3-A
Matrix: Water
Analysis Batch: 191326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 190728

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5076		mg/L		102	80 - 120	4	20
Arsenic	0.0400	0.04178		mg/L		104	80 - 120	10	20
Barium	2.00	1.976		mg/L		99	80 - 120	1	20
Beryllium	0.0500	0.04783		mg/L		96	80 - 120	9	20
Boron	1.00	0.9266	J	mg/L		93	80 - 120	4	20
Cadmium	0.0500	0.05491		mg/L		110	80 - 120	4	20
Calcium	50.0	52.49		mg/L		105	80 - 120	2	20
Chromium	0.200	0.2040		mg/L		102	80 - 120	1	20
Cobalt	0.500	0.5175		mg/L		104	80 - 120	2	20
Lead	0.0200	0.02080		mg/L		104	80 - 120	0	20
Molybdenum	1.00	1.083		mg/L		108	80 - 120	1	20
Selenium	0.0100	0.01059		mg/L		106	80 - 120	9	20
Thallium	0.0500	0.05137		mg/L		103	80 - 120	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-377073/1-A
Matrix: Water
Analysis Batch: 377337

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377073

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/11/16 09:59	10/11/16 19:28	1

Lab Sample ID: LCS 490-377073/2-A
Matrix: Water
Analysis Batch: 377337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377073

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.8890		ug/L		89	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 490-377073/25-A
Matrix: Water
Analysis Batch: 377337

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 377073

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.9541		ug/L		95	80 - 120	7	20

Lab Sample ID: 490-113219-E-1-C MS
Matrix: Water
Analysis Batch: 377516

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 377073

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	0.8699		ug/L		87	75 - 125		

Lab Sample ID: 490-113219-E-1-D MSD
Matrix: Water
Analysis Batch: 377516

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 377073

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8450		ug/L		85	75 - 125	3	20

Lab Sample ID: MB 490-377753/1-A
Matrix: Water
Analysis Batch: 378629

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/13/16 09:34	10/14/16 11:14	1

Lab Sample ID: LCS 490-377753/2-A
Matrix: Water
Analysis Batch: 378629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9130		ug/L		91	80 - 120		

Lab Sample ID: 490-113345-1 MS
Matrix: Water
Analysis Batch: 378629

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 377753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	1.010		ug/L		101	75 - 125		

Lab Sample ID: 490-113345-1 MSD
Matrix: Water
Analysis Batch: 378629

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 377753

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9590		ug/L		96	75 - 125	5	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-376481/1
Matrix: Water
Analysis Batch: 376481

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/11/16 17:05	1

Lab Sample ID: LCS 490-376481/2
Matrix: Water
Analysis Batch: 376481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	103.0		mg/L		103	90 - 110

Lab Sample ID: 490-113357-A-1 DU
Matrix: Water
Analysis Batch: 376481

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2660		2722		mg/L		2	20

Lab Sample ID: 490-113362-A-3 DU
Matrix: Water
Analysis Batch: 376481

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2680		2752		mg/L		3	20

Lab Sample ID: MB 490-376492/1
Matrix: Water
Analysis Batch: 376492

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/09/16 18:11	1

Lab Sample ID: LCS 490-376492/2
Matrix: Water
Analysis Batch: 376492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	105.0		mg/L		105	90 - 110

Lab Sample ID: 490-113190-C-1 DU
Matrix: Water
Analysis Batch: 376492

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	321		331.0		mg/L		3	20

Lab Sample ID: 490-113345-5 DU
Matrix: Water
Analysis Batch: 376492

Client Sample ID: MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1520		1536		mg/L		0.9	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-274050/1-A
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 274050

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1026	U	0.142	0.143	1.00	0.239	pCi/L	10/11/16 13:20	11/03/16 06:53	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.6*		*40 - 110*	*10/11/16 13:20*	*11/03/16 06:53*	*1*

Lab Sample ID: LCS 160-274050/2-A
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 274050

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.1	13.99		1.50	1.00	0.197	pCi/L	126	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*80.6*		*40 - 110*

Lab Sample ID: LCSD 160-274050/3-A
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 274050

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.1	15.25		1.60	1.00	0.220	pCi/L	137	68 - 137	0.40	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.6*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-274085/1-A
Matrix: Water
Analysis Batch: 277189

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 274085

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1553	U	0.289	0.290	1.00	0.489	pCi/L	10/11/16 17:11	11/02/16 13:54	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.6*		*40 - 110*	*10/11/16 17:11*	*11/02/16 13:54*	*1*
Y Carrier	*86.4*		*40 - 110*	*10/11/16 17:11*	*11/02/16 13:54*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-274085/2-A
Matrix: Water
Analysis Batch: 277189

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 274085

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.3	16.81		1.81	1.00	0.462	pCi/L	117	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*80.6*		*40 - 110*
Y Carrier	*87.9*		*40 - 110*

Lab Sample ID: LCSD 160-274085/3-A
Matrix: Water
Analysis Batch: 277189

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 274085

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.3	15.07		1.62	1.00	0.415	pCi/L	105	56 - 140	0.51	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.6*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

HPLC/IC

Analysis Batch: 378753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	9056A	
490-113345-3	MW-5	Total/NA	Water	9056A	
490-113345-4	MW-6	Total/NA	Water	9056A	

Analysis Batch: 379144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	9056A	
490-113345-4	MW-6	Total/NA	Water	9056A	
490-113345-5	MW-8	Total/NA	Water	9056A	
490-113345-5	MW-8	Total/NA	Water	9056A	

Analysis Batch: 379598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	9056A	
490-113613-4	MW-10	Total/NA	Water	9056A	
490-113613-6	FIELD BLANK	Total/NA	Water	9056A	

Analysis Batch: 379892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	9056A	
490-113613-4	MW-10	Total/NA	Water	9056A	
490-113613-4	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 190727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total Recoverable	Water	3005A	
490-113345-4	MW-6	Total Recoverable	Water	3005A	
490-113345-5	MW-8	Total Recoverable	Water	3005A	

Prep Batch: 190728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total Recoverable	Water	3005A	
490-113345-4	MW-6	Total Recoverable	Water	3005A	
490-113345-5	MW-8	Total Recoverable	Water	3005A	

Prep Batch: 190865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total Recoverable	Water	3005A	
490-113613-4	MW-10	Total Recoverable	Water	3005A	
490-113613-6	FIELD BLANK	Total Recoverable	Water	3005A	

Prep Batch: 190866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total Recoverable	Water	3005A	
490-113613-4	MW-10	Total Recoverable	Water	3005A	
490-113613-6	FIELD BLANK	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 191132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total Recoverable	Water	6010C	190727
490-113345-4	MW-6	Total Recoverable	Water	6010C	190727
490-113345-5	MW-8	Total Recoverable	Water	6010C	190727

Analysis Batch: 191326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total Recoverable	Water	6020A	190728
490-113345-4	MW-6	Total Recoverable	Water	6020A	190728
490-113345-5	MW-8	Total Recoverable	Water	6020A	190728

Analysis Batch: 191336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total Recoverable	Water	6010C	190865
490-113613-4	MW-10	Total Recoverable	Water	6010C	190865
490-113613-6	FIELD BLANK	Total Recoverable	Water	6010C	190865

Analysis Batch: 192190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total Recoverable	Water	6020A	190866
490-113613-4	MW-10	Total Recoverable	Water	6020A	190866
490-113613-6	FIELD BLANK	Total Recoverable	Water	6020A	190866

Prep Batch: 377073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	7470A	
490-113345-4	MW-6	Total/NA	Water	7470A	
490-113345-5	MW-8	Total/NA	Water	7470A	

Prep Batch: 377425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	7470A	
490-113613-4	MW-10	Total/NA	Water	7470A	
490-113613-6	FIELD BLANK	Total/NA	Water	7470A	

Analysis Batch: 377516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	7470A	377073
490-113345-4	MW-6	Total/NA	Water	7470A	377073
490-113345-5	MW-8	Total/NA	Water	7470A	377073

Analysis Batch: 377788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	7470A	377425
490-113613-4	MW-10	Total/NA	Water	7470A	377425
490-113613-6	FIELD BLANK	Total/NA	Water	7470A	377425

General Chemistry

Analysis Batch: 376481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	SM 2540C	
490-113345-4	MW-6	Total/NA	Water	SM 2540C	

Analysis Batch: 376492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-5	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 377320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	SM 2540C	
490-113613-4	MW-10	Total/NA	Water	SM 2540C	
490-113613-6	FIELD BLANK	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 274050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	PrecSep-21	
490-113345-4	MW-6	Total/NA	Water	PrecSep-21	
490-113345-5	MW-8	Total/NA	Water	PrecSep-21	

Prep Batch: 274085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113345-3	MW-5	Total/NA	Water	PrecSep_0	
490-113345-4	MW-6	Total/NA	Water	PrecSep_0	
490-113345-5	MW-8	Total/NA	Water	PrecSep_0	

Prep Batch: 274473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	PrecSep-21	
490-113613-4	MW-10	Total/NA	Water	PrecSep-21	
490-113613-6	FIELD BLANK	Total/NA	Water	PrecSep-21	

Prep Batch: 274475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-113613-3	MW-7	Total/NA	Water	PrecSep_0	
490-113613-4	MW-10	Total/NA	Water	PrecSep_0	
490-113613-6	FIELD BLANK	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-5

Lab Sample ID: 490-113345-3

Date Collected: 10/04/16 12:14

Matrix: Water

Date Received: 10/06/16 11:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			378753	10/15/16 17:43	KS	TAL NSH
Total/NA	Analysis	9056A		20			378753	10/15/16 20:10	KS	TAL NSH
Total/NA	Analysis	9056A		200			379144	10/17/16 21:01	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	190727	10/11/16 07:14	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			191132	10/13/16 17:35	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	190728	10/11/16 07:15	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			191326	10/14/16 10:31	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	377073	10/11/16 09:59	LCS	TAL NSH
Total/NA	Analysis	7470A		1			377516	10/12/16 09:13	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	376481	10/11/16 17:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.15 mL	1.0 g	274050	10/11/16 13:20	AS	TAL SL
Total/NA	Analysis	903.0		1			277455	11/03/16 07:01	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.15 mL	1.0 g	274085	10/11/16 17:11	CMC	TAL SL
Total/NA	Analysis	904.0		1			277242	11/02/16 14:30	JLW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			278004	11/07/16 10:32	RTM	TAL SL

Client Sample ID: MW-6

Lab Sample ID: 490-113345-4

Date Collected: 10/04/16 14:50

Matrix: Water

Date Received: 10/06/16 11:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			378753	10/15/16 18:07	KS	TAL NSH
Total/NA	Analysis	9056A		100			379144	10/17/16 22:02	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	190727	10/11/16 07:14	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			191132	10/13/16 17:40	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	190728	10/11/16 07:15	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			191326	10/14/16 10:33	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	377073	10/11/16 09:59	LCS	TAL NSH
Total/NA	Analysis	7470A		1			377516	10/12/16 09:16	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	376481	10/11/16 17:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	274050	10/11/16 13:20	AS	TAL SL
Total/NA	Analysis	903.0		1			277455	11/03/16 07:02	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	274085	10/11/16 17:11	CMC	TAL SL
Total/NA	Analysis	904.0		1			277242	11/02/16 14:31	JLW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			278004	11/07/16 10:32	RTM	TAL SL

Client Sample ID: MW-8

Lab Sample ID: 490-113345-5

Date Collected: 10/03/16 12:30

Matrix: Water

Date Received: 10/06/16 11:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			379144	10/17/16 22:27	JHS	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: MW-8

Date Collected: 10/03/16 12:30
Date Received: 10/06/16 11:59

Lab Sample ID: 490-113345-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50			379144	10/17/16 23:53	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	190727	10/11/16 07:14	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			191132	10/13/16 17:45	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	190728	10/11/16 07:15	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			191326	10/14/16 10:35	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	377073	10/11/16 09:59	LCS	TAL NSH
Total/NA	Analysis	7470A		1			377516	10/12/16 09:19	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	376492	10/09/16 18:11	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.11 mL	1.0 g	274050	10/11/16 13:20	AS	TAL SL
Total/NA	Analysis	903.0		1			277455	11/03/16 07:02	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.11 mL	1.0 g	274085	10/11/16 17:11	CMC	TAL SL
Total/NA	Analysis	904.0		1			277242	11/02/16 14:31	JLW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			278004	11/07/16 10:32	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 10/06/16 12:58
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			379598	10/19/16 14:14	JHS	TAL NSH
Total/NA	Analysis	9056A		50			379892	10/20/16 08:30	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	190865	10/12/16 06:44	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			191336	10/14/16 15:26	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	190866	10/12/16 06:46	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			192190	10/22/16 16:49	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	377425	10/12/16 10:10	LCS	TAL NSH
Total/NA	Analysis	7470A		1			377788	10/12/16 16:20	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	377320	10/11/16 20:45	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.77 mL	1.0 g	274473	10/13/16 14:09	AS	TAL SL
Total/NA	Analysis	903.0		1			278294	11/08/16 09:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.77 mL	1.0 g	274475	10/13/16 15:00	AS	TAL SL
Total/NA	Analysis	904.0		1			277688	11/04/16 18:32	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			278925	11/11/16 15:16	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 10/06/16 14:25
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			379598	10/19/16 14:50	JHS	TAL NSH
Total/NA	Analysis	9056A		5			379892	10/20/16 09:05	JHS	TAL NSH
Total/NA	Analysis	9056A		200			379892	10/20/16 09:41	JHS	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Client Sample ID: MW-10

Date Collected: 10/06/16 14:25
Date Received: 10/08/16 10:39

Lab Sample ID: 490-113613-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	190865	10/12/16 06:44	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			191336	10/14/16 15:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	190866	10/12/16 06:46	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			192190	10/22/16 16:51	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	377425	10/12/16 10:10	LCS	TAL NSH
Total/NA	Analysis	7470A		1			377788	10/12/16 16:23	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	377320	10/11/16 20:45	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.86 mL	1.0 g	274473	10/13/16 14:09	AS	TAL SL
Total/NA	Analysis	903.0		1			278294	11/08/16 09:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.86 mL	1.0 g	274475	10/13/16 15:00	AS	TAL SL
Total/NA	Analysis	904.0		1			277688	11/04/16 18:32	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			278925	11/11/16 15:16	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 10/05/16 17:45
Date Received: 10/08/16 09:00

Lab Sample ID: 490-113613-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			379598	10/19/16 16:55	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	190865	10/12/16 06:44	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			191336	10/14/16 15:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	190866	10/12/16 06:46	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			192190	10/22/16 16:55	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	377425	10/12/16 10:10	LCS	TAL NSH
Total/NA	Analysis	7470A		1			377788	10/12/16 16:30	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377320	10/11/16 20:45	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.85 mL	1.0 g	274473	10/13/16 14:09	AS	TAL SL
Total/NA	Analysis	903.0		1			278266	11/08/16 09:38	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.85 mL	1.0 g	274475	10/13/16 15:00	AS	TAL SL
Total/NA	Analysis	904.0		1			277688	11/04/16 18:33	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			278925	11/11/16 15:16	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-19
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	01-01-18 *
Arizona	State Program	9	AZ0473	05-05-18
Arkansas DEQ	State Program	6	88-0737	04-25-18
California	State Program	9	2938	10-31-18
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-18
Georgia	State Program	4	E87358(FL)/453.07(A2LA)	06-30-18
Illinois	NELAP	5	200010	12-09-18
Iowa	State Program	7	131	04-01-18
Kansas	NELAP	7	E-10229	12-31-17 *
Kentucky (UST)	State Program	4	19	06-30-18
Kentucky (WW)	State Program	4	90038	12-31-18
Louisiana	NELAP	6	30613	06-30-18
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-18
Massachusetts	State Program	1	M-TN032	06-30-18
Minnesota	NELAP	5	047-999-345	12-31-18
Mississippi	State Program	4	N/A	06-30-18
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-18
New Hampshire	NELAP	1	2963	10-09-18
New Jersey	NELAP	2	TN965	06-30-18
New York	NELAP	2	11342	03-31-18
North Carolina (WW/SW)	State Program	4	387	12-31-18
North Dakota	State Program	8	R-146	06-30-18
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-18
Oregon	NELAP	10	TN200001	04-27-18
Pennsylvania	NELAP	3	68-00585	06-30-18
Rhode Island	State Program	1	LAO00268	12-30-17 *
South Carolina	State Program	4	84009 (001)	02-28-18
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-18
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-18
Virginia	NELAP	3	460152	06-14-18
Washington	State Program	10	C789	07-19-18
West Virginia DEP	State Program	3	219	02-28-18
Wisconsin	State Program	5	998020430	08-31-18
Wyoming (UST)	A2LA	8	453.07	12-31-19

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Laboratory: TestAmerica Pittsburgh (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

490-113345 Chain of Custody

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 10/6/2016 @ 940

Time Samples Removed From Cooler 1116 Time Samples Placed In Storage 1221 (2 Hour Window)

1. Tracking # 5798 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC81117 Chlorine Strip Lot 0407156

2. Temperature of rep. sample or temp blank when opened: 1.2 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1, front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AES

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) DA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) DA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) DA

I certify that I attached a label with the unique LIMS number to each container (intial) DA

21. Were there Non-Conformance issues at login? YES..NO Was a NCM generated? YES..NO..#_____

BIS = Broken in shipment

Loc: 490
113345

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 10/6/2016 @ 940

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 6847 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID__17610176_____ pH Strip Lot HC811117 Chlorine Strip Lot 04071SC

2. Temperature of rep. sample or temp blank when opened: 2.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

PM 10/6/16

I certify that I opened the cooler and answered questions 1-6 (intial) PM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) DA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) DA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) DA

I certify that I attached a label with the unique LIMS number to each container (intial) DA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

Loc: 490
113345

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 10/6/2016 @ 940

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 6978 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC81117 Chlorine Strip Lot 040715C

2. Temperature of rep. sample or temp blank when opened: 1.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1, front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) AES 10/6/16

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) DA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) DA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) DA

I certify that I attached a label with the unique LIMS number to each container (intial) DA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

Loc: 490
113345

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 10/6/2016 @ 940

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 7058 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 97310166 pH Strip Lot HC81117 Chlorine Strip Lot 040715C

2. Temperature of rep. sample or temp blank when opened: 3.5 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO (NA)

4. Were custody seals on outside of cooler? (YES)...NO...NA

If yes, how many and where: 2- Front

5. Were the seals intact, signed, and dated correctly? (YES)...NO...NA

6. Were custody papers inside cooler? YES...(NO)...NA

I certify that I opened the cooler and answered questions 1-6 (intial) DA

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other (None)

9. Cooling process: Ice Ice-pack (Ice (direct contact)) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)...NO...NA

13a. Were VOA vials received? YES...(NO)...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...(NA)

14. Was there a Trip Blank in this cooler? YES...(NO)...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) DA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES)...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES...(NO)...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) DA

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) DA

I certify that I attached a label with the unique LIMS number to each container (intial) DA

21. Were there Non-Conformance issues at login? YES...(NO) Was a NCM generated? YES...(NO)...#_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Loc: 490
113345

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 10/05/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6010 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: WL CCR Groundwater-Round 4/2nd Semi-Annual	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-58044-18749.1
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	2320B-Carbonate & Bicarbonate Alk	Sample Specific Notes:
1	MW-1	10/3/16	1058	G	Water	9	N	N	x	x	x	x	x	x	x	
2	MW-2	10/3/16	1510	G	Water	9	N	N	x	x	x	x	x	x	x	
3	MW-5	10/4/16	1214	G	Water	9	N	N	x	x	x	x	x	x	x	
4	MW-6	10/4/16	1450	G	Water	9	N	N	x	x	x	x	x	x	x	
5	MW-8	10/3/16	1230	G	Water	9	N	N	x	x	x	x	x	x	x	
									4	4	3	7	3	7	7	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations) and 401 KAR Chapter 45 (Kentucky Regulations). See attached constituent list for analysis.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 10/5/2016 0830	Received by:	Company: TAN	Date/Time: 10-6-16 0940
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp. 1.2, 2.1, 1.8, 3.5

401 KAR Chapter 45 (Semi-Annual Groundwater) Constituent List

The following list of constituents are required by 401 KAR Chapter 45 to be analyzed:

-Chloride
-Chemical oxygen demand
-Total dissolved solids
-Total organic carbon
-Specific conductance
-pH
-Copper
-Flouride
-Sulfate
-Antimony
-Arsenic
-Barium
-Beryllium
-Boron
-Cadmium
-Calcium
-Chromium
-Cobalt
-Lead
-Lithium
-Mercury
-Molybdenum
-Selenium
-Thallium
-Temperature
-Nickel
-Zinc
-Iron
-Sodium
-Magnesium
-Potassium
-Bicarbonate
-Carbonate

10/5/2016 0830

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

10/5/2016 0830

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 06OCT16
ACTWGT: 10.0 LB MAN
CAD: 534003/CAFE291

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490-58508

Fe
E

TRK# 0201 6493 8982 8781

FRI - 07 OCT 10:
PRIORITY OVERNIGI

EV AGCA

15238
PA-US PIT

Uncorrected temp 17.2/16.7 °C
Thermometer ID 9
CF -0.5 Initials TS

PT-WI-SR-001 effective 7/26/13

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

490-113345 Chain of Custody

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	COC No: 490-49217.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Job #: 490-113345-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/3/2016		
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: WL CCR Groundwater Round 4	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (490-113345-1)	10/3/16	10:58 Central		Water			X	X	X	2	
MW-2 (490-113345-2)	10/3/16	15:10 Central		Water			X	X	X	2	
MW-5 (490-113345-3)	10/4/16	12:14 Central		Water			X	X	X	2	
MW-6 (490-113345-4)	10/4/16	14:50 Central		Water			X	X	X	2	
MW-8 (490-113345-5)	10/3/16	12:30 Central		Water			X	X	X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Billy Barnes	Date/Time: 10-6-16 1658	Company: Nashville	Received by: [illegible]	Date/Time: 10-7-16 0910	Company: TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-113345 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Lo: 19218.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Job #: 490-113345-2
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/18/2016		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: WL Groundwater 2nd Semi-Annual	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-113345-1)	10/3/16	10:58 Central		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-113345-2)	10/3/16	15:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-113345-3)	10/4/16	12:14 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-113345-4)	10/4/16	14:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-113345-5)	10/3/16	12:30 Central		Water			X	X	1	Metals - run once, upload together.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Billy Brown	Date/Time: 10-6-16 1702	Company	Received by:	Date/Time: 10/7/16 900	Company TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-49218.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-113345-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/31/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater Round 4	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3006A (MOD) Lithium	6020A/3006A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-113345-1)	10/3/16	10:58 Central		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-113345-2)	10/3/16	15:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-113345-3)	10/4/16	12:14 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-113345-4)	10/4/16	14:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-113345-5)	10/3/16	12:30 Central		Water			X	X	1	Metals - run once, upload together.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Billy Brown	10-6-16 1802	Nashville		10/6 10/7/16 9:00	TAT
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-113345-1
SDG Number:

Login Number: 113345
List Number: 1
Creator: Armstrong, Daniel

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2C, 2.1C, 1.8C, 3.5C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-113345-1
SDG Number:

Login Number: 113345
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 10/07/16 05:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-113345-1
SDG Number:

Login Number: 113345
List Number: 3
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 10/10/16 11:31 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater Round 4

TestAmerica Job ID: 490-113345-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-113345-3	MW-5	94.0
490-113345-4	MW-6	91.7
490-113345-5	MW-8	92.0
490-113613-3	MW-7	79.2
490-113613-4	MW-10	85.2
490-113613-6	FIELD BLANK	82.1

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-113345-3	MW-5	94.0	87.1
490-113345-4	MW-6	91.7	87.1
490-113345-5	MW-8	92.0	85.6
490-113613-3	MW-7	79.2	87.5
490-113613-4	MW-10	85.2	87.1
490-113613-6	FIELD BLANK	82.1	89.0

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-122187-1
TestAmerica SDG: Wilson Station, Wilson Landfill
Client Project/Site: WL CCR Groundwater-Round 5
Sampling Event: Big Rivers CCR/SemiAnnual GW
Revision: 1

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 3:14:19 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-122187-2	MW-5	Water	02/15/17 13:40	02/17/17 17:41
490-122187-3	MW-6	Water	02/15/17 15:25	02/17/17 17:41
490-122187-4	MW-7	Water	02/15/17 16:30	02/17/17 17:41
490-122187-5	MW-8	Water	02/15/17 12:25	02/17/17 17:41
490-122212-4	MW-10	Water	02/17/17 10:55	02/18/17 11:24
490-122212-5	Field Blank	Water	02/17/17 15:30	02/18/17 11:24

Job ID: 490-122187-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-122187-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 2/17/2017 5:41 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.4º C, 0.5º C and 1.7º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-411440 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-5 (490-122187-2), MW-6 (490-122187-3), MW-7 (490-122187-4),and MW-8 (490-122187-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-411440 contained chloride and sulfate above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) SM 2540C: The method blank for analytical batch 490-409501 contained Total Dissolved Solids above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Narrative

Job Narrative
490-122187-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 2/17/2017 5:41 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.4º C, 0.5º C and 1.7º C.

RAD
Method(s) PrecSep_0: Radium 228; Prep Batch 294407: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 160-294407. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepped instead to show batch precision.

Method(s) PrecSep-21: Radium 226; Prep Batch 294401: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 160-294401. A laboratory control sample/ laboratory control

Job ID: 490-122187-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

sample duplicate (LCS/LCSD) were prepped instead to show batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Narrative

Job Narrative
490-122212-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 2/18/2017 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 1.2º C.

RAD
Method(s) PrecSep_0: Radium 228; Prep Batch 294407: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 160-294407. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepped instead to show batch precision.

Method(s) PrecSep-21: Radium 226; Prep Batch 294401: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 160-294401. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepped instead to show batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 490-122212-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-122212-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 2/18/2017 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 1.2º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-411167 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-411167 contained Chloride and sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-411167 contained Chloride and Sulfate above the method detection limit (MDL) but less than reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: The following sample was diluted due to the nature of the sample matrix: MW-10 (490-122212-4). Elevated reporting limits (RLs) are provided.

Job ID: 490-122212-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-411487 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 02/15/17 13:40
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**	**B**	15.0	1.00	mg/L			03/02/17 05:42	5
Fluoride	**0.0757**	**J**	1.00	0.0100	mg/L			03/01/17 20:53	1
Sulfate	**1620**		500	3.00	mg/L			03/02/17 00:52	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0432**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 10:18	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 11:00	1
Arsenic	**0.00430**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:00	1
Barium	**0.0110**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:00	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:00	1
Boron	**0.839**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:00	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:00	1
Calcium	**471**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:00	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:00	1
Cobalt	**0.00518**		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:00	1
Lead	**0.000462**	**J**	0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:00	1
Molybdenum	**0.00432**	**J**	0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:00	1
Selenium	**0.000610**	**J**	0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:00	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/24/17 12:29	02/27/17 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.06**		0.100	0.100	SU			02/21/17 15:12	1
Temperature	**21.4**		0.100	0.100	Degrees C			02/21/17 15:12	1
Total Dissolved Solids	**3000**		20.0	14.0	mg/L			02/21/17 20:07	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.322**		0.104	0.108	1.00	0.0802	pCi/L	02/24/17 10:49	03/20/17 20:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:29*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.690**		0.351	0.357	1.00	0.529	pCi/L	02/24/17 11:31	03/11/17 14:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:44*	*1*

Client Sample ID: MW-5
Date Collected: 02/15/17 13:40
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	79.3		40 - 110	02/24/17 11:31	03/11/17 14:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.366	0.373	5.00	0.529	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-6

Date Collected: 02/15/17 15:25
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.93		3.00	0.200	mg/L			03/01/17 21:27	1
Fluoride	0.114	J	1.00	0.0100	mg/L			03/01/17 21:27	1
Sulfate	1610		500	3.00	mg/L			03/02/17 01:26	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0508		0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 10:24	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000166	J	0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 11:05	1
Arsenic	0.0123		0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:05	1
Barium	0.0130	J	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:05	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:05	1
Boron	0.293	J	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:05	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:05	1
Calcium	414	B	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:05	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:05	1
Cobalt	0.00540		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:05	1
Lead	0.00137	J	0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:05	1
Molybdenum	0.00917	J	0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:05	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:05	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/23/17 12:08	02/24/17 18:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.60		0.100	0.100	SU			02/21/17 15:12	1
Temperature	21.4		0.100	0.100	Degrees C			02/21/17 15:12	1
Total Dissolved Solids	2620		20.0	14.0	mg/L			02/21/17 20:07	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.249		0.105	0.108	1.00	0.119	pCi/L	02/24/17 10:49	03/20/17 20:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:30*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.670		0.310	0.316	1.00	0.455	pCi/L	02/24/17 11:31	03/11/17 14:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:44*	*1*

Client Sample ID: MW-6

Date Collected: 02/15/17 15:25
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-3

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.5		40 - 110	02/24/17 11:31	03/11/17 14:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.919		0.328	0.334	5.00	0.455	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-7

Date Collected: 02/15/17 16:30
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.15**		3.00	0.200	mg/L			03/01/17 22:01	1
Fluoride	**0.218**	**J**	1.00	0.0100	mg/L			03/01/17 22:01	1
Sulfate	**850**		250	1.50	mg/L			03/02/17 02:00	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0318**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 10:29	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 11:10	1
Arsenic	**0.00303**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:10	1
Barium	**0.0158**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:10	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:10	1
Boron	**0.293**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:10	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:10	1
Calcium	**262**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:10	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:10	1
Cobalt	**0.00531**		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:10	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:10	1
Molybdenum	**0.00287**	**J**	0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:10	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:10	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/24/17 12:29	02/27/17 17:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.72**		0.100	0.100	SU			02/21/17 15:12	1
Temperature	**21.4**		0.100	0.100	Degrees C			02/21/17 15:12	1
Total Dissolved Solids	**1540**		20.0	14.0	mg/L			02/21/17 20:07	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0201	U	0.0761	0.0761	1.00	0.144	pCi/L	02/24/17 10:49	03/20/17 20:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.6*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:30*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.171	U	0.317	0.317	1.00	0.538	pCi/L	02/24/17 11:31	03/11/17 14:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.6*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:44*	*1*

Client Sample ID: MW-7

Date Collected: 02/15/17 16:30
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-4

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.6		40 - 110	02/24/17 11:31	03/11/17 14:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.192	U	0.326	0.326	5.00	0.538	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-8

Date Collected: 02/15/17 12:25
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.70**		3.00	0.200	mg/L			03/01/17 22:36	1
Fluoride	**0.214**	**J**	1.00	0.0100	mg/L			03/01/17 22:36	1
Sulfate	**779**	**B**	250	1.50	mg/L			03/02/17 04:00	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0142**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 10:34	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 11:15	1
Arsenic	**0.00799**		0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:15	1
Barium	**0.0249**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:15	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:15	1
Boron	**0.0385**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:15	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:15	1
Calcium	**213**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:15	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:15	1
Cobalt	**0.00110**	**J**	0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:15	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:15	1
Molybdenum	**0.0185**		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:15	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:15	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/23/17 12:08	02/24/17 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.57**		0.100	0.100	SU			02/21/17 15:12	1
Temperature	**21.4**		0.100	0.100	Degrees C			02/21/17 15:12	1
Total Dissolved Solids	**1450**	**B**	20.0	14.0	mg/L			02/22/17 21:00	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.463**		0.131	0.137	1.00	0.0869	pCi/L	02/24/17 10:49	03/20/17 20:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.2*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:30*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.391	U	0.322	0.324	1.00	0.513	pCi/L	02/24/17 11:31	03/11/17 14:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.2*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:44*	*1*

Client Sample ID: MW-8

Date Collected: 02/15/17 12:25
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-5

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	02/24/17 11:31	03/11/17 14:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.854		0.348	0.352	5.00	0.513	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-10

Date Collected: 02/17/17 10:55
Date Received: 02/18/17 11:24

Lab Sample ID: 490-122212-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.0**	**B**	15.0	1.00	mg/L			03/01/17 19:27	5
Fluoride	**0.0688**	**J**	1.00	0.0100	mg/L			02/28/17 23:31	1
Sulfate	**1980**	**B**	500	3.00	mg/L			03/01/17 03:06	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0133**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 11:38	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 12:20	1
Arsenic	**0.00173**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 12:20	1
Barium	**0.00988**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 12:20	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 12:20	1
Boron	**0.229**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 12:20	1
Cadmium	**0.000329**	**J**	0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 12:20	1
Calcium	**440**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 12:20	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 12:20	1
Cobalt	**0.0836**		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 12:20	1
Lead	**0.0000870**	**J**	0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 12:20	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 12:20	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 12:20	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 12:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/27/17 08:05	02/27/17 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.31**		0.100	0.100	SU			02/21/17 15:12	1
Temperature	**21.4**		0.100	0.100	Degrees C			02/21/17 15:12	1
Total Dissolved Solids	**3050**		20.0	14.0	mg/L			02/23/17 19:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0293	U	0.0619	0.0619	1.00	0.112	pCi/L	02/24/17 10:49	03/20/17 20:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:31*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.194	U	0.238	0.239	1.00	0.394	pCi/L	02/24/17 11:31	03/11/17 14:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:45*	*1*

Client Sample ID: MW-10

Date Collected: 02/17/17 10:55
Date Received: 02/18/17 11:24

Lab Sample ID: 490-122212-4

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*83.4*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:45*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.224	U	0.246	0.247	5.00	0.394	pCi/L		03/21/17 14:31	1

Client Sample ID: Field Blank

Date Collected: 02/17/17 15:30
Date Received: 02/18/17 11:24

Lab Sample ID: 490-122212-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.781**	**J B**	3.00	0.200	mg/L			03/01/17 00:07	1
Fluoride	ND		1.00	0.0100	mg/L			03/01/17 00:07	1
Sulfate	**0.376**	**J B**	5.00	0.0300	mg/L			03/01/17 00:07	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 11:43	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 12:25	1
Arsenic	ND		0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 12:25	1
Barium	ND		0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 12:25	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 12:25	1
Boron	ND		1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 12:25	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 12:25	1
Calcium	ND		1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 12:25	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 12:25	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 12:25	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 12:25	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 12:25	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 12:25	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 12:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/27/17 08:05	02/27/17 15:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.40**		0.100	0.100	SU			02/21/17 15:18	1
Temperature	**21.4**		0.100	0.100	Degrees C			02/21/17 15:18	1
Total Dissolved Solids	**13.0**		10.0	7.00	mg/L			02/23/17 19:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0672	U	0.0577	0.0580	1.00	0.0826	pCi/L	02/24/17 10:49	03/20/17 20:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:31*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0717	U	0.229	0.229	1.00	0.398	pCi/L	02/24/17 11:31	03/11/17 14:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:45*	*1*

Client Sample ID: Field Blank

Date Collected: 02/17/17 15:30
Date Received: 02/18/17 11:24

Lab Sample ID: 490-122212-5

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.7		40 - 110	02/24/17 11:31	03/11/17 14:45	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.139	U	0.236	0.236	5.00	0.398	pCi/L		03/21/17 14:31	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-411440/3
Matrix: Water
Analysis Batch: 411440

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			03/01/17 18:54	1
Fluoride	ND		1.00	0.0100	mg/L			03/01/17 18:54	1
Sulfate	ND		5.00	0.0300	mg/L			03/01/17 18:54	1

Lab Sample ID: MB 490-411440/32
Matrix: Water
Analysis Batch: 411440

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2401	J	3.00	0.200	mg/L			03/02/17 03:09	1
Fluoride	ND		1.00	0.0100	mg/L			03/02/17 03:09	1
Sulfate	0.03739	J	5.00	0.0300	mg/L			03/02/17 03:09	1

Lab Sample ID: LCS 490-411440/33
Matrix: Water
Analysis Batch: 411440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.784		mg/L		98	80 - 120
Fluoride	1.00	1.000		mg/L		100	80 - 120
Sulfate	10.0	9.852		mg/L		99	80 - 120

Lab Sample ID: LCS 490-411440/4
Matrix: Water
Analysis Batch: 411440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.680		mg/L		97	80 - 120
Fluoride	1.00	1.019		mg/L		102	80 - 120
Sulfate	10.0	9.892		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-411440/34
Matrix: Water
Analysis Batch: 411440

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.682		mg/L		97	80 - 120	1	20
Fluoride	1.00	0.9964	J	mg/L		100	80 - 120	0	20
Sulfate	10.0	9.835		mg/L		98	80 - 120	0	20

Lab Sample ID: LCSD 490-411440/5
Matrix: Water
Analysis Batch: 411440

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.605		mg/L		96	80 - 120	1	20
Fluoride	1.00	1.024		mg/L		102	80 - 120	1	20
Sulfate	10.0	9.899		mg/L		99	80 - 120	0	20

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 490-122187-1 MS
Matrix: Water
Analysis Batch: 411440

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	102	E	2.00	83.31	E 4	mg/L		-911	80 - 120
Fluoride	1.20		0.200	1.254	4	mg/L		27	80 - 120
Sulfate	2430	E	2.00	2081	E 4	mg/L		-17650	80 - 120

Lab Sample ID: 490-122187-1 MSD
Matrix: Water
Analysis Batch: 411440

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	102	E	2.00	84.20	E 4	mg/L		-866	80 - 120	1	20
Fluoride	1.20		0.200	1.266	4	mg/L		33	80 - 120	1	20
Sulfate	2430	E	2.00	2472	E 4	mg/L		1921	80 - 120	17	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-204434/1-A
Matrix: Water
Analysis Batch: 204539

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 09:52	1

Lab Sample ID: LCS 180-204434/2-A
Matrix: Water
Analysis Batch: 204539

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 204434

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.011		mg/L		101	80 - 120

Lab Sample ID: LCSD 180-204434/3-A
Matrix: Water
Analysis Batch: 204539

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 204434

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.021		mg/L		102	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-204432/1-A
Matrix: Water
Analysis Batch: 204655

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/02/17 14:10	03/05/17 10:39	1
Arsenic	ND		0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 10:39	1
Barium	ND		0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 10:39	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 10:39	1
Boron	ND		1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 10:39	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-204432/1-A
Matrix: Water
Analysis Batch: 204655

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 10:39	1
Calcium	0.1316	J	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 10:39	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 10:39	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 10:39	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 10:39	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 10:39	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 10:39	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 10:39	1

Lab Sample ID: LCS 180-204432/2-A
Matrix: Water
Analysis Batch: 204655

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 204432

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5462		mg/L		109	80 - 120
Arsenic	0.0400	0.04080		mg/L		102	80 - 120
Barium	2.00	2.046		mg/L		102	80 - 120
Beryllium	0.0500	0.04886		mg/L		98	80 - 120
Boron	1.00	1.069		mg/L		107	80 - 120
Cadmium	0.0500	0.05376		mg/L		108	80 - 120
Calcium	50.0	44.76		mg/L		90	80 - 120
Chromium	0.200	0.1712		mg/L		86	80 - 120
Cobalt	0.500	0.4637		mg/L		93	80 - 120
Lead	0.0200	0.02193		mg/L		110	80 - 120
Molybdenum	1.00	1.088		mg/L		109	80 - 120
Selenium	0.0100	0.01055		mg/L		106	80 - 120
Thallium	0.0500	0.05085		mg/L		102	80 - 120

Lab Sample ID: LCSD 180-204432/3-A
Matrix: Water
Analysis Batch: 204655

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 204432

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5321		mg/L		106	80 - 120	3	20
Arsenic	0.0400	0.03961		mg/L		99	80 - 120	3	20
Barium	2.00	2.048		mg/L		102	80 - 120	0	20
Beryllium	0.0500	0.04880		mg/L		98	80 - 120	0	20
Boron	1.00	1.072		mg/L		107	80 - 120	0	20
Cadmium	0.0500	0.05415		mg/L		108	80 - 120	1	20
Calcium	50.0	43.39		mg/L		87	80 - 120	3	20
Chromium	0.200	0.1699		mg/L		85	80 - 120	1	20
Cobalt	0.500	0.4553		mg/L		91	80 - 120	2	20
Lead	0.0200	0.02086		mg/L		104	80 - 120	5	20
Molybdenum	1.00	1.061		mg/L		106	80 - 120	3	20
Selenium	0.0100	0.009669	J	mg/L		97	80 - 120	9	20
Thallium	0.0500	0.04956		mg/L		99	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-409955/1-A
Matrix: Water
Analysis Batch: 410557

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 409955

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/23/17 12:08	02/24/17 17:37	1

Lab Sample ID: LCS 490-409955/2-A
Matrix: Water
Analysis Batch: 410557

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 409955

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.080		ug/L		108	80 - 120

Lab Sample ID: LCSD 490-409955/3-A
Matrix: Water
Analysis Batch: 410557

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 409955

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.00	1.102		ug/L		110	80 - 120	2	20

Lab Sample ID: 490-122185-A-3-B MS
Matrix: Water
Analysis Batch: 410557

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 409955

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1 F2	1.00	0.4027	F1	ug/L		40	75 - 125

Lab Sample ID: 490-122185-A-3-C MSD
Matrix: Water
Analysis Batch: 410557

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 409955

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1 F2	1.00	0.3195	F1 F2	ug/L		32	75 - 125	23	20

Lab Sample ID: MB 490-410312/1-A
Matrix: Water
Analysis Batch: 410819

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 410312

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/24/17 12:29	02/27/17 16:24	1

Lab Sample ID: LCS 490-410312/2-A
Matrix: Water
Analysis Batch: 410819

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 410312

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.139		ug/L		114	80 - 120

Lab Sample ID: LCSD 490-410312/3-A
Matrix: Water
Analysis Batch: 410819

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 410312

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.00	1.171		ug/L		117	80 - 120	3	20

Lab Sample ID: 490-122187-2 MS
Matrix: Water
Analysis Batch: 410819

Client Sample ID: MW-5
Prep Type: Total/NA
Prep Batch: 410312

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.8900		ug/L		89	75 - 125

Lab Sample ID: 490-122187-2 MSD
Matrix: Water
Analysis Batch: 410819

Client Sample ID: MW-5
Prep Type: Total/NA
Prep Batch: 410312

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9163		ug/L		92	75 - 125	3	20

Method: 9040C - pH

Lab Sample ID: LCS 490-409452/1
Matrix: Water
Analysis Batch: 409452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.100		SU		101	98 - 103

Lab Sample ID: 490-122212-C-4 DU
Matrix: Water
Analysis Batch: 409452

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.31		6.320		SU		0.2	20
Temperature	21.4		21.40		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-409501/1
Matrix: Water
Analysis Batch: 409501

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7.000	J	10.0	7.00	mg/L			02/22/17 21:00	1

Lab Sample ID: LCS 490-409501/2
Matrix: Water
Analysis Batch: 409501

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	95.00		mg/L		95	90 - 110

Lab Sample ID: 180-63562-J-1 DU
Matrix: Water
Analysis Batch: 409501

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	513	B	508.0		mg/L		1	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 490-122172-A-1 DU
Matrix: Water
Analysis Batch: 409501

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	597	B		604.0		mg/L				1	20

Lab Sample ID: MB 490-409504/1
Matrix: Water
Analysis Batch: 409504

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			02/21/17 20:07	1

Lab Sample ID: LCS 490-409504/2
Matrix: Water
Analysis Batch: 409504

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	98.00		mg/L		98	90 - 110		

Lab Sample ID: 490-121989-C-27 DU
Matrix: Water
Analysis Batch: 409504

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	370			372.0		mg/L				0.5	20

Lab Sample ID: 490-122187-4 DU
Matrix: Water
Analysis Batch: 409504

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1540			1556		mg/L				0.9	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-294401/1-A
Matrix: Water
Analysis Batch: 298257

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294401

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1011		0.0693	0.0699	1.00	0.0920	pCi/L	02/24/17 10:49	03/20/17 20:28	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*02/24/17 10:49*	*03/20/17 20:28*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-294401/2-A
Matrix: Water
Analysis Batch: 298257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294401

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	10.72		1.12	1.00	0.112	pCi/L	94	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.7*		*40 - 110*

Lab Sample ID: LCSD 160-294401/3-A
Matrix: Water
Analysis Batch: 298257

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294401

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	11.08		1.15	1.00	0.0841	pCi/L	98	68 - 137	0.16	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.9*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-294407/1-A
Matrix: Water
Analysis Batch: 297297

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294407

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.03249	U	0.238	0.238	1.00	0.431	pCi/L	02/24/17 11:31	03/11/17 14:43	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:43*	*1*
Y Carrier	*83.7*		*40 - 110*	*02/24/17 11:31*	*03/11/17 14:43*	*1*

Lab Sample ID: LCS 160-294407/2-A
Matrix: Water
Analysis Batch: 297297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294407

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.7	13.59		1.49	1.00	0.394	pCi/L	99	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.7*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-294407/3-A
Matrix: Water
Analysis Batch: 297297

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294407

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.7	13.97		1.51	1.00	0.370	pCi/L	102	56 - 140	0.13	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*90.9*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-133961-A-20 DU
Matrix: Water
Analysis Batch: 298860

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	0.535			0.2156	U	0.246	5.00	0.399	pCi/L			0.58	

HPLC/IC

Analysis Batch: 411167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122212-4	MW-10	Total/NA	Water	9056A	
490-122212-4	MW-10	Total/NA	Water	9056A	
490-122212-5	Field Blank	Total/NA	Water	9056A	

Analysis Batch: 411440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	9056A	
490-122187-2	MW-5	Total/NA	Water	9056A	
490-122187-2	MW-5	Total/NA	Water	9056A	
490-122187-3	MW-6	Total/NA	Water	9056A	
490-122187-3	MW-6	Total/NA	Water	9056A	
490-122187-4	MW-7	Total/NA	Water	9056A	
490-122187-4	MW-7	Total/NA	Water	9056A	
490-122187-5	MW-8	Total/NA	Water	9056A	
490-122187-5	MW-8	Total/NA	Water	9056A	

Analysis Batch: 411487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122212-4	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 204432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total Recoverable	Water	3005A	
490-122187-3	MW-6	Total Recoverable	Water	3005A	
490-122187-4	MW-7	Total Recoverable	Water	3005A	
490-122187-5	MW-8	Total Recoverable	Water	3005A	
490-122212-4	MW-10	Total Recoverable	Water	3005A	
490-122212-5	Field Blank	Total Recoverable	Water	3005A	

Prep Batch: 204434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total Recoverable	Water	3005A	
490-122187-3	MW-6	Total Recoverable	Water	3005A	
490-122187-4	MW-7	Total Recoverable	Water	3005A	
490-122187-5	MW-8	Total Recoverable	Water	3005A	
490-122212-4	MW-10	Total Recoverable	Water	3005A	
490-122212-5	Field Blank	Total Recoverable	Water	3005A	

Analysis Batch: 204539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total Recoverable	Water	6010C	204434
490-122187-3	MW-6	Total Recoverable	Water	6010C	204434
490-122187-4	MW-7	Total Recoverable	Water	6010C	204434
490-122187-5	MW-8	Total Recoverable	Water	6010C	204434
490-122212-4	MW-10	Total Recoverable	Water	6010C	204434
490-122212-5	Field Blank	Total Recoverable	Water	6010C	204434

Metals (Continued)

Analysis Batch: 204655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total Recoverable	Water	6020A	204432
490-122187-3	MW-6	Total Recoverable	Water	6020A	204432
490-122187-4	MW-7	Total Recoverable	Water	6020A	204432
490-122187-5	MW-8	Total Recoverable	Water	6020A	204432
490-122212-4	MW-10	Total Recoverable	Water	6020A	204432
490-122212-5	Field Blank	Total Recoverable	Water	6020A	204432

Prep Batch: 409955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-3	MW-6	Total/NA	Water	7470A	
490-122187-5	MW-8	Total/NA	Water	7470A	

Prep Batch: 410312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	7470A	
490-122187-4	MW-7	Total/NA	Water	7470A	

Analysis Batch: 410557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-3	MW-6	Total/NA	Water	7470A	409955
490-122187-5	MW-8	Total/NA	Water	7470A	409955

Prep Batch: 410568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122212-4	MW-10	Total/NA	Water	7470A	
490-122212-5	Field Blank	Total/NA	Water	7470A	

Analysis Batch: 410819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	7470A	410312
490-122187-4	MW-7	Total/NA	Water	7470A	410312
490-122212-4	MW-10	Total/NA	Water	7470A	410568
490-122212-5	Field Blank	Total/NA	Water	7470A	410568

General Chemistry

Analysis Batch: 409452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	9040C	
490-122187-3	MW-6	Total/NA	Water	9040C	
490-122187-4	MW-7	Total/NA	Water	9040C	
490-122187-5	MW-8	Total/NA	Water	9040C	
490-122212-4	MW-10	Total/NA	Water	9040C	

Analysis Batch: 409455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122212-5	Field Blank	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 409501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-5	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 409504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	SM 2540C	
490-122187-3	MW-6	Total/NA	Water	SM 2540C	
490-122187-4	MW-7	Total/NA	Water	SM 2540C	

Analysis Batch: 410025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122212-4	MW-10	Total/NA	Water	SM 2540C	
490-122212-5	Field Blank	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 294401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	PrecSep-21	
490-122187-3	MW-6	Total/NA	Water	PrecSep-21	
490-122187-4	MW-7	Total/NA	Water	PrecSep-21	
490-122187-5	MW-8	Total/NA	Water	PrecSep-21	
490-122212-4	MW-10	Total/NA	Water	PrecSep-21	
490-122212-5	Field Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 294407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-122187-2	MW-5	Total/NA	Water	PrecSep_0	
490-122187-3	MW-6	Total/NA	Water	PrecSep_0	
490-122187-4	MW-7	Total/NA	Water	PrecSep_0	
490-122187-5	MW-8	Total/NA	Water	PrecSep_0	
490-122212-4	MW-10	Total/NA	Water	PrecSep_0	
490-122212-5	Field Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Client Sample ID: MW-5

Date Collected: 02/15/17 13:40
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			411440	03/01/17 20:53	JHS	TAL NSH
Total/NA	Analysis	9056A		100			411440	03/02/17 00:52	JHS	TAL NSH
Total/NA	Analysis	9056A		5			411440	03/02/17 05:42	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204434	03/02/17 14:15	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204539	03/03/17 10:18	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204432	03/02/17 14:10	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	204655	03/05/17 11:00	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	410312	02/24/17 12:29	CAH	TAL NSH
Total/NA	Analysis	7470A		1			410819	02/27/17 16:56	CAH	TAL NSH
Total/NA	Analysis	9040C		1			409452	02/21/17 15:12	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	409504	02/21/17 20:07	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.41 mL	1.0 g	294401	02/24/17 10:49	PJM	TAL SL
Total/NA	Analysis	903.0		1			298257	03/20/17 20:29	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.41 mL	1.0 g	294407	02/24/17 11:31	PJM	TAL SL
Total/NA	Analysis	904.0		1			297297	03/11/17 14:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 02/15/17 15:25
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			411440	03/01/17 21:27	JHS	TAL NSH
Total/NA	Analysis	9056A		100			411440	03/02/17 01:26	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204434	03/02/17 14:15	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204539	03/03/17 10:24	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204432	03/02/17 14:10	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	204655	03/05/17 11:05	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	409955	02/23/17 12:08	CAH	TAL NSH
Total/NA	Analysis	7470A		1			410557	02/24/17 18:49	CAH	TAL NSH
Total/NA	Analysis	9040C		1			409452	02/21/17 15:12	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	409504	02/21/17 20:07	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.39 mL	1.0 g	294401	02/24/17 10:49	PJM	TAL SL
Total/NA	Analysis	903.0		1			298257	03/20/17 20:30	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.39 mL	1.0 g	294407	02/24/17 11:31	PJM	TAL SL
Total/NA	Analysis	904.0		1			297297	03/11/17 14:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Client Sample ID: MW-7

Date Collected: 02/15/17 16:30
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			411440	03/01/17 22:01	JHS	TAL NSH
Total/NA	Analysis	9056A		50			411440	03/02/17 02:00	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204434	03/02/17 14:15	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204539	03/03/17 10:29	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204432	03/02/17 14:10	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	204655	03/05/17 11:10	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	410312	02/24/17 12:29	CAH	TAL NSH
Total/NA	Analysis	7470A		1			410819	02/27/17 17:09	CAH	TAL NSH
Total/NA	Analysis	9040C		1			409452	02/21/17 15:12	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	409504	02/21/17 20:07	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.63 mL	1.0 g	294401	02/24/17 10:49	PJM	TAL SL
Total/NA	Analysis	903.0		1			298257	03/20/17 20:30	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.63 mL	1.0 g	294407	02/24/17 11:31	PJM	TAL SL
Total/NA	Analysis	904.0		1			297297	03/11/17 14:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 02/15/17 12:25
Date Received: 02/17/17 17:41

Lab Sample ID: 490-122187-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			411440	03/01/17 22:36	JHS	TAL NSH
Total/NA	Analysis	9056A		50			411440	03/02/17 04:00	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204434	03/02/17 14:15	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204539	03/03/17 10:34	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204432	03/02/17 14:10	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	204655	03/05/17 11:15	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	409955	02/23/17 12:08	CAH	TAL NSH
Total/NA	Analysis	7470A		1			410557	02/24/17 18:52	CAH	TAL NSH
Total/NA	Analysis	9040C		1			409452	02/21/17 15:12	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	409501	02/22/17 21:00	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.47 mL	1.0 g	294401	02/24/17 10:49	PJM	TAL SL
Total/NA	Analysis	903.0		1			298257	03/20/17 20:30	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.47 mL	1.0 g	294407	02/24/17 11:31	PJM	TAL SL
Total/NA	Analysis	904.0		1			297297	03/11/17 14:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Client Sample ID: MW-10

Date Collected: 02/17/17 10:55
Date Received: 02/18/17 11:24

Lab Sample ID: 490-122212-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			411167	02/28/17 23:31	KS	TAL NSH
Total/NA	Analysis	9056A		100			411167	03/01/17 03:06	KS	TAL NSH
Total/NA	Analysis	9056A		5			411487	03/01/17 19:27	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204434	03/02/17 14:15	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204539	03/03/17 11:38	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204432	03/02/17 14:10	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	204655	03/05/17 12:20	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	410568	02/27/17 08:05	CAH	TAL NSH
Total/NA	Analysis	7470A		1			410819	02/27/17 14:59	CAH	TAL NSH
Total/NA	Analysis	9040C		1			409452	02/21/17 15:12	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	410025	02/23/17 19:50	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.61 mL	1.0 g	294401	02/24/17 10:49	PJM	TAL SL
Total/NA	Analysis	903.0		1			298257	03/20/17 20:31	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.61 mL	1.0 g	294407	02/24/17 11:31	PJM	TAL SL
Total/NA	Analysis	904.0		1			297297	03/11/17 14:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: Field Blank

Date Collected: 02/17/17 15:30
Date Received: 02/18/17 11:24

Lab Sample ID: 490-122212-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			411167	03/01/17 00:07	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204434	03/02/17 14:15	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204539	03/03/17 11:43	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204432	03/02/17 14:10	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	204655	03/05/17 12:25	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	410568	02/27/17 08:05	CAH	TAL NSH
Total/NA	Analysis	7470A		1			410819	02/27/17 15:02	CAH	TAL NSH
Total/NA	Analysis	9040C		1			409455	02/21/17 15:18	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	410025	02/23/17 19:50	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.50 mL	1.0 g	294401	02/24/17 10:49	PJM	TAL SL
Total/NA	Analysis	903.0		1			298257	03/20/17 20:31	MLK	TAL SL
Total/NA	Prep	PrecSep_0			999.50 mL	1.0 g	294407	02/24/17 11:31	PJM	TAL SL
Total/NA	Analysis	904.0		1			297297	03/11/17 14:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
9040C		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

490-122187 Chain of Custody

Cooler Received/Opened On 2/17/2017 @ 940

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 2604 (last 4 digits, FedEx) Courier: Fed Ex

IR Gun ID 31470366 pH Strip Lot HC581117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 0.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) EA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) EA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) EA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) EA

I certify that I attached a label with the unique LIMS number to each container (intial) EA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Loc: 490
122187

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 2/17/2017 @ 900

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 5005 (last 4 digits, FedEx) Courier: _Fed Ex_

IR Gun ID__31470366_____ pH Strip Lot_HC581117_ Chlorine Strip Lot_71130_

2. Temperature of rep. sample or temp blank when opened: 0.5 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) EM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES..NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) EM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) EM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) EM

I certify that I attached a label with the unique LIMS number to each container (intial) EM

21. Were there Non-Conformance issues at login? YES..NO Was a NCM generated? YES..NO...#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
122187
#1
A

Cooler Received/Opened On 02-17-2017 @ 09:40

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 3480 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 14740456 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 1.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO (NA)

4. Were custody seals on outside of cooler? (YES)..NO...NA

If yes, how many and where: 1(front) +1(rear)

5. Were the seals intact, signed, and dated correctly? (YES)..NO...NA

6. Were custody papers inside cooler? YES..(NO)...NA

I certify that I opened the cooler and answered questions 1-6 (initial) KD

7. Were custody seals on containers: YES (NO) and Intact YES...NO..(NA)

Were these signed and dated correctly? YES...NO..(NA)

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other (None)

9. Cooling process: Ice Ice-pack (Ice (direct contact)) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)...NO...NA

12. Did all container labels and tags agree with custody papers? (YES)..NO...NA

13a. Were VOA vials received? YES..(NO)...NA

b. Was there any observable headspace present in any VOA vial? YES...NO..(NA)

14. Was there a Trip Blank in this cooler? YES..(NO)...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (initial) EM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..(NA)

b. Did the bottle labels indicate that the correct preservatives were used (YES)..NO...NA

16. Was residual chlorine present? YES...NO..(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) EM

17. Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) EM

I certify that I attached a label with the unique LIMS number to each container (initial) EM

21. Were there Non-Conformance issues at login? YES..(NO) Was a NCM generated? YES..(NO)...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 2/16/2017**	COC No: 490-62476-18051.1
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**	___1___ of ___1___ COCs
Address: PO Box 24	**Analysis Turnaround Time**			Sampler: Greg Dick
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(270) 844-6000 Phone	TAT if different from Below _____			Walk-in Client:
(xxx) xxx-xxxx FAX	☑ 2 weeks			Lab Sampling:
Project Name: WL CCR Groundwater-Round 5	☐ 1 week			
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days			Job / SDG No.:
P O #: Purchase Order-see DOCs	☐ 1 day			

Loc: 490
122187

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-1	2/15/17	1100	G	Water	6	N	N	x	x	x	x	
MW-5	2/15/17	1340	G	Water	6	N	N	x	x	x	x	
MW-6	2/15/17	1525	G	Water	6	N	N	x	x	x	x	
MW-7	2/15/17	1630	G	Water	6	N	N	x	x	x	x	
MW-8	2/15/17	1225	G	Water	6	N	N	x	x	x	x	
DUPE	2/15/17	1115	G	Water	6	N	N	x	x	x	x	

Greg Dick

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None — 4 | 4 | 1 | 1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations). See attached constituent list for analysis.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 1645 2/16/2017	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TAN	Date/Time: 2-17-17 940

0.4, 0.5, 1.7

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

158470-434 RIT2 EXP 12/17

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 21FEB17
ACTWGT: 10.0 LB MAN
CAD: 820425/CAFE2915
BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490-64830

FedEx Express

WED - 22 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7235 6086 2812

EV AGCA

15238
PA-US PIT

Uncorrected temp 4.3 °C
Thermometer ID 9
CF 0 Initials TB

PT-WI-SR-001 effective 7/26/13

Temperature

FedEx

490-122187 Waybill

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-122187 Chain of Custody

stAmerica
ADER IN ENVIRONMENTAL TESTING

890.1

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Kentucky
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Page 1 of 1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 3/1/2017		Job #: 490-122187-1
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: WL CCR Groundwater-Round 5	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-122187-1)	2/15/17	11:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-122187-2)	2/15/17	13:40 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-122187-3)	2/15/17	15:25 Central		Water			X	X	1	Metals - run once, upload together.
MW-7 (490-122187-4)	2/15/17	16:30 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-122187-5)	2/15/17	12:25 Central		Water			X	X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:			
Relinquished by: Billy Barnes	Date/Time: 2-21-17 1320	Company: TAN	Received by:	Date/Time: 2/22/17 900	Company: TAN		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-53892.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-122187-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 3/1/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 5	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3006A (MOD) Lithium	6020A/3006A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
DUPE (490-122187-6)	2/15/17	11:15 Central		Water			X	X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Billy Barnes	Date/Time: 2-21-17 1320	Company: TAN	Received by:	Date/Time: 2/22/17 900	Company: TAN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-122187-1
SDG Number: Wilson Station, Wilson Landfill

Login Number: 122187
List Number: 1
Creator: Abernathy, Eric

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-122187-1
SDG Number: Wilson Station, Wilson Landfill

Login Number: 122187
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 02/22/17 11:20 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 5

TestAmerica Job ID: 490-122187-1
SDG: Wilson Station, Wilson Landfill

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-122187-2	MW-5	89.1
490-122187-3	MW-6	87.3
490-122187-4	MW-7	69.6
490-122187-5	MW-8	78.2
490-122212-4	MW-10	86.1
490-122212-5	Field Blank	91.2

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-122187-2	MW-5	89.1	79.3
490-122187-3	MW-6	87.3	84.5
490-122187-4	MW-7	69.6	85.6
490-122187-5	MW-8	78.2	81.9
490-122212-4	MW-10	86.1	83.4
490-122212-5	Field Blank	91.2	83.7

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-129050-1
TestAmerica SDG: Wilson Station, Wilson Landfill (WL)
Client Project/Site: WL CCR Groundwater-Round 6
Revision: 1

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:
1/31/2018 2:43:13 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

LINKS

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Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-129050-5	MW-5	Water	05/17/17 14:05	05/20/17 09:35
490-129050-6	MW-6	Water	05/18/17 12:00	05/20/17 09:35
490-129050-7	MW-7	Water	05/18/17 13:40	05/20/17 09:35
490-129050-8	MW-8	Water	05/17/17 12:55	05/20/17 09:35
490-129050-9	MW-10	Water	05/18/17 14:55	05/20/17 09:35
490-129050-11	Field Blank	Water	05/19/17 13:25	05/20/17 09:35

Job ID: 490-129050-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-129050-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 5/20/2017 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were -0.2º C, 0.9º C, 1.1º C, 2.8º C and 3.0º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-433481 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-433779 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-5 (490-129050-5), MW-6 (490-129050-6), MW-7 (490-129050-7), MW-8 (490-129050-8), and MW-10 (490-129050-9). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-433781 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 05/17/17 14:05
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	169	B	60.0	4.00	mg/L			05/31/17 00:18	20
Fluoride	0.104	J	1.00	0.0100	mg/L			05/26/17 20:50	1
Sulfate	1530		1000	6.00	mg/L			05/31/17 00:36	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0420	J	0.0500	0.00959	mg/L		06/02/17 18:58	06/05/17 19:21	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000320	J B	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 04:11	1
Arsenic	0.00432	J B	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 04:11	1
Barium	0.0160	J	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 04:11	1
Beryllium	0.000105	J	0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 04:11	1
Boron	0.981	J B	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 04:11	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 04:11	1
Calcium	514	B	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 04:11	1
Chromium	0.00114	J	0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 04:11	1
Cobalt	0.00570		0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 04:11	1
Lead	0.00158	J	0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 04:11	1
Molybdenum	0.00491	J	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 04:11	1
Selenium	0.00132	J B	0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 04:11	1
Thallium	0.0000600	J	0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 04:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/25/17 10:39	05/25/17 18:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.16		0.100	0.100	SU			05/24/17 19:50	1
Temperature	21.8		0.100	0.100	Degrees C			05/24/17 19:50	1
Total Dissolved Solids	3100		20.0	14.0	mg/L			05/24/17 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.163		0.0753	0.0767	1.00	0.0763	pCi/L	05/25/17 14:47	06/20/17 08:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:18*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.804		0.263	0.273	1.00	0.348	pCi/L	05/26/17 09:34	06/09/17 10:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:27*	*1*

Client Sample ID: MW-5

Date Collected: 05/17/17 14:05
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-5

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.1		40 - 110	05/26/17 09:34	06/09/17 10:27	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.967		0.274	0.284	5.00	0.348	pCi/L		06/21/17 14:28	1

Client Sample ID: MW-6

Date Collected: 05/18/17 12:00
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.37**	**B**	3.00	0.200	mg/L			05/26/17 21:08	1
Fluoride	**0.127**	**J**	1.00	0.0100	mg/L			05/26/17 21:08	1
Sulfate	**1570**		1000	6.00	mg/L			05/31/17 00:54	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0455**	**J**	0.0500	0.00959	mg/L		06/02/17 18:58	06/05/17 19:27	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000320**	**J B**	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 04:15	1
Arsenic	**0.00673**	**B**	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 04:15	1
Barium	**0.0105**	**J**	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 04:15	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 04:15	1
Boron	**0.265**	**J B**	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 04:15	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 04:15	1
Calcium	**490**	**B**	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 04:15	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 04:15	1
Cobalt	**0.00590**		0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 04:15	1
Lead	**0.000268**	**J**	0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 04:15	1
Molybdenum	**0.00772**	**J**	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 04:15	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 04:15	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 04:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/25/17 10:39	05/25/17 18:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.54**		0.100	0.100	SU			05/24/17 19:50	1
Temperature	**21.8**		0.100	0.100	Degrees C			05/24/17 19:50	1
Total Dissolved Solids	**2820**		20.0	14.0	mg/L			05/25/17 23:12	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.257**		0.102	0.105	1.00	0.113	pCi/L	05/25/17 14:47	06/20/17 08:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:18*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.635**		0.255	0.262	1.00	0.356	pCi/L	05/26/17 09:34	06/09/17 10:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:27*	*1*

Client Sample ID: MW-6
Date Collected: 05/18/17 12:00
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-6
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.0		40 - 110	05/26/17 09:34	06/09/17 10:27	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.892		0.275	0.282	5.00	0.356	pCi/L		06/21/17 14:28	1

Client Sample ID: MW-7

Date Collected: 05/18/17 13:40
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.91	B	3.00	0.200	mg/L			05/26/17 21:26	1
Fluoride	0.242	J	1.00	0.0100	mg/L			05/26/17 21:26	1
Sulfate	877		500	3.00	mg/L			05/31/17 01:12	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0277	J	0.0500	0.00959	mg/L		06/02/17 18:58	06/05/17 19:32	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000294	J B	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 04:20	1
Arsenic	0.00226	J B	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 04:20	1
Barium	0.0152	J	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 04:20	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 04:20	1
Boron	0.232	J B	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 04:20	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 04:20	1
Calcium	273	B	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 04:20	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 04:20	1
Cobalt	0.00358	J	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 04:20	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 04:20	1
Molybdenum	0.00292	J	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 04:20	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 04:20	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 04:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/29/17 10:40	05/31/17 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.64		0.100	0.100	SU			05/24/17 19:50	1
Temperature	21.7		0.100	0.100	Degrees C			05/24/17 19:50	1
Total Dissolved Solids	1550		10.0	7.00	mg/L			05/25/17 23:12	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.195		0.0844	0.0862	1.00	0.0764	pCi/L	05/25/17 14:47	06/20/17 08:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:18*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.622		0.232	0.239	1.00	0.306	pCi/L	05/26/17 09:34	06/09/17 10:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:27*	*1*

Client Sample ID: MW-7
Date Collected: 05/18/17 13:40
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-7
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.2		40 - 110	05/26/17 09:34	06/09/17 10:27	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.817		0.247	0.254	5.00	0.306	pCi/L		06/21/17 14:28	1

Client Sample ID: MW-8

Date Collected: 05/17/17 12:55
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.19**	**B**	3.00	0.200	mg/L			05/26/17 21:44	1
Fluoride	**0.234**	**J**	1.00	0.0100	mg/L			05/26/17 21:44	1
Sulfate	**877**		500	3.00	mg/L			05/31/17 02:05	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0103**	**J**	0.0500	0.00959	mg/L		06/02/17 18:58	06/05/17 19:37	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000236**	**J B**	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 04:25	1
Arsenic	**0.00720**	**B**	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 04:25	1
Barium	**0.0208**	**J**	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 04:25	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 04:25	1
Boron	**0.0360**	**J B**	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 04:25	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 04:25	1
Calcium	**225**	**B**	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 04:25	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 04:25	1
Cobalt	**0.000739**	**J**	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 04:25	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 04:25	1
Molybdenum	**0.0137**		0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 04:25	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 04:25	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 04:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/29/17 10:40	05/31/17 20:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.41**		0.100	0.100	SU			05/24/17 19:50	1
Temperature	**21.8**		0.100	0.100	Degrees C			05/24/17 19:50	1
Total Dissolved Solids	**1560**		10.0	7.00	mg/L			05/24/17 18:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.512**		0.123	0.131	1.00	0.101	pCi/L	05/25/17 14:47	06/20/17 08:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.554**		0.209	0.215	1.00	0.279	pCi/L	05/26/17 09:34	06/09/17 10:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:27*	*1*

Client Sample ID: MW-8
Date Collected: 05/17/17 12:55
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-8
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.9		40 - 110	05/26/17 09:34	06/09/17 10:27	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07		0.242	0.252	5.00	0.279	pCi/L		06/21/17 14:28	1

Client Sample ID: MW-10

Date Collected: 05/18/17 14:55
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**47.4**	**B**	15.0	1.00	mg/L			05/31/17 02:23	5
Fluoride	**0.100**	**J**	1.00	0.0100	mg/L			05/26/17 22:02	1
Sulfate	**2070**		1000	6.00	mg/L			05/31/17 02:41	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0109**	**J**	0.0500	0.00959	mg/L		06/02/17 18:58	06/05/17 19:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000288**	**J B**	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 04:29	1
Arsenic	**0.00108**	**J B**	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 04:29	1
Barium	**0.00775**	**J**	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 04:29	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 04:29	1
Boron	**0.163**	**J B**	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 04:29	1
Cadmium	**0.000186**	**J**	0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 04:29	1
Calcium	**390**	**B**	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 04:29	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 04:29	1
Cobalt	**0.0602**		0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 04:29	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 04:29	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 04:29	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 04:29	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 04:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/29/17 10:40	05/31/17 20:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.97**		0.100	0.100	SU			05/24/17 19:50	1
Temperature	**21.9**		0.100	0.100	Degrees C			05/24/17 19:50	1
Total Dissolved Solids	**3240**		20.0	14.0	mg/L			05/25/17 23:12	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0774	U	0.0687	0.0690	1.00	0.105	pCi/L	05/25/17 14:47	06/20/17 08:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.306	U	0.240	0.242	1.00	0.381	pCi/L	05/26/17 09:34	06/09/17 10:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:28*	*1*

Client Sample ID: MW-10

Date Collected: 05/18/17 14:55
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-9

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.5		40 - 110	05/26/17 09:34	06/09/17 10:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.384		0.250	0.252	5.00	0.381	pCi/L		06/21/17 14:28	1

Client Sample ID: Field Blank

Date Collected: 05/19/17 13:25
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.338**	**J B**	3.00	0.200	mg/L			05/26/17 22:38	1
Fluoride	ND		1.00	0.0100	mg/L			05/26/17 22:38	1
Sulfate	**0.609**	**J**	5.00	0.0300	mg/L			05/26/17 22:38	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/02/17 18:56	06/06/17 16:31	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000217**	**J B**	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 04:38	1
Arsenic	**0.000359**	**J B**	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 04:38	1
Barium	ND		0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 04:38	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 04:38	1
Boron	**0.00553**	**J B**	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 04:38	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 04:38	1
Calcium	**0.0717**	**J B**	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 04:38	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 04:38	1
Cobalt	ND		0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 04:38	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 04:38	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 04:38	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 04:38	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 04:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/29/17 10:40	05/31/17 20:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.94**		0.100	0.100	SU			05/24/17 19:58	1
Temperature	**21.9**		0.100	0.100	Degrees C			05/24/17 19:58	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/24/17 21:12	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.000653	U	0.0454	0.0454	1.00	0.0946	pCi/L	05/25/17 14:47	06/20/17 08:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:19*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00407	U	0.176	0.176	1.00	0.320	pCi/L	05/26/17 09:34	06/09/17 10:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:28*	*1*

Client Sample ID: Field Blank

Date Collected: 05/19/17 13:25
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-11

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*81.1*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:28*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.00472	U	0.181	0.181	5.00	0.320	pCi/L		06/21/17 14:28	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-433481/3
Matrix: Water
Analysis Batch: 433481

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4682	J	3.00	0.200	mg/L			05/26/17 15:25	1
Fluoride	ND		1.00	0.0100	mg/L			05/26/17 15:25	1
Sulfate	ND		5.00	0.0300	mg/L			05/26/17 15:25	1

Lab Sample ID: LCS 490-433481/4
Matrix: Water
Analysis Batch: 433481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.944		mg/L		99	80 - 120
Fluoride	1.00	0.9722	J	mg/L		97	80 - 120
Sulfate	10.0	9.880		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-433481/5
Matrix: Water
Analysis Batch: 433481

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.00		mg/L		100	80 - 120	1	20
Fluoride	1.00	1.013		mg/L		101	80 - 120	4	20
Sulfate	10.0	9.869		mg/L		99	80 - 120	0	20

Lab Sample ID: MB 490-433779/3
Matrix: Water
Analysis Batch: 433779

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4039	J	3.00	0.200	mg/L			05/30/17 21:37	1
Fluoride	0.02132	J	1.00	0.0100	mg/L			05/30/17 21:37	1
Sulfate	ND		5.00	0.0300	mg/L			05/30/17 21:37	1

Lab Sample ID: LCS 490-433779/4
Matrix: Water
Analysis Batch: 433779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.05		mg/L		101	80 - 120
Fluoride	1.00	0.9525	J	mg/L		95	80 - 120
Sulfate	10.0	9.819		mg/L		98	80 - 120

Lab Sample ID: LCSD 490-433779/5
Matrix: Water
Analysis Batch: 433779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.09		mg/L		101	80 - 120	0	20
Fluoride	1.00	0.9564	J	mg/L		96	80 - 120	0	20
Sulfate	10.0	9.894		mg/L		99	80 - 120	1	20

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 490-433781/3
Matrix: Water
Analysis Batch: 433781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3776	J	3.00	0.200	mg/L			05/31/17 05:58	1
Fluoride	0.02061	J	1.00	0.0100	mg/L			05/31/17 05:58	1
Sulfate	ND		5.00	0.0300	mg/L			05/31/17 05:58	1

Lab Sample ID: LCS 490-433781/4
Matrix: Water
Analysis Batch: 433781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.237		mg/L		92	80 - 120
Fluoride	1.00	0.9256	J	mg/L		93	80 - 120
Sulfate	10.0	9.096		mg/L		91	80 - 120

Lab Sample ID: LCSD 490-433781/5
Matrix: Water
Analysis Batch: 433781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	8.990		mg/L		90	80 - 120	3	20
Fluoride	1.00	0.9108	J	mg/L		91	80 - 120	2	20
Sulfate	10.0	8.854		mg/L		89	80 - 120	3	20

Lab Sample ID: 490-129473-G-6 MS
Matrix: Water
Analysis Batch: 433781

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	32.5	J B F1	100	109.1	J F1	mg/L		77	80 - 120
Fluoride	1.51	J B F1	10.0	9.480	J	mg/L		80	80 - 120
Sulfate	4.50	J	100	97.61	J	mg/L		93	80 - 120

Lab Sample ID: 490-129473-G-6 MSD
Matrix: Water
Analysis Batch: 433781

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	32.5	J B F1	100	110.7	J F1	mg/L		78	80 - 120	1	20
Fluoride	1.51	J B F1	10.0	9.421	J F1	mg/L		79	80 - 120	1	20
Sulfate	4.50	J	100	97.60	J	mg/L		93	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-213099/1-A
Matrix: Water
Analysis Batch: 213429

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 213099

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/02/17 18:56	06/06/17 15:54	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-213099/2-A
Matrix: Water
Analysis Batch: 213429

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 213099

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.016		mg/L		102	80 - 120

Lab Sample ID: 180-66205-G-1-A MS ^10
Matrix: Water
Analysis Batch: 213429

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 213099

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.106	J	1.00	1.094		mg/L		99	75 - 125

Lab Sample ID: 180-66205-G-1-B MSD ^10
Matrix: Water
Analysis Batch: 213429

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 213099

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.106	J	1.00	1.088		mg/L		98	75 - 125	1	20

Lab Sample ID: MB 180-213100/1-A
Matrix: Water
Analysis Batch: 213305

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 213100

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/02/17 18:58	06/05/17 18:00	1

Lab Sample ID: LCS 180-213100/2-A
Matrix: Water
Analysis Batch: 213305

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 213100

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9998		mg/L		100	80 - 120

Lab Sample ID: 180-66686-D-2-B MS
Matrix: Water
Analysis Batch: 213305

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 213100

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0741		1.00	1.148		mg/L		107	75 - 125

Lab Sample ID: 180-66686-D-2-C MSD
Matrix: Water
Analysis Batch: 213305

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 213100

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0741		1.00	1.144		mg/L		107	75 - 125	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-213518/1-A
Matrix: Water
Analysis Batch: 214690

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 213518

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.001915	J	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 02:38	1
Arsenic	0.0002980	J	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 02:38	1
Barium	ND		0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 02:38	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 02:38	1
Boron	0.03584	J	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 02:38	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 02:38	1
Calcium	0.05889	J	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 02:38	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 02:38	1
Cobalt	ND		0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 02:38	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 02:38	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 02:38	1
Selenium	0.0004360	J	0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 02:38	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 02:38	1

Lab Sample ID: LCS 180-213518/2-A
Matrix: Water
Analysis Batch: 214690

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 213518

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5283		mg/L		106	80 - 120
Arsenic	0.0400	0.04162		mg/L		104	80 - 120
Barium	2.00	1.933		mg/L		97	80 - 120
Beryllium	0.0500	0.05347		mg/L		107	80 - 120
Boron	1.00	1.070		mg/L		107	80 - 120
Cadmium	0.0500	0.05253		mg/L		105	80 - 120
Calcium	50.0	50.13		mg/L		100	80 - 120
Chromium	0.200	0.1635		mg/L		82	80 - 120
Cobalt	0.500	0.4570		mg/L		91	80 - 120
Molybdenum	1.00	1.063		mg/L		106	80 - 120
Selenium	0.0100	0.01181		mg/L		118	80 - 120

Lab Sample ID: 490-127756-F-1-C MS
Matrix: Water
Analysis Batch: 214690

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 213518

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00133	J B	0.500	0.5065		mg/L		101	75 - 125
Arsenic	0.00291	J B	0.0400	0.03837		mg/L		89	75 - 125
Barium	0.0395	J	2.00	2.002		mg/L		98	75 - 125
Beryllium	ND		0.0500	0.05360		mg/L		107	75 - 125
Boron	0.754	J B	1.00	1.705		mg/L		95	75 - 125
Cadmium	ND		0.0500	0.04779		mg/L		96	75 - 125
Calcium	326	B	50.0	355.7	4	mg/L		60	75 - 125
Chromium	ND		0.200	0.1532		mg/L		77	75 - 125
Cobalt	0.00129	J	0.500	0.3921		mg/L		78	75 - 125
Lead	ND		0.0200	0.02115		mg/L		106	75 - 125
Molybdenum	0.00148	J	1.00	1.034		mg/L		103	75 - 125
Selenium	0.000369	J B	0.0100	0.01045		mg/L		101	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-127756-F-1-C MS
Matrix: Water
Analysis Batch: 214690

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 213518

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	0.0000390	J	0.0500	0.05183		mg/L		104	75 - 125

Lab Sample ID: 490-127756-F-1-D MSD
Matrix: Water
Analysis Batch: 214690

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 213518

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00133	J B	0.500	0.5148		mg/L		103	75 - 125	2	20
Arsenic	0.00291	J B	0.0400	0.03979		mg/L		92	75 - 125	4	20
Barium	0.0395	J	2.00	1.966		mg/L		96	75 - 125	2	20
Beryllium	ND		0.0500	0.05198		mg/L		104	75 - 125	3	20
Boron	0.754	J B	1.00	1.705		mg/L		95	75 - 125	0	20
Cadmium	ND		0.0500	0.05000		mg/L		100	75 - 125	5	20
Calcium	326	B	50.0	363.9	4	mg/L		77	75 - 125	2	20
Chromium	ND		0.200	0.1545		mg/L		77	75 - 125	1	20
Cobalt	0.00129	J	0.500	0.4042		mg/L		81	75 - 125	3	20
Lead	ND		0.0200	0.02126		mg/L		106	75 - 125	1	20
Molybdenum	0.00148	J	1.00	1.062		mg/L		106	75 - 125	3	20
Selenium	0.000369	J B	0.0100	0.008800	J	mg/L		84	75 - 125	17	20
Thallium	0.0000390	J	0.0500	0.05272		mg/L		105	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-432803/1-A
Matrix: Water
Analysis Batch: 432994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432803

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/25/17 10:39	05/25/17 17:09	1

Lab Sample ID: LCS 490-432803/2-A
Matrix: Water
Analysis Batch: 432994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432803

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9812		ug/L		98	80 - 120

Lab Sample ID: 490-128996-J-2-B MS
Matrix: Water
Analysis Batch: 432994

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 432803

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.9574		ug/L		96	75 - 125

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 490-128996-J-2-C MSD
Matrix: Water
Analysis Batch: 432994

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 432803

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9686		ug/L		97	75 - 125	1	20

Lab Sample ID: MB 490-433429/1-A
Matrix: Water
Analysis Batch: 434330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 433429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/29/17 10:40	05/31/17 19:17	1

Lab Sample ID: LCS 490-433429/2-A
Matrix: Water
Analysis Batch: 434330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 433429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.046		ug/L		105	80 - 120

Lab Sample ID: 490-129455-R-3-B MS
Matrix: Water
Analysis Batch: 434330

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 433429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.059		ug/L		106	75 - 125

Lab Sample ID: 490-129455-R-3-C MSD
Matrix: Water
Analysis Batch: 434330

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 433429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9954		ug/L		100	75 - 125	6	20

Method: 9040C - pH

Lab Sample ID: LCS 490-432663/1
Matrix: Water
Analysis Batch: 432663

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.010		SU		100	98 - 103

Lab Sample ID: 490-129050-1 DU
Matrix: Water
Analysis Batch: 432663

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	5.83		5.830		SU		0	20
Temperature	21.6		21.60		Degrees C		0	20

Method: 9040C - pH (Continued)

Lab Sample ID: LCS 490-432665/1
Matrix: Water
Analysis Batch: 432665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.000		SU		100	98 - 103

Lab Sample ID: 490-129050-11 DU
Matrix: Water
Analysis Batch: 432665

Client Sample ID: Field Blank
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	5.94		5.940		SU		0	20
Temperature	21.9		21.90		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-432628/1
Matrix: Water
Analysis Batch: 432628

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/24/17 21:12	1

Lab Sample ID: LCS 490-432628/2
Matrix: Water
Analysis Batch: 432628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	96.00		mg/L		96	90 - 110

Lab Sample ID: LCSD 490-432628/3
Matrix: Water
Analysis Batch: 432628

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	99.00		mg/L		99	90 - 110	3	20

Lab Sample ID: 490-128876-K-1 DU
Matrix: Water
Analysis Batch: 432628

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	207		203.0		mg/L		2	20

Lab Sample ID: 490-128899-J-1 DU
Matrix: Water
Analysis Batch: 432628

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	146		151.0		mg/L		3	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 490-432636/1
Matrix: Water
Analysis Batch: 432636

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/24/17 18:45	1

Lab Sample ID: LCS 490-432636/2
Matrix: Water
Analysis Batch: 432636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	98.00		mg/L		98	90 - 110		

Lab Sample ID: 490-128939-L-2 DU
Matrix: Water
Analysis Batch: 432636

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	272			270.0		mg/L				0.7	20

Lab Sample ID: 490-129018-A-88 DU
Matrix: Water
Analysis Batch: 432636

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	100			112.0		mg/L				11	20

Lab Sample ID: MB 490-432999/1
Matrix: Water
Analysis Batch: 432999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/25/17 23:12	1

Lab Sample ID: LCS 490-432999/2
Matrix: Water
Analysis Batch: 432999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	99.00		mg/L		99	90 - 110		

Lab Sample ID: 490-129050-4 DU
Matrix: Water
Analysis Batch: 432999

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2630			2600		mg/L				1	20

Lab Sample ID: 490-129050-9 DU
Matrix: Water
Analysis Batch: 432999

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	3240			3304		mg/L				2	20

Lab Sample ID: MB 490-433179/1
Matrix: Water
Analysis Batch: 433179

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/26/17 16:06	1

Lab Sample ID: LCS 490-433179/2
Matrix: Water
Analysis Batch: 433179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	105.0		mg/L		105	90 - 110		

Lab Sample ID: LCSD 490-433179/3
Matrix: Water
Analysis Batch: 433179

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			100	106.0		mg/L		106	90 - 110	1	20

Lab Sample ID: 490-129153-A-1 DU
Matrix: Water
Analysis Batch: 433179

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	517			517.0		mg/L				0	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-310684/1-A
Matrix: Water
Analysis Batch: 314195

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310684

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.001258	U	0.0476	0.0476	1.00	0.0977	pCi/L	05/25/17 14:47	06/20/17 08:16	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*05/25/17 14:47*	*06/20/17 08:16*	*1*

Lab Sample ID: LCS 160-310684/2-A
Matrix: Water
Analysis Batch: 314195

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310684

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	8.960		0.932	1.00	0.0612	pCi/L	79	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*107*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 500-128504-D-1-B DU
Matrix: Water
Analysis Batch: 314195

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 310684

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.642			0.5771		0.135	1.00	0.0691	pCi/L			0.23	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*98.8*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-310835/1-A
Matrix: Water
Analysis Batch: 312650

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 310835

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3583	U	0.234	0.237	1.00	0.360	pCi/L	05/26/17 09:34	06/09/17 10:24	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:24*	*1*
Y Carrier	*75.1*		*40 - 110*	*05/26/17 09:34*	*06/09/17 10:24*	*1*

Lab Sample ID: LCS 160-310835/2-A
Matrix: Water
Analysis Batch: 312650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 310835

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.3	13.68		1.45	1.00	0.315	pCi/L	103	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*107*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Lab Sample ID: 500-128504-D-1-C DU
Matrix: Water
Analysis Batch: 312650

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 310835

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.565			0.2928	U	0.220	1.00	0.343	pCi/L			0.63	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*98.8*		*40 - 110*
Y Carrier	*85.6*		*40 - 110*

HPLC/IC

Analysis Batch: 433481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	9056A	
490-129050-6	MW-6	Total/NA	Water	9056A	
490-129050-7	MW-7	Total/NA	Water	9056A	
490-129050-8	MW-8	Total/NA	Water	9056A	
490-129050-9	MW-10	Total/NA	Water	9056A	
490-129050-11	Field Blank	Total/NA	Water	9056A	

Analysis Batch: 433779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	9056A	
490-129050-5	MW-5	Total/NA	Water	9056A	
490-129050-6	MW-6	Total/NA	Water	9056A	
490-129050-7	MW-7	Total/NA	Water	9056A	
490-129050-8	MW-8	Total/NA	Water	9056A	
490-129050-9	MW-10	Total/NA	Water	9056A	
490-129050-9	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 213099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-11	Field Blank	Total Recoverable	Water	3005A	

Prep Batch: 213100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total Recoverable	Water	3005A	
490-129050-6	MW-6	Total Recoverable	Water	3005A	
490-129050-7	MW-7	Total Recoverable	Water	3005A	
490-129050-8	MW-8	Total Recoverable	Water	3005A	
490-129050-9	MW-10	Total Recoverable	Water	3005A	

Analysis Batch: 213305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total Recoverable	Water	6010C	213100
490-129050-6	MW-6	Total Recoverable	Water	6010C	213100
490-129050-7	MW-7	Total Recoverable	Water	6010C	213100
490-129050-8	MW-8	Total Recoverable	Water	6010C	213100
490-129050-9	MW-10	Total Recoverable	Water	6010C	213100

Analysis Batch: 213429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-11	Field Blank	Total Recoverable	Water	6010C	213099

Prep Batch: 213518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total Recoverable	Water	3005A	
490-129050-6	MW-6	Total Recoverable	Water	3005A	
490-129050-7	MW-7	Total Recoverable	Water	3005A	
490-129050-8	MW-8	Total Recoverable	Water	3005A	
490-129050-9	MW-10	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 213518 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-11	Field Blank	Total Recoverable	Water	3005A	

Analysis Batch: 214690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total Recoverable	Water	6020A	213518
490-129050-6	MW-6	Total Recoverable	Water	6020A	213518
490-129050-7	MW-7	Total Recoverable	Water	6020A	213518
490-129050-8	MW-8	Total Recoverable	Water	6020A	213518
490-129050-9	MW-10	Total Recoverable	Water	6020A	213518
490-129050-11	Field Blank	Total Recoverable	Water	6020A	213518

Prep Batch: 432803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	7470A	
490-129050-6	MW-6	Total/NA	Water	7470A	

Analysis Batch: 432994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	7470A	432803
490-129050-6	MW-6	Total/NA	Water	7470A	432803

Prep Batch: 433429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-7	MW-7	Total/NA	Water	7470A	
490-129050-8	MW-8	Total/NA	Water	7470A	
490-129050-9	MW-10	Total/NA	Water	7470A	
490-129050-11	Field Blank	Total/NA	Water	7470A	

Analysis Batch: 434330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-7	MW-7	Total/NA	Water	7470A	433429
490-129050-8	MW-8	Total/NA	Water	7470A	433429
490-129050-9	MW-10	Total/NA	Water	7470A	433429
490-129050-11	Field Blank	Total/NA	Water	7470A	433429

General Chemistry

Analysis Batch: 432628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-11	Field Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 432636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	SM 2540C	
490-129050-8	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 432663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	9040C	
490-129050-6	MW-6	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 432663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-7	MW-7	Total/NA	Water	9040C	
490-129050-8	MW-8	Total/NA	Water	9040C	
490-129050-9	MW-10	Total/NA	Water	9040C	

Analysis Batch: 432665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-11	Field Blank	Total/NA	Water	9040C	

Analysis Batch: 432999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-6	MW-6	Total/NA	Water	SM 2540C	
490-129050-7	MW-7	Total/NA	Water	SM 2540C	
490-129050-9	MW-10	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 310684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	PrecSep-21	
490-129050-6	MW-6	Total/NA	Water	PrecSep-21	
490-129050-7	MW-7	Total/NA	Water	PrecSep-21	
490-129050-8	MW-8	Total/NA	Water	PrecSep-21	
490-129050-9	MW-10	Total/NA	Water	PrecSep-21	
490-129050-11	Field Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 310835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-129050-5	MW-5	Total/NA	Water	PrecSep_0	
490-129050-6	MW-6	Total/NA	Water	PrecSep_0	
490-129050-7	MW-7	Total/NA	Water	PrecSep_0	
490-129050-8	MW-8	Total/NA	Water	PrecSep_0	
490-129050-9	MW-10	Total/NA	Water	PrecSep_0	
490-129050-11	Field Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-5

Date Collected: 05/17/17 14:05
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			433481	05/26/17 20:50	NC	TAL NSH
Total/NA	Analysis	9056A		20			433779	05/31/17 00:18	JHS	TAL NSH
Total/NA	Analysis	9056A		200			433779	05/31/17 00:36	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213100	06/02/17 18:58	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213305	06/05/17 19:21	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	213518	06/07/17 14:54	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214690	06/16/17 04:11	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	432803	05/25/17 10:39	CAH	TAL NSH
Total/NA	Analysis	7470A		1			432994	05/25/17 18:07	CAH	TAL NSH
Total/NA	Analysis	9040C		1			432663	05/24/17 19:50	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	432636	05/24/17 18:45	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.10 mL	1.0 g	310684	05/25/17 14:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			314195	06/20/17 08:18	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.10 mL	1.0 g	310835	05/26/17 09:34	LDE	TAL SL
Total/NA	Analysis	904.0		1			312820	06/09/17 10:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314609	06/21/17 14:28	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 05/18/17 12:00
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			433481	05/26/17 21:08	NC	TAL NSH
Total/NA	Analysis	9056A		200			433779	05/31/17 00:54	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213100	06/02/17 18:58	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213305	06/05/17 19:27	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	213518	06/07/17 14:54	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214690	06/16/17 04:15	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	432803	05/25/17 10:39	CAH	TAL NSH
Total/NA	Analysis	7470A		1			432994	05/25/17 18:10	CAH	TAL NSH
Total/NA	Analysis	9040C		1			432663	05/24/17 19:50	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	432999	05/25/17 23:12	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.70 mL	1.0 g	310684	05/25/17 14:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			314195	06/20/17 08:18	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.70 mL	1.0 g	310835	05/26/17 09:34	LDE	TAL SL
Total/NA	Analysis	904.0		1			312820	06/09/17 10:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314609	06/21/17 14:28	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 05/18/17 13:40
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			433481	05/26/17 21:26	NC	TAL NSH
Total/NA	Analysis	9056A		100			433779	05/31/17 01:12	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213100	06/02/17 18:58	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213305	06/05/17 19:32	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	213518	06/07/17 14:54	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214690	06/16/17 04:20	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	433429	05/29/17 10:40	CAH	TAL NSH
Total/NA	Analysis	7470A		1			434330	05/31/17 20:10	CME	TAL NSH
Total/NA	Analysis	9040C		1			432663	05/24/17 19:50	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	432999	05/25/17 23:12	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.62 mL	1.0 g	310684	05/25/17 14:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			314195	06/20/17 08:18	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.62 mL	1.0 g	310835	05/26/17 09:34	LDE	TAL SL
Total/NA	Analysis	904.0		1			312820	06/09/17 10:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314609	06/21/17 14:28	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 05/17/17 12:55
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			433481	05/26/17 21:44	NC	TAL NSH
Total/NA	Analysis	9056A		100			433779	05/31/17 02:05	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213100	06/02/17 18:58	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213305	06/05/17 19:37	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	213518	06/07/17 14:54	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214690	06/16/17 04:25	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	433429	05/29/17 10:40	CAH	TAL NSH
Total/NA	Analysis	7470A		1			434330	05/31/17 20:12	CME	TAL NSH
Total/NA	Analysis	9040C		1			432663	05/24/17 19:50	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	432636	05/24/17 18:45	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.50 mL	1.0 g	310684	05/25/17 14:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			314194	06/20/17 08:19	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.50 mL	1.0 g	310835	05/26/17 09:34	LDE	TAL SL
Total/NA	Analysis	904.0		1			312820	06/09/17 10:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314609	06/21/17 14:28	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-10

Date Collected: 05/18/17 14:55
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			433481	05/26/17 22:02	NC	TAL NSH
Total/NA	Analysis	9056A		5			433779	05/31/17 02:23	JHS	TAL NSH
Total/NA	Analysis	9056A		200			433779	05/31/17 02:41	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213100	06/02/17 18:58	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213305	06/05/17 19:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	213518	06/07/17 14:54	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214690	06/16/17 04:29	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	433429	05/29/17 10:40	CAH	TAL NSH
Total/NA	Analysis	7470A		1			434330	05/31/17 20:15	CME	TAL NSH
Total/NA	Analysis	9040C		1			432663	05/24/17 19:50	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	432999	05/25/17 23:12	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.20 mL	1.0 g	310684	05/25/17 14:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			314194	06/20/17 08:19	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.20 mL	1.0 g	310835	05/26/17 09:34	LDE	TAL SL
Total/NA	Analysis	904.0		1			312820	06/09/17 10:28	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314609	06/21/17 14:28	RTM	TAL SL

Client Sample ID: Field Blank

Date Collected: 05/19/17 13:25
Date Received: 05/20/17 09:35

Lab Sample ID: 490-129050-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			433481	05/26/17 22:38	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213099	06/02/17 18:56	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213429	06/06/17 16:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	213518	06/07/17 14:54	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214690	06/16/17 04:38	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	433429	05/29/17 10:40	CAH	TAL NSH
Total/NA	Analysis	7470A		1			434330	05/31/17 20:20	CME	TAL NSH
Total/NA	Analysis	9040C		1			432665	05/24/17 19:58	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	432628	05/24/17 21:12	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.65 mL	1.0 g	310684	05/25/17 14:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			314194	06/20/17 08:19	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.65 mL	1.0 g	310835	05/26/17 09:34	LDE	TAL SL
Total/NA	Analysis	904.0		1			312820	06/09/17 10:28	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			314609	06/21/17 14:28	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
9040C		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-129050 Chain of Custody

Cooler Received/Opened On 05-20-2017 @ 09:35

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 6404 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 1.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) AOH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) AOH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) AOH

I certify that I attached a label with the unique LIMS number to each container (initial) AOH

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
129050

COOLER RECEIPT FORM

Cooler Received/Opened On 05-20-2017 @ 09:35

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 7378 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960358 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 0.9 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 on Front 1 on back

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) MM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) AOH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) AOH

I certify that I attached a label with the unique LIMS number to each container (initial) AOH

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

1/31/2018 (Rev. 1)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
129050

COOLER RECEIPT FORM

Cooler Received/Opened On 05-20-2017 @ 09:35

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 9746 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 3.0 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) AOH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) AOH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) AOH

I certify that I attached a label with the unique LIMS number to each container (initial) AOH

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
129050

COOLER RECEIPT FORM

Cooler Received/Opened On 05-20-2017 @ 09:35

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 4323 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17610176 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 2.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) AOH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) AOH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA AOH 5/20/17

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) AOH

I certify that I attached a label with the unique LIMS number to each container (initial) AOH

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
129050

COOLER RECEIPT FORM

Cooler Received/Opened On 5/20/2017 @ 0935

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 5342 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470366 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 0.2 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES (NO) NA

4. Were custody seals on outside of cooler? (YES) NO NA

If yes, how many and where: 2 front

5. Were the seals intact, signed, and dated correctly? (YES) NO NA

6. Were custody papers inside cooler? YES (NO) NA

I certify that I opened the cooler and answered questions 1-6 (intial) HG

7. Were custody seals on containers: YES (NO) and Intact YES NO (NA)

Were these signed and dated correctly? YES NO (NA)

8. Packing mat'l used? (Bubblewrap) Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES) NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES) NO NA

12. Did all container labels and tags agree with custody papers? (YES) NO NA

13a. Were VOA vials received? YES (NO) NA

b. Was there any observable headspace present in any VOA vial? YES NO (NA)

14. Was there a Trip Blank in this cooler? YES (NO) NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) AOH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? (YES) NO NA

b. Did the bottle labels indicate that the correct preservatives were used (YES) NO NA

16. Was residual chlorine present? YES (NO) NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? (YES) NO NA

18. Did you sign the custody papers in the appropriate place? (YES) NO NA

19. Were correct containers used for the analysis requested? (YES) NO NA

20. Was sufficient amount of sample sent in each container? (YES) NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) AOH

I certify that I attached a label with the unique LIMS number to each container (intial) AOH

21. Were there Non-Conformance issues at login? YES (NO) Was a NCM generated? YES (NO) #_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	Project Manager: Bradley Coyle	Site Contact: Greg Dick	Date: 5/19/2017
Company: Big Rivers Electric Corporation	Tel/Fax: (270) 844-6032	Lab Contact: Roxanne Cisneros	Carrier: FedEx
Address: PO Box 24	Analysis Turnaround Time		
City/State/Zip: Henderson, KY 42419	☐CALENDAR DAYS ☐WORKING DAYS		
(270) 844-6010 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: WL CCR Groundwater-Round 6/1st Semi-Annual	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-65880-17238.1
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	2320B-Carbonate & Bicarbonate Alk	Sample Specific Notes:
MW-1	5/17/2017	1140	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-2	5/19/2017	1225	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-3	5/19/2017	1040	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-4	5/18/2017	1715	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-5	5/17/2017	1405	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-6	5/18/2017	1200	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-7	5/18/2017	1340	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-8	5/17/2017	1255	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-10	5/18/2017	1455	G	Water	9	N	N	x	x	x	x	x	x	x	
DUPE	5/19/2017	1200	G	Water	9	N	N	x	x	x	x	x	x	x	
FIELD BLANK	5/19/2017	1325	G	Water	9	N	N	x	x	x	x	x	x	x	
Greg Dick															
								4	4	3	7	3	7	7	

Loc: 490
129050

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐Return to Client ☑Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations) and 401 KAR Chapter 45 (Kentucky Regulations). See attached constituent list for analysis.

Custody Seals Intact: ☐Yes ☐No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by: Greg Dick	Company: BREC	Date/Time: 5/19/2017 1530	Received by:	Company: FAN	Date/Time: 05/20/17 0935
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016

Page 42 of 53

1/31/2018 (Rev. 1)

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

BREC
5/19/2017
1530

Loc: 490
129050

401 KAR Chapter 45 (Semi-Annual Groundwater) Constituent List

The following list of constituents are required by 401 KAR Chapter 45 to be analyzed:

-Chloride
-Chemical oxygen demand
-Total dissolved solids
-Total organic carbon
-Specific conductance
-pH
-Copper
-Flouride
-Sulfate
-Antimony
-Arsenic
-Barium
-Beryllium
-Boron
-Cadmium
-Calcium
-Chromium
-Cobalt
-Lead
-Lithium
-Mercury
-Molybdenum
-Selenium
-Thallium
-Temperature
-Nickel
-Zinc
-Iron
-Sodium
-Magnesium
-Potassium
-Bicarbonate
-Carbonate

Loc: 490
129050

Jay Dick
BREC
5/19/2017
1530

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 22MAY17
ACTWGT: 10.00 LB MAN
CAD: 820425/CAFE3011

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490-68863

490-129050 Waybill

FedEx Express

TRK# 0201 7346 1356 9560

TUE - 23 MAY 10:30A
PRIORITY OVERNIGHT

EV AGCA

15238
PA-US PIT

TestAm
THE LEADER IN ENVIR

Uncorrected temp 16.0 °C
Thermometer ID 12
CF 0 Initials TB

No Ice

Signed

PT-WI-SR-001 effective 7/26/13

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-129050 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		No: 57708.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-129050-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/2/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 6/1st Semi Annu	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-129050-1)	5/17/17	11:40 Central		Water			X	X	2	Historical Review required
MW-2 (490-129050-2)	5/19/17	12:25 Central		Water			X	X	2	Historical Review required
MW-3 (490-129050-3)	5/19/17	10:40 Central		Water			X	X	2	Historical Review required
MW-4 (490-129050-4)	5/18/17	17:15 Central		Water			X	X	2	Historical Review required
MW-5 (490-129050-5)	5/17/17	14:05 Central		Water			X	X	2	Historical Review required
MW-6 (490-129050-6)	5/18/17	12:00 Central		Water			X	X	2	Historical Review required
MW-7 (490-129050-7)	5/18/17	13:40 Central		Water			X	X	2	Historical Review required
MW-8 (490-129050-8)	5/17/17	12:55 Central		Water			X	X	2	Historical Review required
MW-10 (490-129050-9)	5/18/17	14:55 Central		Water			X	X	2	Historical Review required

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: Jeff Clarke	Date/Time: 5-23-17 0745	Company TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-57708.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-129050-1
Address: 13715 Rider Trail North,	Due Date Requested: 6/2/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 6/1st Semi Annu	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
DUPE (490-129050-10)	5/19/17	12:00 Central		Water			X	X	2	Historical Review required
Field Blank (490-129050-11)	5/19/17	13:25 Central		Water			X	X	2	Historical Review required

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1				Jeff Clarke	5.23.17 0745	TAST
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-129050 Chain of Custody

estAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	No: -57716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Page: Page 1 of 2
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 6/2/2017		Job #: 490-129050-1
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: WL CCR Groundwater-Round 6/1st Semi Annu	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-129050-1)	5/17/17	11:40 Central		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-129050-2)	5/19/17	12:25 Central		Water			X	X	1	Metals - run once, upload together.
MW-3 (490-129050-3)	5/19/17	10:40 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-129050-4)	5/18/17	17:15 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-129050-5)	5/17/17	14:05 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-129050-6)	5/18/17	12:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-7 (490-129050-7)	5/18/17	13:40 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-129050-8)	5/17/17	12:55 Central		Water			X	X	1	Metals - run once, upload together.
MW-10 (490-129050-9)	5/18/17	14:55 Central		Water			X	X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5.22.17	Company: TAL	Received by:	Date/Time: 5-23-17 7:10	Company: TAL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-57716.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-129050-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 6/2/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 6/1st Semi Annu	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
DUPE (490-129050-10)	5/19/17	12:00 Central		Water			X	X	1	Metals - run once, upload together.
Field Blank (490-129050-11)	5/19/17	13:25 Central		Water			X	X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5.22.17	TAL	PW Eaton	5-23-17	TAP
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:10	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-129050-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 129050
List Number: 1
Creator: Huskey, Adam

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-129050-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 129050
List Number: 3
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 05/23/17 01:08 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-129050-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 129050
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 05/23/17 11:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	20.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 6

TestAmerica Job ID: 490-129050-1
SDG: Wilson Station, Wilson Landfill (WL)

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-129050-5	MW-5	96.2
490-129050-6	MW-6	94.4
490-129050-7	MW-7	92.6
490-129050-8	MW-8	99.7
490-129050-9	MW-10	92.6
490-129050-11	Field Blank	97.9

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-129050-5	MW-5	96.2	84.1
490-129050-6	MW-6	94.4	83.0
490-129050-7	MW-7	92.6	85.2
490-129050-8	MW-8	99.7	87.9
490-129050-9	MW-10	92.6	84.5
490-129050-11	Field Blank	97.9	81.1

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-134967-1
TestAmerica SDG: Wilson Station, Wilson Landfill (WL)
Client Project/Site: WL CCR Groundwater-Round 7
Sampling Event: Big Rivers CCR/SemiAnnual GW
Revision: 2

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 3:30:51 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-134967-2	MW-5	Water	08/16/17 11:10	08/18/17 09:35
490-134967-3	MW-6	Water	08/16/17 13:05	08/18/17 09:35
490-134967-4	MW-7	Water	08/16/17 14:38	08/18/17 09:35
490-134967-5	MW-8	Water	08/15/17 13:45	08/18/17 09:35
490-135088-4	MW-10	Water	08/18/17 13:45	08/22/17 15:47
490-135088-6	FIELD BLANK	Water	08/18/17 18:50	08/22/17 15:47

Job ID: 490-134967-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-134967-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 8/18/2017 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.6º C and 3.0º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-455214 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-455650 contained Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-455650 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-5 (490-134967-2), MW-6 (490-134967-3), MW-7 (490-134967-4) and MW-8 (490-134967-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 490-135088-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-135088-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 8/22/2017 3:47 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 1.2º C.

Job ID: 490-135088-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received as there was no relinquish time listed on the COC.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-455214 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-455650 contained Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The following sample was diluted due to the nature of the sample matrix: MW-10 (490-135088-4) and DUPE (490-135088-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-455650 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
Method(s) PrecSep_0: Radium 228 Prep Batch 160-327146: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. FIELD BLANK (490-135088-6)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-327146: The following sample was reduced due to limited because or re analysis. FIELD BLANK (490-135088-6)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 08/16/17 11:10
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		30.0	2.00	mg/L			08/26/17 16:52	10
Fluoride	0.109	J B	1.00	0.0100	mg/L			08/26/17 03:03	1
Sulfate	2040	B	500	3.00	mg/L			08/26/17 17:14	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0489	J	0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 17:39	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000199	J B	0.00200	0.0000213	mg/L		09/12/17 08:03	09/13/17 00:45	1
Arsenic	0.00289	J	0.00500	0.000118	mg/L		09/12/17 08:03	09/13/17 00:45	1
Barium	0.0121	J	0.200	0.000270	mg/L		09/12/17 08:03	09/13/17 00:45	1
Beryllium	0.000133	J	0.00200	0.000102	mg/L		09/12/17 08:03	09/13/17 00:45	1
Boron	1.17		1.00	0.00339	mg/L		09/12/17 08:03	09/13/17 00:45	1
Cadmium	ND		0.00100	0.000152	mg/L		09/12/17 08:03	09/13/17 00:45	1
Calcium	480		1.00	0.0412	mg/L		09/12/17 08:03	09/13/17 00:45	1
Chromium	0.000578	J	0.00300	0.000339	mg/L		09/12/17 08:03	09/13/17 00:45	1
Cobalt	0.00487	J	0.00500	0.0000218	mg/L		09/12/17 08:03	09/13/17 00:45	1
Lead	0.000469	J	0.00500	0.0000675	mg/L		09/12/17 08:03	09/13/17 00:45	1
Molybdenum	0.00443	J	0.0100	0.000873	mg/L		09/12/17 08:03	09/13/17 00:45	1
Selenium	0.000434	J	0.0100	0.000348	mg/L		09/12/17 08:03	09/13/17 00:45	1
Thallium	0.0000380	J	0.00100	0.0000360	mg/L		09/12/17 08:03	09/13/17 00:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/21/17 12:39	08/21/17 22:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.58		0.100	0.100	SU			08/23/17 10:26	1
Temperature	19.6		0.100	0.100	Degrees C			08/23/17 10:26	1
Total Dissolved Solids	3220		20.0	14.0	mg/L			08/18/17 22:34	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.323		0.0991	0.103	1.00	0.0794	pCi/L	08/23/17 07:47	09/14/17 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.0*		*40 - 110*	*08/23/17 07:47*	*09/14/17 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.895		0.291	0.302	1.00	0.381	pCi/L	08/23/17 08:07	08/31/17 10:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.0*		*40 - 110*	*08/23/17 08:07*	*08/31/17 10:58*	*1*

Client Sample ID: MW-5
Date Collected: 08/16/17 11:10
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.0		40 - 110	08/23/17 08:07	08/31/17 10:58	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.22		0.307	0.319	5.00	0.381	pCi/L		09/14/17 15:15	1

Client Sample ID: MW-6

Date Collected: 08/16/17 13:05
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.49	B	3.00	0.200	mg/L			08/26/17 03:47	1
Fluoride	0.143	J B	1.00	0.0100	mg/L			08/26/17 03:47	1
Sulfate	1840	B	500	3.00	mg/L			08/26/17 17:36	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0495	J	0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 17:44	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000465	J B	0.00200	0.0000213	mg/L		09/12/17 08:03	09/13/17 01:03	1
Arsenic	0.00598		0.00500	0.000118	mg/L		09/12/17 08:03	09/13/17 01:03	1
Barium	0.0104	J	0.200	0.000270	mg/L		09/12/17 08:03	09/13/17 01:03	1
Beryllium	ND		0.00200	0.000102	mg/L		09/12/17 08:03	09/13/17 01:03	1
Boron	0.298	J	1.00	0.00339	mg/L		09/12/17 08:03	09/13/17 01:03	1
Cadmium	ND		0.00100	0.000152	mg/L		09/12/17 08:03	09/13/17 01:03	1
Calcium	477		1.00	0.0412	mg/L		09/12/17 08:03	09/13/17 01:03	1
Chromium	ND		0.00300	0.000339	mg/L		09/12/17 08:03	09/13/17 01:03	1
Cobalt	0.00578		0.00500	0.0000218	mg/L		09/12/17 08:03	09/13/17 01:03	1
Lead	0.000318	J	0.00500	0.0000675	mg/L		09/12/17 08:03	09/13/17 01:03	1
Molybdenum	0.00797	J	0.0100	0.000873	mg/L		09/12/17 08:03	09/13/17 01:03	1
Selenium	ND		0.0100	0.000348	mg/L		09/12/17 08:03	09/13/17 01:03	1
Thallium	ND		0.00100	0.0000360	mg/L		09/12/17 08:03	09/13/17 01:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/21/17 12:39	08/21/17 22:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.51		0.100	0.100	SU			08/23/17 10:26	1
Temperature	19.3		0.100	0.100	Degrees C			08/23/17 10:26	1
Total Dissolved Solids	2950		20.0	14.0	mg/L			08/18/17 22:34	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.353		0.105	0.110	1.00	0.0848	pCi/L	08/23/17 07:47	09/14/17 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*08/23/17 07:47*	*09/14/17 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.467		0.268	0.271	1.00	0.406	pCi/L	08/23/17 08:07	08/31/17 10:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*08/23/17 08:07*	*08/31/17 10:58*	*1*

Client Sample ID: MW-6
Date Collected: 08/16/17 13:05
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-3
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	92.0		40 - 110	08/23/17 08:07	08/31/17 10:58	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.820		0.288	0.292	5.00	0.406	pCi/L		09/14/17 15:15	1

Client Sample ID: MW-7

Date Collected: 08/16/17 14:38
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.91	B	3.00	0.200	mg/L			08/26/17 04:31	1
Fluoride	0.237	J B	1.00	0.0100	mg/L			08/26/17 04:31	1
Sulfate	940	B	500	3.00	mg/L			08/26/17 17:58	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0291	J	0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 17:49	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000162	J B	0.00200	0.0000213	mg/L		09/12/17 08:03	09/13/17 01:08	1
Arsenic	0.00161	J	0.00500	0.000118	mg/L		09/12/17 08:03	09/13/17 01:08	1
Barium	0.0123	J	0.200	0.000270	mg/L		09/12/17 08:03	09/13/17 01:08	1
Beryllium	ND		0.00200	0.000102	mg/L		09/12/17 08:03	09/13/17 01:08	1
Boron	0.263	J	1.00	0.00339	mg/L		09/12/17 08:03	09/13/17 01:08	1
Cadmium	ND		0.00100	0.000152	mg/L		09/12/17 08:03	09/13/17 01:08	1
Calcium	268		1.00	0.0412	mg/L		09/12/17 08:03	09/13/17 01:08	1
Chromium	ND		0.00300	0.000339	mg/L		09/12/17 08:03	09/13/17 01:08	1
Cobalt	0.00395	J	0.00500	0.0000218	mg/L		09/12/17 08:03	09/13/17 01:08	1
Lead	ND		0.00500	0.0000675	mg/L		09/12/17 08:03	09/13/17 01:08	1
Molybdenum	0.00317	J	0.0100	0.000873	mg/L		09/12/17 08:03	09/13/17 01:08	1
Selenium	ND		0.0100	0.000348	mg/L		09/12/17 08:03	09/13/17 01:08	1
Thallium	ND		0.00100	0.0000360	mg/L		09/12/17 08:03	09/13/17 01:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/21/17 12:39	08/21/17 22:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.66		0.100	0.100	SU			08/23/17 10:26	1
Temperature	19.3		0.100	0.100	Degrees C			08/23/17 10:26	1
Total Dissolved Solids	1600		10.0	7.00	mg/L			08/18/17 22:34	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.218		0.0847	0.0869	1.00	0.0761	pCi/L	08/23/17 07:47	09/14/17 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*40 - 110*	*08/23/17 07:47*	*09/14/17 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.634		0.270	0.277	1.00	0.379	pCi/L	08/23/17 08:07	08/31/17 10:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*40 - 110*	*08/23/17 08:07*	*08/31/17 10:59*	*1*

Client Sample ID: MW-7
Date Collected: 08/16/17 14:38
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-4
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.9		40 - 110	08/23/17 08:07	08/31/17 10:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.852		0.283	0.290	5.00	0.379	pCi/L		09/14/17 15:15	1

Client Sample ID: MW-8

Date Collected: 08/15/17 13:45
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.68**	**B**	3.00	0.200	mg/L			08/26/17 05:15	1
Fluoride	**0.237**	**J B**	1.00	0.0100	mg/L			08/26/17 05:15	1
Sulfate	**964**	**B**	500	3.00	mg/L			08/26/17 18:20	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0137**	**J**	0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 17:54	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000125**	**J B**	0.00200	0.0000213	mg/L		09/12/17 08:03	09/13/17 01:13	1
Arsenic	**0.00548**		0.00500	0.000118	mg/L		09/12/17 08:03	09/13/17 01:13	1
Barium	**0.0201**	**J**	0.200	0.000270	mg/L		09/12/17 08:03	09/13/17 01:13	1
Beryllium	ND		0.00200	0.000102	mg/L		09/12/17 08:03	09/13/17 01:13	1
Boron	**0.0518**	**J**	1.00	0.00339	mg/L		09/12/17 08:03	09/13/17 01:13	1
Cadmium	ND		0.00100	0.000152	mg/L		09/12/17 08:03	09/13/17 01:13	1
Calcium	**230**		1.00	0.0412	mg/L		09/12/17 08:03	09/13/17 01:13	1
Chromium	ND		0.00300	0.000339	mg/L		09/12/17 08:03	09/13/17 01:13	1
Cobalt	**0.000943**	**J**	0.00500	0.0000218	mg/L		09/12/17 08:03	09/13/17 01:13	1
Lead	ND		0.00500	0.0000675	mg/L		09/12/17 08:03	09/13/17 01:13	1
Molybdenum	**0.0166**		0.0100	0.000873	mg/L		09/12/17 08:03	09/13/17 01:13	1
Selenium	**0.000501**	**J**	0.0100	0.000348	mg/L		09/12/17 08:03	09/13/17 01:13	1
Thallium	ND		0.00100	0.0000360	mg/L		09/12/17 08:03	09/13/17 01:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/21/17 12:39	08/21/17 22:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.44**		0.100	0.100	SU			08/23/17 10:26	1
Temperature	**19.7**		0.100	0.100	Degrees C			08/23/17 10:26	1
Total Dissolved Solids	**1590**		10.0	7.00	mg/L			08/18/17 22:34	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.565**		0.129	0.138	1.00	0.0890	pCi/L	08/23/17 07:47	09/14/17 09:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*08/23/17 07:47*	*09/14/17 09:28*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.475**		0.276	0.279	1.00	0.417	pCi/L	08/23/17 08:07	08/31/17 10:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*08/23/17 08:07*	*08/31/17 10:59*	*1*

Client Sample ID: MW-8
Date Collected: 08/15/17 13:45
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-5
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.0		40 - 110	08/23/17 08:07	08/31/17 10:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.04		0.304	0.312	5.00	0.417	pCi/L		09/14/17 15:15	1

Client Sample ID: MW-10

Date Collected: 08/18/17 13:45
Date Received: 08/22/17 15:47

Lab Sample ID: 490-135088-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43.5**	**B**	30.0	2.00	mg/L			08/26/17 09:17	10
Fluoride	**0.129**	**J B**	1.00	0.0100	mg/L			08/26/17 08:55	1
Sulfate	**2320**	**B**	500	3.00	mg/L			08/26/17 20:10	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0129**	**J**	0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 16:52	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00396**	**B**	0.00200	0.0000213	mg/L		09/13/17 08:16	09/14/17 00:05	1
Arsenic	**0.000666**	**J**	0.00500	0.000118	mg/L		09/13/17 08:16	09/14/17 00:05	1
Barium	**0.00900**	**J**	0.200	0.000270	mg/L		09/13/17 08:16	09/14/17 00:05	1
Beryllium	ND		0.00200	0.000102	mg/L		09/13/17 08:16	09/14/17 00:05	1
Boron	**0.196**	**J**	1.00	0.00339	mg/L		09/13/17 08:16	09/14/17 00:05	1
Cadmium	ND		0.00100	0.000152	mg/L		09/13/17 08:16	09/14/17 00:05	1
Calcium	**368**		1.00	0.0412	mg/L		09/13/17 08:16	09/14/17 00:05	1
Chromium	ND		0.00300	0.000339	mg/L		09/13/17 08:16	09/14/17 00:05	1
Cobalt	**0.121**		0.00500	0.0000218	mg/L		09/13/17 08:16	09/14/17 00:05	1
Lead	ND		0.00500	0.0000675	mg/L		09/13/17 08:16	09/14/17 00:05	1
Molybdenum	**0.00144**	**J**	0.0100	0.000873	mg/L		09/13/17 08:16	09/14/17 00:05	1
Selenium	**0.000375**	**J**	0.0100	0.000348	mg/L		09/13/17 08:16	09/14/17 00:05	1
Thallium	**0.000111**	**J**	0.00100	0.0000360	mg/L		09/13/17 08:16	09/14/17 00:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/23/17 12:44	08/23/17 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.06**		0.100	0.100	SU			08/26/17 19:35	1
Temperature	**19.4**		0.100	0.100	Degrees C			08/26/17 19:35	1
Total Dissolved Solids	**3200**		20.0	14.0	mg/L			08/24/17 01:30	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0230	U	0.0371	0.0371	1.00	0.0653	pCi/L	08/25/17 07:40	09/18/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*08/25/17 07:40*	*09/18/17 06:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.349**		0.220	0.222	1.00	0.332	pCi/L	08/25/17 07:59	09/05/17 13:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*08/25/17 07:59*	*09/05/17 13:33*	*1*

Client Sample ID: MW-10
Date Collected: 08/18/17 13:45
Date Received: 08/22/17 15:47

Lab Sample ID: 490-135088-4
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.1		40 - 110	08/25/17 07:59	09/05/17 13:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.372		0.223	0.225	5.00	0.332	pCi/L		09/21/17 17:30	1

Client Sample ID: FIELD BLANK

Date Collected: 08/18/17 18:50
Date Received: 08/22/17 15:47

Lab Sample ID: 490-135088-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			08/26/17 20:54	1
Fluoride	**0.0276**	**J B**	1.00	0.0100	mg/L			08/26/17 20:54	1
Sulfate	**0.298**	**J B**	5.00	0.0300	mg/L			08/26/17 20:54	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 17:18	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00133**	**J B**	0.00200	0.0000213	mg/L		09/13/17 08:16	09/14/17 00:28	1
Arsenic	ND		0.00500	0.000118	mg/L		09/13/17 08:16	09/14/17 00:28	1
Barium	ND		0.200	0.000270	mg/L		09/13/17 08:16	09/14/17 00:28	1
Beryllium	ND		0.00200	0.000102	mg/L		09/13/17 08:16	09/14/17 00:28	1
Boron	**0.00850**	**J**	1.00	0.00339	mg/L		09/13/17 08:16	09/14/17 00:28	1
Cadmium	ND		0.00100	0.000152	mg/L		09/13/17 08:16	09/14/17 00:28	1
Calcium	ND		1.00	0.0412	mg/L		09/13/17 08:16	09/14/17 00:28	1
Chromium	ND		0.00300	0.000339	mg/L		09/13/17 08:16	09/14/17 00:28	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/13/17 08:16	09/14/17 00:28	1
Lead	ND		0.00500	0.0000675	mg/L		09/13/17 08:16	09/14/17 00:28	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/13/17 08:16	09/14/17 00:28	1
Selenium	ND		0.0100	0.000348	mg/L		09/13/17 08:16	09/14/17 00:28	1
Thallium	ND		0.00100	0.0000360	mg/L		09/13/17 08:16	09/14/17 00:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/23/17 12:44	08/23/17 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.59**		0.100	0.100	SU			08/26/17 19:35	1
Temperature	**19.7**		0.100	0.100	Degrees C			08/26/17 19:35	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/24/17 01:30	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00552	U	0.0313	0.0313	1.00	0.0662	pCi/L	08/25/17 07:40	09/18/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*08/25/17 07:40*	*09/18/17 06:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00751	U	0.247	0.247	1.00	0.442	pCi/L	09/14/17 09:12	09/20/17 13:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*09/14/17 09:12*	*09/20/17 13:40*	*1*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: FIELD BLANK
Date Collected: 08/18/17 18:50
Date Received: 08/22/17 15:47

Lab Sample ID: 490-135088-6
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*92.3*		*40 - 110*	*09/14/17 09:12*	*09/20/17 13:40*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0130	U	0.249	0.249	5.00	0.442	pCi/L		09/21/17 17:30	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-455214/3
Matrix: Water
Analysis Batch: 455214

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2288	J	3.00	0.200	mg/L			08/26/17 00:28	1
Fluoride	0.03376	J	1.00	0.0100	mg/L			08/26/17 00:28	1
Sulfate	0.4088	J	5.00	0.0300	mg/L			08/26/17 00:28	1

Lab Sample ID: LCS 490-455214/4
Matrix: Water
Analysis Batch: 455214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.798		mg/L		98	80 - 120
Fluoride	1.00	0.9829	J	mg/L		98	80 - 120
Sulfate	10.0	9.572		mg/L		96	80 - 120

Lab Sample ID: LCSD 490-455214/5
Matrix: Water
Analysis Batch: 455214

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.734		mg/L		97	80 - 120	1	20
Fluoride	1.00	0.9750	J	mg/L		97	80 - 120	1	20
Sulfate	10.0	9.582		mg/L		96	80 - 120	0	20

Lab Sample ID: MB 490-455650/3
Matrix: Water
Analysis Batch: 455650

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			08/26/17 13:11	1
Fluoride	0.02978	J	1.00	0.0100	mg/L			08/26/17 13:11	1
Sulfate	0.2786	J	5.00	0.0300	mg/L			08/26/17 13:11	1

Lab Sample ID: LCS 490-455650/4
Matrix: Water
Analysis Batch: 455650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.477		mg/L		95	80 - 120
Fluoride	1.00	0.9258	J	mg/L		92	80 - 120
Sulfate	10.0	9.363		mg/L		94	80 - 120

Lab Sample ID: LCSD 490-455650/5
Matrix: Water
Analysis Batch: 455650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.402		mg/L		94	80 - 120	1	20
Fluoride	1.00	0.9108	J	mg/L		91	80 - 120	2	20
Sulfate	10.0	9.253		mg/L		92	80 - 120	1	20

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 490-134967-1 MS
Matrix: Water
Analysis Batch: 455650

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	79.1	E	2.00	72.33	E 4	mg/L		-336	80 - 120
Fluoride	0.579	J B F1	0.200	0.5746	J F1	mg/L		-2	80 - 120
Sulfate	1280	E B	2.00	1204	E 4	mg/L		-3599	80 - 120

Lab Sample ID: 490-134967-1 MSD
Matrix: Water
Analysis Batch: 455650

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	79.1	E	2.00	70.41	E 4	mg/L		-432	80 - 120	3	20
Fluoride	0.579	J B F1	0.200	0.5706	J F1	mg/L		-4	80 - 120	1	20
Sulfate	1280	E B	2.00	1188	E 4	mg/L		-4409	80 - 120	1	20

Lab Sample ID: 490-134967-C-1 MS
Matrix: Water
Analysis Batch: 455650

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	79.1	E	2.00	72.33	E 4	mg/L		-336	80 - 120
Fluoride	0.579	J B F1	0.200	0.5746	J F1	mg/L		-2	80 - 120
Sulfate	1280	E B	2.00	1204	E 4	mg/L		-3599	80 - 120

Lab Sample ID: 490-134967-C-1 MSD
Matrix: Water
Analysis Batch: 455650

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	79.1	E	2.00	70.41	E 4	mg/L		-432	80 - 120	3	20
Fluoride	0.579	J B F1	0.200	0.5706	J F1	mg/L		-4	80 - 120	1	20
Sulfate	1280	E B	2.00	1188	E 4	mg/L		-4409	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-222368/1-A
Matrix: Water
Analysis Batch: 222659

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 222368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/08/17 08:16	09/11/17 15:40	1

Lab Sample ID: LCS 180-222368/2-A
Matrix: Water
Analysis Batch: 222659

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 222368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.018		mg/L		102	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 490-135088-5 MS
Matrix: Water
Analysis Batch: 222659

Client Sample ID: DUPE
Prep Type: Total Recoverable
Prep Batch: 222368

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0418	J	1.00	1.118		mg/L		108	75 - 125

Lab Sample ID: 490-135088-5 MSD
Matrix: Water
Analysis Batch: 222659

Client Sample ID: DUPE
Prep Type: Total Recoverable
Prep Batch: 222368

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0418	J	1.00	1.109		mg/L		107	75 - 125	1	20

Lab Sample ID: 490-135088-B-5-B MS
Matrix: Water
Analysis Batch: 222659

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 222368

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0418	J	1.00	1.118		mg/L		108	75 - 125

Lab Sample ID: 490-135088-B-5-C MSD
Matrix: Water
Analysis Batch: 222659

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 222368

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0418	J	1.00	1.109		mg/L		107	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-222679/1-A
Matrix: Water
Analysis Batch: 222890

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 222679

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00006800	J	0.00200	0.0000213	mg/L		09/12/17 08:03	09/12/17 22:29	1
Arsenic	ND		0.00500	0.000118	mg/L		09/12/17 08:03	09/12/17 22:29	1
Barium	ND		0.200	0.000270	mg/L		09/12/17 08:03	09/12/17 22:29	1
Beryllium	ND		0.00200	0.000102	mg/L		09/12/17 08:03	09/12/17 22:29	1
Boron	ND		1.00	0.00339	mg/L		09/12/17 08:03	09/12/17 22:29	1
Cadmium	ND		0.00100	0.000152	mg/L		09/12/17 08:03	09/12/17 22:29	1
Calcium	ND		1.00	0.0412	mg/L		09/12/17 08:03	09/12/17 22:29	1
Chromium	ND		0.00300	0.000339	mg/L		09/12/17 08:03	09/12/17 22:29	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/12/17 08:03	09/12/17 22:29	1
Lead	ND		0.00500	0.0000675	mg/L		09/12/17 08:03	09/12/17 22:29	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/12/17 08:03	09/12/17 22:29	1
Selenium	ND		0.0100	0.000348	mg/L		09/12/17 08:03	09/12/17 22:29	1
Thallium	ND		0.00100	0.0000360	mg/L		09/12/17 08:03	09/12/17 22:29	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-222679/2-A
Matrix: Water
Analysis Batch: 222890

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 222679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5095		mg/L		102	80 - 120
Arsenic	0.0400	0.03575		mg/L		89	80 - 120
Barium	2.00	1.888		mg/L		94	80 - 120
Beryllium	0.0500	0.04715		mg/L		94	80 - 120
Boron	1.00	0.9990	J	mg/L		100	80 - 120
Cadmium	0.0500	0.05253		mg/L		105	80 - 120
Calcium	50.0	45.95		mg/L		92	80 - 120
Chromium	0.200	0.1889		mg/L		94	80 - 120
Cobalt	0.500	0.4267		mg/L		85	80 - 120
Lead	0.0200	0.02021		mg/L		101	80 - 120
Molybdenum	1.00	1.032		mg/L		103	80 - 120
Selenium	0.0100	0.009235	J	mg/L		92	80 - 120
Thallium	0.0500	0.04873		mg/L		97	80 - 120

Lab Sample ID: 490-134967-1 MS
Matrix: Water
Analysis Batch: 222890

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 222679

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000147	J B	0.500	0.5072		mg/L		101	75 - 125
Arsenic	0.00178	J	0.0400	0.03699		mg/L		88	75 - 125
Barium	0.00674	J	2.00	1.862		mg/L		93	75 - 125
Beryllium	0.000167	J	0.0500	0.04968		mg/L		99	75 - 125
Boron	0.232	J	1.00	1.346		mg/L		111	75 - 125
Cadmium	0.00519		0.0500	0.05459		mg/L		99	75 - 125
Calcium	510		50.0	547.9	4	mg/L		75	75 - 125
Chromium	ND		0.200	0.1797		mg/L		90	75 - 125
Cobalt	0.316		0.500	0.6990		mg/L		77	75 - 125
Lead	ND		0.0200	0.01944		mg/L		97	75 - 125
Molybdenum	0.00328	J	1.00	1.025		mg/L		102	75 - 125
Selenium	0.000599	J	0.0100	0.009345	J	mg/L		87	75 - 125
Thallium	0.000114	J	0.0500	0.04783		mg/L		95	75 - 125

Lab Sample ID: 490-134967-1 MSD
Matrix: Water
Analysis Batch: 222890

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 222679

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000147	J B	0.500	0.5056		mg/L		101	75 - 125	0	20
Arsenic	0.00178	J	0.0400	0.03870		mg/L		92	75 - 125	5	20
Barium	0.00674	J	2.00	1.860		mg/L		93	75 - 125	0	20
Beryllium	0.000167	J	0.0500	0.04988		mg/L		99	75 - 125	0	20
Boron	0.232	J	1.00	1.344		mg/L		111	75 - 125	0	20
Cadmium	0.00519		0.0500	0.05600		mg/L		102	75 - 125	3	20
Calcium	510		50.0	546.4	4	mg/L		72	75 - 125	0	20
Chromium	ND		0.200	0.1977		mg/L		99	75 - 125	10	20
Cobalt	0.316		0.500	0.7393		mg/L		85	75 - 125	6	20
Lead	ND		0.0200	0.01938		mg/L		97	75 - 125	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-134967-1 MSD
Matrix: Water
Analysis Batch: 222890

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 222679

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.00328	J	1.00	1.090		mg/L		109	75 - 125	6	20
Selenium	0.000599	J	0.0100	0.008567	J	mg/L		80	75 - 125	9	20
Thallium	0.000114	J	0.0500	0.04776		mg/L		95	75 - 125	0	20

Lab Sample ID: MB 180-222810/1-A
Matrix: Water
Analysis Batch: 222995

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 222810

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0002190	J	0.00200	0.0000213	mg/L		09/13/17 08:16	09/13/17 22:29	1
Arsenic	ND		0.00500	0.000118	mg/L		09/13/17 08:16	09/13/17 22:29	1
Barium	ND		0.200	0.000270	mg/L		09/13/17 08:16	09/13/17 22:29	1
Beryllium	ND		0.00200	0.000102	mg/L		09/13/17 08:16	09/13/17 22:29	1
Boron	ND		1.00	0.00339	mg/L		09/13/17 08:16	09/13/17 22:29	1
Cadmium	ND		0.00100	0.000152	mg/L		09/13/17 08:16	09/13/17 22:29	1
Calcium	ND		1.00	0.0412	mg/L		09/13/17 08:16	09/13/17 22:29	1
Chromium	ND		0.00300	0.000339	mg/L		09/13/17 08:16	09/13/17 22:29	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/13/17 08:16	09/13/17 22:29	1
Lead	ND		0.00500	0.0000675	mg/L		09/13/17 08:16	09/13/17 22:29	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/13/17 08:16	09/13/17 22:29	1
Selenium	ND		0.0100	0.000348	mg/L		09/13/17 08:16	09/13/17 22:29	1
Thallium	ND		0.00100	0.0000360	mg/L		09/13/17 08:16	09/13/17 22:29	1

Lab Sample ID: LCS 180-222810/2-A
Matrix: Water
Analysis Batch: 222995

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 222810

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4908		mg/L		98	80 - 120
Arsenic	0.0400	0.03651		mg/L		91	80 - 120
Barium	2.00	1.885		mg/L		94	80 - 120
Beryllium	0.0500	0.04384		mg/L		88	80 - 120
Boron	1.00	0.9060	J	mg/L		91	80 - 120
Cadmium	0.0500	0.04776		mg/L		96	80 - 120
Calcium	50.0	47.44		mg/L		95	80 - 120
Chromium	0.200	0.1699		mg/L		85	80 - 120
Cobalt	0.500	0.4459		mg/L		89	80 - 120
Lead	0.0200	0.01994		mg/L		100	80 - 120
Molybdenum	1.00	0.9931		mg/L		99	80 - 120
Selenium	0.0100	0.009493	J	mg/L		95	80 - 120
Thallium	0.0500	0.04868		mg/L		97	80 - 120

Lab Sample ID: 490-135088-3 MS
Matrix: Water
Analysis Batch: 222995

Client Sample ID: MW-4
Prep Type: Total Recoverable
Prep Batch: 222810

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000438	J B	0.500	0.4920		mg/L		98	75 - 125
Arsenic	0.00489	J	0.0400	0.04250		mg/L		94	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-135088-3 MS
Matrix: Water
Analysis Batch: 222995

Client Sample ID: MW-4
Prep Type: Total Recoverable
Prep Batch: 222810

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0138	J	2.00	1.879		mg/L		93	75 - 125
Beryllium	ND		0.0500	0.04751		mg/L		95	75 - 125
Boron	0.535	J	1.00	1.533		mg/L		100	75 - 125
Cadmium	ND		0.0500	0.05133		mg/L		103	75 - 125
Calcium	485		50.0	531.2	4	mg/L		93	75 - 125
Chromium	ND		0.200	0.1624		mg/L		81	75 - 125
Cobalt	0.0132		0.500	0.4292		mg/L		83	75 - 125
Lead	ND		0.0200	0.01971		mg/L		99	75 - 125
Molybdenum	0.00168	J	1.00	1.023		mg/L		102	75 - 125
Selenium	ND		0.0100	0.008889	J	mg/L		89	75 - 125
Thallium	ND		0.0500	0.04848		mg/L		97	75 - 125

Lab Sample ID: 490-135088-3 MSD
Matrix: Water
Analysis Batch: 222995

Client Sample ID: MW-4
Prep Type: Total Recoverable
Prep Batch: 222810

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000438	J B	0.500	0.4937		mg/L		99	75 - 125	0	20
Arsenic	0.00489	J	0.0400	0.04239		mg/L		94	75 - 125	0	20
Barium	0.0138	J	2.00	1.890		mg/L		94	75 - 125	1	20
Beryllium	ND		0.0500	0.04660		mg/L		93	75 - 125	2	20
Boron	0.535	J	1.00	1.521		mg/L		99	75 - 125	1	20
Cadmium	ND		0.0500	0.05052		mg/L		101	75 - 125	2	20
Calcium	485		50.0	540.7	4	mg/L		112	75 - 125	2	20
Chromium	ND		0.200	0.1677		mg/L		84	75 - 125	3	20
Cobalt	0.0132		0.500	0.4328		mg/L		84	75 - 125	1	20
Lead	ND		0.0200	0.01985		mg/L		99	75 - 125	1	20
Molybdenum	0.00168	J	1.00	1.018		mg/L		102	75 - 125	0	20
Selenium	ND		0.0100	0.009091	J	mg/L		91	75 - 125	2	20
Thallium	ND		0.0500	0.04868		mg/L		97	75 - 125	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-454211/1-A
Matrix: Water
Analysis Batch: 454498

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454211

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/21/17 12:39	08/21/17 21:55	1

Lab Sample ID: LCS 490-454211/2-A
Matrix: Water
Analysis Batch: 454498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454211

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.008		ug/L		101	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 490-134914-D-2-C MS
Matrix: Water
Analysis Batch: 454498

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 454211

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.139	J	1.00	1.047		ug/L		91	75 - 125

Lab Sample ID: 490-134914-D-2-D MSD
Matrix: Water
Analysis Batch: 454498

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 454211

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.139	J	1.00	0.9350		ug/L		80	75 - 125	11	20

Lab Sample ID: MB 490-454820/1-A
Matrix: Water
Analysis Batch: 454866

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454820

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/23/17 12:44	08/23/17 18:24	1

Lab Sample ID: LCS 490-454820/2-A
Matrix: Water
Analysis Batch: 454866

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454820

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.042		ug/L		104	80 - 120

Lab Sample ID: LCSD 490-454820/3-A
Matrix: Water
Analysis Batch: 454866

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 454820

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.00	0.9558		ug/L		96	80 - 120	9	20

Lab Sample ID: 490-135088-2 MS
Matrix: Water
Analysis Batch: 454866

Client Sample ID: MW-3
Prep Type: Total/NA
Prep Batch: 454820

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.007		ug/L		101	75 - 125

Lab Sample ID: 490-135088-2 MSD
Matrix: Water
Analysis Batch: 454866

Client Sample ID: MW-3
Prep Type: Total/NA
Prep Batch: 454820

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9290		ug/L		93	75 - 125	8	20

Method: 9040C - pH

Lab Sample ID: LCS 490-454667/12
Matrix: Water
Analysis Batch: 454667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.040		SU		101	98 - 103

Lab Sample ID: 490-134843-H-3 DU
Matrix: Water
Analysis Batch: 454667

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.84		6.840		SU		0	20
Temperature	20.0		20.00		Degrees C		0	20

Lab Sample ID: LCS 490-455710/1
Matrix: Water
Analysis Batch: 455710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.000		SU		100	98 - 103

Lab Sample ID: 490-135088-1 DU
Matrix: Water
Analysis Batch: 455710

Client Sample ID: MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.46		6.490		SU		0.5	20
Temperature	19.6		19.60		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-453827/1
Matrix: Water
Analysis Batch: 453827

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/18/17 22:34	1

Lab Sample ID: LCS 490-453827/2
Matrix: Water
Analysis Batch: 453827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	107.0		mg/L		107	90 - 110

Lab Sample ID: LCSD 490-453827/3
Matrix: Water
Analysis Batch: 453827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	104.0		mg/L		104	90 - 110	3	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 490-134868-J-5 DU
Matrix: Water
Analysis Batch: 453827

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	292			287.0		mg/L				2	20

Lab Sample ID: 490-134980-H-1 DU
Matrix: Water
Analysis Batch: 453827

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	948			930.0		mg/L				2	20

Lab Sample ID: MB 490-453843/1
Matrix: Water
Analysis Batch: 453843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/24/17 01:30	1

Lab Sample ID: LCS 490-453843/2
Matrix: Water
Analysis Batch: 453843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	91.00		mg/L		91	90 - 110		

Lab Sample ID: LCSD 490-453843/3
Matrix: Water
Analysis Batch: 453843

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			100	92.00		mg/L		92	90 - 110	1	20

Lab Sample ID: 490-135088-1 DU
Matrix: Water
Analysis Batch: 453843

Client Sample ID: MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	476			478.0		mg/L				0.4	20

Lab Sample ID: 490-135193-E-2 DU
Matrix: Water
Analysis Batch: 453843

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2190			2176		mg/L				0.5	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-323575/1-A
Matrix: Water
Analysis Batch: 327140

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323575

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03629	U	0.0475	0.0476	1.00	0.0789	pCi/L	08/23/17 07:47	09/14/17 09:24	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.5*		*40 - 110*	*08/23/17 07:47*	*09/14/17 09:24*	*1*

Lab Sample ID: LCS 160-323575/2-A
Matrix: Water
Analysis Batch: 327140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323575

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	10.38		1.08	1.00	0.0938	pCi/L	108	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.7*		*40 - 110*

Lab Sample ID: 310-112461-C-7-A MSD
Matrix: Water
Analysis Batch: 327140

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 323575

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.451		9.61	8.705		0.913	1.00	0.0726	pCi/L	86	75 - 138	0.65	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*104*		*40 - 110*

Lab Sample ID: 310-112461-D-7-B MS
Matrix: Water
Analysis Batch: 327140

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 323575

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.451		9.60	9.965		1.03	1.00	0.0778	pCi/L	99	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*96.2*		*40 - 110*

Lab Sample ID: MB 160-324216/1-A
Matrix: Water
Analysis Batch: 327619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324216

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.09543		0.0600	0.0606	1.00	0.0766	pCi/L	08/25/17 07:40	09/18/17 06:17	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-324216/1-A
Matrix: Water
Analysis Batch: 327619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324216

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110	08/25/17 07:40	09/18/17 06:17	1

Lab Sample ID: LCS 160-324216/2-A
Matrix: Water
Analysis Batch: 327619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324216

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	8.135		0.852	1.00	0.0702	pCi/L	85	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110

Lab Sample ID: 160-24108-J-1-A DU
Matrix: Water
Analysis Batch: 327619

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 324216

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.203			0.2500		0.0888	1.00	0.0746	pCi/L			0.28	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	99.4		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-323579/1-A
Matrix: Water
Analysis Batch: 325254

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323579

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.6516		0.282	0.288	1.00	0.406	pCi/L	08/23/17 08:07	08/31/17 10:53	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110	08/23/17 08:07	08/31/17 10:53	1
Y Carrier	88.2		40 - 110	08/23/17 08:07	08/31/17 10:53	1

Lab Sample ID: LCS 160-323579/2-A
Matrix: Water
Analysis Batch: 325254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323579

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.0	13.50		1.46	1.00	0.336	pCi/L	104	56 - 140		

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-323579/2-A
Matrix: Water
Analysis Batch: 325254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323579

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	91.7		40 - 110
Y Carrier	91.2		40 - 110

Lab Sample ID: 310-112461-C-7-B MSD
Matrix: Water
Analysis Batch: 325254

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 323579

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.907		13.0	12.68		1.36	1.00	0.333	pCi/L	91	45 - 150	0.55	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	87.9		40 - 110

Lab Sample ID: 310-112461-D-7-D MS
Matrix: Water
Analysis Batch: 325254

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 323579

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.907		13.0	14.28		1.53	1.00	0.354	pCi/L	103	45 - 150		

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	96.2		40 - 110
Y Carrier	87.5		40 - 110

Lab Sample ID: MB 160-324231/1-A
Matrix: Water
Analysis Batch: 325535

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324231

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1633	U	0.197	0.197	1.00	0.325	pCi/L	08/25/17 07:59	09/05/17 13:31	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110	08/25/17 07:59	09/05/17 13:31	1
Y Carrier	81.9		40 - 110	08/25/17 07:59	09/05/17 13:31	1

Lab Sample ID: LCS 160-324231/2-A
Matrix: Water
Analysis Batch: 325535

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324231

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.0	13.75		1.48	1.00	0.288	pCi/L	106	56 - 140		

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-324231/2-A
Matrix: Water
Analysis Batch: 325535

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324231

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	80.7		40 - 110

Lab Sample ID: 160-24108-J-1-B DU
Matrix: Water
Analysis Batch: 325535

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 324231

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.312	U		0.04332	U	0.190	1.00	0.334	pCi/L			0.66	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	99.4		40 - 110
Y Carrier	84.9		40 - 110

Lab Sample ID: MB 160-327146/1-A
Matrix: Water
Analysis Batch: 328086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 327146

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.02067	U	0.217	0.217	1.00	0.395	pCi/L	09/14/17 09:12	09/20/17 13:40	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110	09/14/17 09:12	09/20/17 13:40	1
Y Carrier	89.0		40 - 110	09/14/17 09:12	09/20/17 13:40	1

Lab Sample ID: LCS 160-327146/2-A
Matrix: Water
Analysis Batch: 328086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 327146

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			17.2	16.89		1.79	1.00	0.356	pCi/L	98	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	93.1		40 - 110

Lab Sample ID: LCSD 160-327146/3-A
Matrix: Water
Analysis Batch: 328086

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 327146

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			17.2	18.75		1.99	1.00	0.438	pCi/L	109	56 - 140	0.49	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-327146/3-A
Matrix: Water
Analysis Batch: 328086

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 327146

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*90.1*		*40 - 110*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-142424-A-1 DU
Matrix: Water
Analysis Batch: 328342

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	2.02			1.398		0.340	5.00	0.361	pCi/L			0.72	

HPLC/IC

Analysis Batch: 455214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	9056A	
490-134967-3	MW-6	Total/NA	Water	9056A	
490-134967-4	MW-7	Total/NA	Water	9056A	
490-134967-5	MW-8	Total/NA	Water	9056A	
490-135088-4	MW-10	Total/NA	Water	9056A	
490-135088-4	MW-10	Total/NA	Water	9056A	

Analysis Batch: 455650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	9056A	
490-134967-2	MW-5	Total/NA	Water	9056A	
490-134967-3	MW-6	Total/NA	Water	9056A	
490-134967-4	MW-7	Total/NA	Water	9056A	
490-134967-5	MW-8	Total/NA	Water	9056A	
490-135088-4	MW-10	Total/NA	Water	9056A	
490-135088-6	FIELD BLANK	Total/NA	Water	9056A	

Metals

Prep Batch: 222368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total Recoverable	Water	3005A	
490-134967-3	MW-6	Total Recoverable	Water	3005A	
490-134967-4	MW-7	Total Recoverable	Water	3005A	
490-134967-5	MW-8	Total Recoverable	Water	3005A	
490-135088-4	MW-10	Total Recoverable	Water	3005A	
490-135088-6	FIELD BLANK	Total Recoverable	Water	3005A	

Analysis Batch: 222659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total Recoverable	Water	6010C	222368
490-134967-3	MW-6	Total Recoverable	Water	6010C	222368
490-134967-4	MW-7	Total Recoverable	Water	6010C	222368
490-134967-5	MW-8	Total Recoverable	Water	6010C	222368
490-135088-4	MW-10	Total Recoverable	Water	6010C	222368
490-135088-6	FIELD BLANK	Total Recoverable	Water	6010C	222368

Prep Batch: 222679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total Recoverable	Water	3005A	
490-134967-3	MW-6	Total Recoverable	Water	3005A	
490-134967-4	MW-7	Total Recoverable	Water	3005A	
490-134967-5	MW-8	Total Recoverable	Water	3005A	

Prep Batch: 222810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total Recoverable	Water	3005A	
490-135088-6	FIELD BLANK	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 222890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total Recoverable	Water	6020A	222679
490-134967-3	MW-6	Total Recoverable	Water	6020A	222679
490-134967-4	MW-7	Total Recoverable	Water	6020A	222679
490-134967-5	MW-8	Total Recoverable	Water	6020A	222679

Analysis Batch: 222995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total Recoverable	Water	6020A	222810
490-135088-6	FIELD BLANK	Total Recoverable	Water	6020A	222810

Prep Batch: 454211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	7470A	
490-134967-3	MW-6	Total/NA	Water	7470A	
490-134967-4	MW-7	Total/NA	Water	7470A	
490-134967-5	MW-8	Total/NA	Water	7470A	

Analysis Batch: 454498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	7470A	454211
490-134967-3	MW-6	Total/NA	Water	7470A	454211
490-134967-4	MW-7	Total/NA	Water	7470A	454211
490-134967-5	MW-8	Total/NA	Water	7470A	454211

Prep Batch: 454820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total/NA	Water	7470A	
490-135088-6	FIELD BLANK	Total/NA	Water	7470A	

Analysis Batch: 454866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total/NA	Water	7470A	454820
490-135088-6	FIELD BLANK	Total/NA	Water	7470A	454820

General Chemistry

Analysis Batch: 453827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	SM 2540C	
490-134967-3	MW-6	Total/NA	Water	SM 2540C	
490-134967-4	MW-7	Total/NA	Water	SM 2540C	
490-134967-5	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 453843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total/NA	Water	SM 2540C	
490-135088-6	FIELD BLANK	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 454667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	9040C	
490-134967-3	MW-6	Total/NA	Water	9040C	
490-134967-4	MW-7	Total/NA	Water	9040C	
490-134967-5	MW-8	Total/NA	Water	9040C	

Analysis Batch: 455710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total/NA	Water	9040C	
490-135088-6	FIELD BLANK	Total/NA	Water	9040C	

Rad

Prep Batch: 323575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	PrecSep-21	
490-134967-3	MW-6	Total/NA	Water	PrecSep-21	
490-134967-4	MW-7	Total/NA	Water	PrecSep-21	
490-134967-5	MW-8	Total/NA	Water	PrecSep-21	

Prep Batch: 323579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134967-2	MW-5	Total/NA	Water	PrecSep_0	
490-134967-3	MW-6	Total/NA	Water	PrecSep_0	
490-134967-4	MW-7	Total/NA	Water	PrecSep_0	
490-134967-5	MW-8	Total/NA	Water	PrecSep_0	

Prep Batch: 324216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total/NA	Water	PrecSep-21	
490-135088-6	FIELD BLANK	Total/NA	Water	PrecSep-21	

Prep Batch: 324231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-4	MW-10	Total/NA	Water	PrecSep_0	

Prep Batch: 327146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135088-6	FIELD BLANK	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-5

Date Collected: 08/16/17 11:10
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			455214	08/26/17 03:03	SW1	TAL NSH
Total/NA	Analysis	9056A		10			455650	08/26/17 16:52	SW1	TAL NSH
Total/NA	Analysis	9056A		100			455650	08/26/17 17:14	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222368	09/08/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222659	09/11/17 17:39	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222679	09/12/17 08:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			222890	09/13/17 00:45	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	454211	08/21/17 12:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			454498	08/21/17 22:44	RDF	TAL NSH
Total/NA	Analysis	9040C		1			454667	08/23/17 10:26	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	453827	08/18/17 22:34	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.02 mL	1.0 g	323575	08/23/17 07:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			327138	09/14/17 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.02 mL	1.0 g	323579	08/23/17 08:07	LDE	TAL SL
Total/NA	Analysis	904.0		1			325255	08/31/17 10:58	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			327331	09/14/17 15:15	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 08/16/17 13:05
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			455214	08/26/17 03:47	SW1	TAL NSH
Total/NA	Analysis	9056A		100			455650	08/26/17 17:36	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222368	09/08/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222659	09/11/17 17:44	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222679	09/12/17 08:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			222890	09/13/17 01:03	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	454211	08/21/17 12:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			454498	08/21/17 22:51	RDF	TAL NSH
Total/NA	Analysis	9040C		1			454667	08/23/17 10:26	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	453827	08/18/17 22:34	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.16 mL	1.0 g	323575	08/23/17 07:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			327138	09/14/17 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.16 mL	1.0 g	323579	08/23/17 08:07	LDE	TAL SL
Total/NA	Analysis	904.0		1			325255	08/31/17 10:58	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			327331	09/14/17 15:15	RTM	TAL SL

Client Sample ID: MW-7

Date Collected: 08/16/17 14:38
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			455214	08/26/17 04:31	SW1	TAL NSH
Total/NA	Analysis	9056A		100			455650	08/26/17 17:58	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222368	09/08/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222659	09/11/17 17:49	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222679	09/12/17 08:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			222890	09/13/17 01:08	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	454211	08/21/17 12:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			454498	08/21/17 22:53	RDF	TAL NSH
Total/NA	Analysis	9040C		1			454667	08/23/17 10:26	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	453827	08/18/17 22:34	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.93 mL	1.0 g	323575	08/23/17 07:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			327138	09/14/17 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.93 mL	1.0 g	323579	08/23/17 08:07	LDE	TAL SL
Total/NA	Analysis	904.0		1			325255	08/31/17 10:59	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			327331	09/14/17 15:15	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 08/15/17 13:45
Date Received: 08/18/17 09:35

Lab Sample ID: 490-134967-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			455214	08/26/17 05:15	SW1	TAL NSH
Total/NA	Analysis	9056A		100			455650	08/26/17 18:20	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222368	09/08/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222659	09/11/17 17:54	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222679	09/12/17 08:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			222890	09/13/17 01:13	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	454211	08/21/17 12:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			454498	08/21/17 22:55	RDF	TAL NSH
Total/NA	Analysis	9040C		1			454667	08/23/17 10:26	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	453827	08/18/17 22:34	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.91 mL	1.0 g	323575	08/23/17 07:47	LDE	TAL SL
Total/NA	Analysis	903.0		1			327138	09/14/17 09:28	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.91 mL	1.0 g	323579	08/23/17 08:07	LDE	TAL SL
Total/NA	Analysis	904.0		1			325255	08/31/17 10:59	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			327331	09/14/17 15:15	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-10

Date Collected: 08/18/17 13:45
Date Received: 08/22/17 15:47

Lab Sample ID: 490-135088-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			455214	08/26/17 08:55	SW1	TAL NSH
Total/NA	Analysis	9056A		10			455214	08/26/17 09:17	SW1	TAL NSH
Total/NA	Analysis	9056A		100			455650	08/26/17 20:10	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222368	09/08/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222659	09/11/17 16:52	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222810	09/13/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222995	09/14/17 00:05	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	454820	08/23/17 12:44	RDF	TAL NSH
Total/NA	Analysis	7470A		1			454866	08/23/17 18:48	RDF	TAL NSH
Total/NA	Analysis	9040C		1			455710	08/26/17 19:35	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	453843	08/24/17 01:30	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.36 mL	1.0 g	324216	08/25/17 07:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			327620	09/18/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.36 mL	1.0 g	324231	08/25/17 07:59	LDE	TAL SL
Total/NA	Analysis	904.0		1			325535	09/05/17 13:33	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328342	09/21/17 17:30	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 08/18/17 18:50
Date Received: 08/22/17 15:47

Lab Sample ID: 490-135088-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			455650	08/26/17 20:54	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222368	09/08/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222659	09/11/17 17:18	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222810	09/13/17 08:16	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222995	09/14/17 00:28	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	454820	08/23/17 12:44	RDF	TAL NSH
Total/NA	Analysis	7470A		1			454866	08/23/17 18:52	RDF	TAL NSH
Total/NA	Analysis	9040C		1			455710	08/26/17 19:35	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	453843	08/24/17 01:30	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.92 mL	1.0 g	324216	08/25/17 07:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			327620	09/18/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			749.80 mL	1.0 g	327146	09/14/17 09:12	MBC	TAL SL
Total/NA	Analysis	904.0		1			328086	09/20/17 13:40	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328342	09/21/17 17:30	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
9040C		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-134967 Chain of Custody

Cooler Received/Opened On 8/18/2017 @0935

Time Samples Removed From Cooler 1923 Time Samples Placed In Storage 1945 (2 Hour Window)

1. Tracking # 7295 (last 4 digits, FedEx) Courier: FEDEX

IR Gun ID 14740456 pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 0.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: ~~Blue Ice~~ Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-134967

Cooler Received/Opened On 8/18/2017 @ 0935

Time Samples Removed From Cooler 1923 Time Samples Placed In Storage 1945 (2 Hour Window)

1. Tracking # 7251 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470368 pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 3.0 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) ES

7. Were custody seals on containers: YES NO and Intact YES NO NA

Were these signed and dated correctly? YES NO NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13a. Were VOA vials received? YES NO NA

b. Was there any observable headspace present in any VOA vial? YES NO NA

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # ____

I certify that I unloaded the cooler and answered questions 7-14 (initial) SH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

b. Did the bottle labels indicate that the correct preservatives were used YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) SH

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) SH

I certify that I attached a label with the unique LIMS number to each container (initial) SH

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO #____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

1/31/2018 (Rev. 2)

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	Project Manager: Bradley Coyle	Site Contact: Greg Dick	Date: 8/17/2017	COC No: 490-68816-21289.1
Company: Big Rivers Electric Corporation	Tel/Fax: (270) 844-6032	Lab Contact: Roxanne Cisneros	Carrier: FedEx	1 of 1 COCs
Address: PO Box 24	Analysis Turnaround Time			Sampler: Greg Dick
City/State/Zip: Henderson, KY 42419	☐CALENDAR DAYS ☐WORKING DAYS			For Lab Use Only:
(270) 844-6000 Phone	TAT if different from Below			Walk-in Client:
(xxx) xxx-xxxx FAX	☑ 2 weeks			Lab Sampling:
Project Name: WL CCR Groundwater-Round 5	☐ 1 week			
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days			Job / SDG No.:
P O #: Purchase Order-see DOCs	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	903.0, 904.0	6010C, 6020A, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-1	8/15/17	1150	G	Water	6	N	N	x	x	x	x	
MW-5	8/16/17	1110	G	Water	6	N	N	x	x	x	x	
MW-6	8/16/17	1305	G	Water	6	N	N	x	x	x	x	
MW-7	8/16/17	1438	G	Water	6	N	N	x	x	x	x	
MW-8	8/15/17	1345	G	Water	6	N	N	x	x	x	x	

Loc: 490
134967

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____ | | | 4 | 4 | 1 | 1 |

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations). See attached constituent list for analysis.

Custody Seals Intact: ☐Yes ☐No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 2.6/3.0 Corr'd: _____ | Therm ID No.: _____

Relinquished by: Bradley Coyle BRADLEY COYLE	Company: BREC	Date/Time: 8/17/17 1200	Received by:	Company: TAN	Date/Time: 8/18/17 @ 0955
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Loc: 490
134967

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-135088 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 08-22-2017 @ 1125

Time Samples Removed From Cooler 1511 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # N/A (last 4 digits, FedEx) Courier: Client

IR Gun ID 31470366 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 1.0 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Side

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) es

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) es

I certify that I attached a label with the unique LIMS number to each container (initial) es

21. Were there Non-Conformance issues at login? YES..NO Was a NCM generated? YES..NO..# es

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

1/31/2018 (Rev. 2)

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custo 490-135088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: Coal Combustion Residuals (CCR)

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 8/21/2017**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6000 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: WL CCR Groundwater-Round 7	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-68816-21289.2
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	903.0, 904.0	6010C, 6020A, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-2	8/18/17	1815	G	Water	6	N	N	x	x	x	x	
MW-3	8/18/17	1725	G	Water	6	N	N	x	x	x	x	
MW-4	8/18/17	1610	G	Water	6	N	N	x	x	x	x	
MW-10	8/18/17	1345	G	Water	6	N	N	x	x	x	x	
DUPE	8/18/17	1742	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	8/18/17	1850	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations). See attached constituent list for analysis.

1.0, 1.2

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by:	Company: BREC	Date/Time: 8/22/17 1125	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company: TAN	Date/Time: 8-22-17 9:00
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016

1/31/2018 (Rev. 2)

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-61648.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-134967-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 8/30/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 5	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	904.0/PrecSep_0 Standard Target List	903.0/PrecSep_21 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (490-134967-1)	8/15/17	11:50 Eastern		Water			X	X	X	2	Historical Review required
MW-5 (490-134967-2)	8/16/17	11:10 Eastern		Water			X	X	X	2	Historical Review required
MW-6 (490-134967-3)	8/16/17	13:05 Eastern		Water			X	X	X	2	Historical Review required
MW-7 (490-134967-4)	8/16/17	14:38 Eastern		Water			X	X	X	2	Historical Review required
MW-8 (490-134967-5)	8/15/17	13:45 Eastern		Water			X	X	X	2	Historical Review required

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	8.21.17	TAN		8/22/17 0520	TASTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-134967 Chain of Custody

649.1

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Kentucky	Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-134967-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 8/30/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 5	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-134967-1)	8/15/17	11:50 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-134967-2)	8/16/17	11:10 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-134967-3)	8/16/17	13:05 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-7 (490-134967-4)	8/16/17	14:38 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-134967-5)	8/15/17	13:45 Eastern		Water			X	X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	8.21.17	TAN		8-22-17	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:20	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica

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Part # 159470-434 RIT2 EXP 04/18 •

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 21AUG17
ACTWGT: 10.00 LB MAN
CAD: 820425/CAFE3011

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490 - 72133

FedEx Express

TUE - 22 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0201 4055 2576 6345

EV AGCA

15238
PIT

490-134967 Chain of Custody

Uncorrected temp 16.6 °C
Thermometer ID 12
CF 0 Initials TB

No Ice

T-WI-SR-001 effective 7/26/13

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-134967-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 134967
List Number: 1
Creator: Vest, Laura E

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-134967-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 134967
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 08/22/17 11:39 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-134967-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 134967
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 08/22/17 12:57 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17.0,17.0,17.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134967-1
SDG: Wilson Station, Wilson Landfill (WL)

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-134967-2	MW-5	87.0
490-134967-3	MW-6	86.7
490-134967-4	MW-7	85.3
490-134967-5	MW-8	82.3
490-135088-4	MW-10	95.6
490-135088-6	FIELD BLANK	100

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-134967-2	MW-5	87.0	86.0
490-134967-3	MW-6	86.7	92.0
490-134967-4	MW-7	85.3	84.9
490-134967-5	MW-8	82.3	89.0
490-135088-4	MW-10	95.6	81.1
490-135088-6	FIELD BLANK	92.9	92.3

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-137769-2
TestAmerica SDG: Wilson Station, Wilson Landfill (WL)
Client Project/Site: WL CCR Groundwater-Round 8
Sampling Event: Big Rivers CCR/SemiAnnual GW
Revision: 1

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 3:49:14 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-137769-2	MW-5	Water	09/28/17 15:50	09/30/17 10:10
490-137769-3	MW-8	Water	09/28/17 14:05	09/30/17 10:10
490-137913-1	MW-6	Water	09/29/17 13:00	10/03/17 10:05
490-137913-2	MW-7	Water	09/29/17 14:55	10/03/17 10:05
490-138223-4	MW-10	Water	10/02/17 12:15	10/06/17 09:30
490-138223-5	Field Blank	Water	10/03/17 16:25	10/06/17 09:30

Job ID: 490-137769-2

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-137769-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 9/30/2017 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.1º C and 0.6º C.

HPLC/IC
Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-5 (490-137769-2) and MW-8 (490-137769-3). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-464617 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte oncentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-465355 contained chloride and sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of the samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-465955 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-464617 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 490-137913-2

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-137913-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt

Job ID: 490-137913-2 (Continued)

Laboratory: TestAmerica Nashville (Continued)

The samples were received on 10/3/2017 10:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-465355 contained chloride and sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of the samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-465955 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-6 (490-137913-1) and MW-7 (490-137913-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
Method(s) PrecSep_0: Radium 228 Prep Batch 160-331664: The following samples were reduced due to re-analysis: MW-6 (490-137913-1) and MW-7 (490-137913-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 490-138223-2

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-138223-2

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 10/6/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.2º C, 1.6º C and 4.4º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-466126 contained Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-466382 contained Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The following sample was diluted due to the nature of the sample matrix: MW-10 (490-138223-4). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-466126 were outside control

Job ID: 490-138223-2 (Continued)

Laboratory: TestAmerica Nashville (Continued)

limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-466382. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD

Method(s) PrecSep-21: Radium 226 Prep Batch 160-331346: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. MW-10 (490-138223-4) and Field Blank (490-138223-5)

Method(s) PrecSep_0: Radium Prep Batch 160-331357: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. MW-10 (490-138223-4) and Field Blank (490-138223-5)

Method(s) 904.0: Radium-228 Prep Batch 160-331357: The method blank (MB) has activity above the MDC and RL. This analyte was not observed above the requested limit in the associated samples; therefore the sample data was not adversely affected by this excursion. The data have been qualified and reported. MW-10 (490-138223-4), Field Blank (490-138223-5), (LCS 160-331357/2-A), (LCSD 160-331357/3-A) and (MB 160-331357/1-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
U	Result is less than the sample detection limit.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 09/28/17 15:50
Date Received: 09/30/17 10:10

Lab Sample ID: 490-137769-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	158	B	60.0	4.00	mg/L			10/04/17 12:57	20
Fluoride	0.156	J	1.00	0.0100	mg/L			10/02/17 14:15	1
Sulfate	1860	B	500	3.00	mg/L			10/04/17 13:15	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0398	J	0.0500	0.00959	mg/L		10/04/17 11:49	10/05/17 18:55	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000250	J	0.00200	0.0000213	mg/L		10/04/17 11:39	10/06/17 00:11	1
Arsenic	0.00254	J	0.00500	0.000118	mg/L		10/04/17 11:39	10/06/17 00:11	1
Barium	0.0102	J	0.200	0.000270	mg/L		10/04/17 11:39	10/06/17 00:11	1
Beryllium	ND		0.00200	0.000102	mg/L		10/04/17 11:39	10/06/17 00:11	1
Boron	0.810	J	1.00	0.00339	mg/L		10/04/17 11:39	10/06/17 00:11	1
Cadmium	ND		0.00100	0.000152	mg/L		10/04/17 11:39	10/06/17 00:11	1
Calcium	493		1.00	0.0412	mg/L		10/04/17 11:39	10/06/17 00:11	1
Chromium	ND		0.00300	0.000339	mg/L		10/04/17 11:39	10/06/17 00:11	1
Cobalt	0.00510		0.00500	0.0000218	mg/L		10/04/17 11:39	10/06/17 00:11	1
Lead	0.000113	J	0.00500	0.0000675	mg/L		10/04/17 11:39	10/06/17 00:11	1
Molybdenum	0.00408	J	0.0100	0.000873	mg/L		10/04/17 11:39	10/06/17 00:11	1
Selenium	ND		0.0100	0.000348	mg/L		10/04/17 11:39	10/06/17 00:11	1
Thallium	ND		0.00100	0.0000360	mg/L		10/04/17 11:39	10/06/17 00:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/02/17 13:39	10/02/17 22:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.74		0.100	0.100	SU			10/06/17 10:15	1
Temperature	21.7		0.100	0.100	Degrees C			10/06/17 10:15	1
Total Dissolved Solids	3090		20.0	14.0	mg/L			09/30/17 17:35	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.170		0.0759	0.0774	1.00	0.0805	pCi/L	10/04/17 09:12	10/26/17 08:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*10/04/17 09:12*	*10/26/17 08:43*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.840		0.267	0.278	1.00	0.353	pCi/L	10/04/17 09:52	10/12/17 09:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*10/04/17 09:52*	*10/12/17 09:49*	*1*

Client Sample ID: MW-5
Date Collected: 09/28/17 15:50
Date Received: 09/30/17 10:10

Lab Sample ID: 490-137769-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	10/04/17 09:52	10/12/17 09:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.278	0.289	5.00	0.353	pCi/L		10/27/17 15:08	1

Client Sample ID: MW-8

Date Collected: 09/28/17 14:05
Date Received: 09/30/17 10:10

Lab Sample ID: 490-137769-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.82**	**B**	3.00	0.200	mg/L			10/02/17 14:51	1
Fluoride	**0.298**	**J**	1.00	0.0100	mg/L			10/02/17 14:51	1
Sulfate	**900**	**B**	250	1.50	mg/L			10/04/17 13:33	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/04/17 11:49	10/05/17 19:00	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000177**	**J**	0.00200	0.0000213	mg/L		10/04/17 11:39	10/06/17 00:29	1
Arsenic	**0.00515**		0.00500	0.000118	mg/L		10/04/17 11:39	10/06/17 00:29	1
Barium	**0.0184**	**J**	0.200	0.000270	mg/L		10/04/17 11:39	10/06/17 00:29	1
Beryllium	ND		0.00200	0.000102	mg/L		10/04/17 11:39	10/06/17 00:29	1
Boron	**0.0207**	**J**	1.00	0.00339	mg/L		10/04/17 11:39	10/06/17 00:29	1
Cadmium	ND		0.00100	0.000152	mg/L		10/04/17 11:39	10/06/17 00:29	1
Calcium	**214**		1.00	0.0412	mg/L		10/04/17 11:39	10/06/17 00:29	1
Chromium	ND		0.00300	0.000339	mg/L		10/04/17 11:39	10/06/17 00:29	1
Cobalt	**0.00102**	**J**	0.00500	0.0000218	mg/L		10/04/17 11:39	10/06/17 00:29	1
Lead	ND		0.00500	0.0000675	mg/L		10/04/17 11:39	10/06/17 00:29	1
Molybdenum	**0.0153**		0.0100	0.000873	mg/L		10/04/17 11:39	10/06/17 00:29	1
Selenium	ND		0.0100	0.000348	mg/L		10/04/17 11:39	10/06/17 00:29	1
Thallium	ND		0.00100	0.0000360	mg/L		10/04/17 11:39	10/06/17 00:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/02/17 13:39	10/02/17 22:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.46**		0.100	0.100	SU			10/06/17 10:15	1
Temperature	**22.0**		0.100	0.100	Degrees C			10/06/17 10:15	1
Total Dissolved Solids	**1520**		10.0	7.00	mg/L			09/30/17 17:35	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.594**		0.124	0.135	1.00	0.0662	pCi/L	10/04/17 09:12	10/26/17 08:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*10/04/17 09:12*	*10/26/17 08:43*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.307	U	0.211	0.213	1.00	0.327	pCi/L	10/04/17 09:52	10/12/17 09:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*10/04/17 09:52*	*10/12/17 09:49*	*1*

Client Sample ID: MW-8
Date Collected: 09/28/17 14:05
Date Received: 09/30/17 10:10

Lab Sample ID: 490-137769-3
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.5		40 - 110	10/04/17 09:52	10/12/17 09:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.901		0.245	0.252	5.00	0.327	pCi/L		10/27/17 15:08	1

Client Sample ID: MW-6

Date Collected: 09/29/17 13:00
Date Received: 10/03/17 10:05

Lab Sample ID: 490-137913-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.36	B	3.00	0.200	mg/L			10/04/17 15:03	1
Fluoride	0.181	J	1.00	0.0100	mg/L			10/04/17 15:03	1
Sulfate	1630	B	1000	6.00	mg/L			10/06/17 12:33	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0472	J	0.0500	0.00959	mg/L		10/06/17 11:56	10/16/17 09:53	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000637	J B	0.00200	0.0000213	mg/L		10/06/17 11:58	10/07/17 09:58	1
Arsenic	0.00632		0.00500	0.000118	mg/L		10/06/17 11:58	10/07/17 09:58	1
Barium	0.0113	J	0.200	0.000270	mg/L		10/06/17 11:58	10/07/17 09:58	1
Beryllium	ND		0.00200	0.000102	mg/L		10/06/17 11:58	10/07/17 09:58	1
Boron	0.328	J	1.00	0.00339	mg/L		10/06/17 11:58	10/09/17 22:06	1
Cadmium	ND		0.00100	0.000152	mg/L		10/06/17 11:58	10/07/17 09:58	1
Calcium	459		1.00	0.0412	mg/L		10/06/17 11:58	10/07/17 09:58	1
Chromium	0.000528	J	0.00300	0.000339	mg/L		10/06/17 11:58	10/07/17 09:58	1
Cobalt	0.00686		0.00500	0.0000218	mg/L		10/06/17 11:58	10/07/17 09:58	1
Lead	0.000272	J	0.00500	0.0000675	mg/L		10/06/17 11:58	10/07/17 09:58	1
Molybdenum	0.00762	J	0.0100	0.000873	mg/L		10/06/17 11:58	10/07/17 09:58	1
Selenium	ND		0.0100	0.000348	mg/L		10/06/17 11:58	10/07/17 09:58	1
Thallium	0.0000440	J	0.00100	0.0000360	mg/L		10/06/17 11:58	10/07/17 09:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000161	J F1	0.000200	0.000100	mg/L		10/04/17 12:39	10/04/17 18:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.53		0.100	0.100	SU			10/06/17 10:15	1
Temperature	21.7		0.100	0.100	Degrees C			10/06/17 10:15	1
Total Dissolved Solids	2900		20.0	14.0	mg/L			10/05/17 16:19	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.325		0.101	0.105	1.00	0.0852	pCi/L	10/05/17 10:25	10/27/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*10/05/17 10:25*	*10/27/17 05:44*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.313	U	0.296	0.297	1.00	0.478	pCi/L	10/13/17 09:23	10/19/17 13:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*10/13/17 09:23*	*10/19/17 13:47*	*1*

Client Sample ID: MW-6
Date Collected: 09/29/17 13:00
Date Received: 10/03/17 10:05

Lab Sample ID: 490-137913-1
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	10/13/17 09:23	10/19/17 13:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.639		0.313	0.315	5.00	0.478	pCi/L		10/30/17 13:18	1

Client Sample ID: MW-7

Date Collected: 09/29/17 14:55
Date Received: 10/03/17 10:05

Lab Sample ID: 490-137913-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.54**	**B**	3.00	0.200	mg/L			10/04/17 16:33	1
Fluoride	**0.314**	**J**	1.00	0.0100	mg/L			10/04/17 16:33	1
Sulfate	**1780**	**B**	500	3.00	mg/L			10/06/17 12:51	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0278**	**J**	0.0500	0.00959	mg/L		10/06/17 11:56	10/16/17 09:58	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000450**	**J B**	0.00200	0.0000213	mg/L		10/06/17 11:58	10/07/17 10:04	1
Arsenic	**0.00197**	**J**	0.00500	0.000118	mg/L		10/06/17 11:58	10/07/17 10:04	1
Barium	**0.0122**	**J**	0.200	0.000270	mg/L		10/06/17 11:58	10/07/17 10:04	1
Beryllium	ND		0.00200	0.000102	mg/L		10/06/17 11:58	10/07/17 10:04	1
Boron	**0.280**	**J**	1.00	0.00339	mg/L		10/06/17 11:58	10/09/17 22:11	1
Cadmium	ND		0.00100	0.000152	mg/L		10/06/17 11:58	10/07/17 10:04	1
Calcium	**269**		1.00	0.0412	mg/L		10/06/17 11:58	10/07/17 10:04	1
Chromium	ND		0.00300	0.000339	mg/L		10/06/17 11:58	10/07/17 10:04	1
Cobalt	**0.00454**	**J**	0.00500	0.0000218	mg/L		10/06/17 11:58	10/07/17 10:04	1
Lead	ND		0.00500	0.0000675	mg/L		10/06/17 11:58	10/07/17 10:04	1
Molybdenum	**0.00294**	**J**	0.0100	0.000873	mg/L		10/06/17 11:58	10/07/17 10:04	1
Selenium	ND		0.0100	0.000348	mg/L		10/06/17 11:58	10/07/17 10:04	1
Thallium	ND		0.00100	0.0000360	mg/L		10/06/17 11:58	10/07/17 10:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/04/17 12:39	10/04/17 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.81**		0.100	0.100	SU			10/06/17 10:15	1
Temperature	**22.0**		0.100	0.100	Degrees C			10/06/17 10:15	1
Total Dissolved Solids	**1590**		20.0	14.0	mg/L			10/05/17 16:19	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.104**		0.0647	0.0653	1.00	0.0863	pCi/L	10/05/17 10:25	10/27/17 05:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*10/05/17 10:25*	*10/27/17 05:44*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.675**		0.372	0.377	1.00	0.565	pCi/L	10/13/17 09:23	10/19/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*10/13/17 09:23*	*10/19/17 13:46*	*1*

Client Sample ID: MW-7
Date Collected: 09/29/17 14:55
Date Received: 10/03/17 10:05

Lab Sample ID: 490-137913-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.9		40 - 110	10/13/17 09:23	10/19/17 13:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.779		0.378	0.383	5.00	0.565	pCi/L		10/30/17 13:18	1

Client Sample ID: MW-10

Date Collected: 10/02/17 12:15
Date Received: 10/06/17 09:30

Lab Sample ID: 490-138223-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63.3		60.0	4.00	mg/L			10/07/17 15:05	20
Fluoride	0.112	J	1.00	0.0100	mg/L			10/07/17 14:54	1
Sulfate	2250	B	500	3.00	mg/L			10/09/17 13:26	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0124	J	0.0500	0.00959	mg/L		10/12/17 11:48	10/17/17 21:46	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000280	J B	0.00200	0.0000213	mg/L		10/12/17 11:50	10/13/17 11:14	1
Arsenic	0.00111	J B	0.00500	0.000118	mg/L		10/12/17 11:50	10/13/17 11:14	1
Barium	0.00958	J	0.200	0.000270	mg/L		10/12/17 11:50	10/13/17 11:14	1
Beryllium	ND		0.00200	0.000102	mg/L		10/12/17 11:50	10/13/17 11:14	1
Boron	0.181	J	1.00	0.00339	mg/L		10/12/17 11:50	10/14/17 01:39	1
Cadmium	ND		0.00100	0.000152	mg/L		10/12/17 11:50	10/13/17 11:14	1
Calcium	379	B	1.00	0.0412	mg/L		10/12/17 11:50	10/13/17 11:14	1
Chromium	0.000420	J	0.00300	0.000339	mg/L		10/12/17 11:50	10/13/17 11:14	1
Cobalt	0.139		0.00500	0.0000218	mg/L		10/12/17 11:50	10/13/17 11:14	1
Lead	0.0000730	J	0.00500	0.0000675	mg/L		10/12/17 11:50	10/13/17 11:14	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/12/17 11:50	10/13/17 11:14	1
Selenium	0.000720	J B	0.0100	0.000348	mg/L		10/12/17 11:50	10/13/17 11:14	1
Thallium	ND		0.00100	0.0000360	mg/L		10/12/17 11:50	10/13/17 11:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/09/17 11:04	10/09/17 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.16		0.100	0.100	SU			10/10/17 15:20	1
Temperature	21.6		0.100	0.100	Degrees C			10/10/17 15:20	1
Total Dissolved Solids	3300		20.0	14.0	mg/L			10/07/17 16:25	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.172		0.0925	0.0938	1.00	0.119	pCi/L	10/11/17 09:06	11/02/17 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*10/11/17 09:06*	*11/02/17 07:05*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.334	U	0.261	0.262	1.00	0.412	pCi/L	10/11/17 09:28	10/20/17 13:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*10/11/17 09:28*	*10/20/17 13:52*	*1*

Client Sample ID: MW-10
Date Collected: 10/02/17 12:15
Date Received: 10/06/17 09:30

Lab Sample ID: 490-138223-4
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.7		40 - 110	10/11/17 09:28	10/20/17 13:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.506		0.277	0.278	5.00	0.412	pCi/L		11/06/17 09:01	1

Client Sample ID: Field Blank

Date Collected: 10/03/17 16:25
Date Received: 10/06/17 09:30

Lab Sample ID: 490-138223-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			10/07/17 15:17	1
Fluoride	ND		1.00	0.0100	mg/L			10/07/17 15:17	1
Sulfate	**0.142**	**J B**	5.00	0.0300	mg/L			10/07/17 15:17	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/12/17 11:48	10/17/17 21:52	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000251**	**J B**	0.00200	0.0000213	mg/L		10/12/17 11:50	10/13/17 11:16	1
Arsenic	**0.000170**	**J B**	0.00500	0.000118	mg/L		10/12/17 11:50	10/13/17 11:16	1
Barium	ND		0.200	0.000270	mg/L		10/12/17 11:50	10/13/17 11:16	1
Beryllium	ND		0.00200	0.000102	mg/L		10/12/17 11:50	10/13/17 11:16	1
Boron	**0.00697**	**J**	1.00	0.00339	mg/L		10/12/17 11:50	10/14/17 01:57	1
Cadmium	ND		0.00100	0.000152	mg/L		10/12/17 11:50	10/13/17 11:16	1
Calcium	**0.174**	**J B**	1.00	0.0412	mg/L		10/12/17 11:50	10/13/17 11:16	1
Chromium	**0.000354**	**J**	0.00300	0.000339	mg/L		10/12/17 11:50	10/13/17 11:16	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/12/17 11:50	10/13/17 11:16	1
Lead	ND		0.00500	0.0000675	mg/L		10/12/17 11:50	10/13/17 11:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/12/17 11:50	10/13/17 11:16	1
Selenium	ND		0.0100	0.000348	mg/L		10/12/17 11:50	10/13/17 11:16	1
Thallium	ND		0.00100	0.0000360	mg/L		10/12/17 11:50	10/13/17 11:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/09/17 11:04	10/09/17 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.00**		0.100	0.100	SU			10/10/17 15:20	1
Temperature	**21.0**		0.100	0.100	Degrees C			10/10/17 15:20	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/07/17 16:25	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0224	U	0.0433	0.0434	1.00	0.0791	pCi/L	10/11/17 09:06	11/02/17 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/11/17 09:06*	*11/02/17 07:05*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0563	U	0.188	0.188	1.00	0.331	pCi/L	10/11/17 09:28	10/20/17 13:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/11/17 09:28*	*10/20/17 13:52*	*1*

Client Sample ID: Field Blank

Date Collected: 10/03/17 16:25
Date Received: 10/06/17 09:30

Lab Sample ID: 490-138223-5

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	10/11/17 09:28	10/20/17 13:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0787	U	0.193	0.193	5.00	0.331	pCi/L		11/06/17 09:01	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-465355/3
Matrix: Water
Analysis Batch: 465355

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4286	J	3.00	0.200	mg/L			10/04/17 10:50	1
Fluoride	ND		1.00	0.0100	mg/L			10/04/17 10:50	1
Sulfate	0.1992	J	5.00	0.0300	mg/L			10/04/17 10:50	1

Lab Sample ID: LCS 490-465355/4
Matrix: Water
Analysis Batch: 465355

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.895		mg/L		99	80 - 120
Fluoride	1.00	0.9625	J	mg/L		96	80 - 120
Sulfate	10.0	10.44		mg/L		104	80 - 120

Lab Sample ID: LCSD 490-465355/5
Matrix: Water
Analysis Batch: 465355

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.983		mg/L		100	80 - 120	1	20
Fluoride	1.00	0.9830	J	mg/L		98	80 - 120	2	20
Sulfate	10.0	10.42		mg/L		104	80 - 120	0	20

Lab Sample ID: 490-137913-1 MS
Matrix: Water
Analysis Batch: 465355

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.36	B	10.0	15.48		mg/L		101	80 - 120
Fluoride	0.181	J	1.00	1.137		mg/L		95	80 - 120

Lab Sample ID: 490-137913-1 MSD
Matrix: Water
Analysis Batch: 465355

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.36	B	10.0	15.79		mg/L		104	80 - 120	2	20
Fluoride	0.181	J	1.00	1.138		mg/L		95	80 - 120	0	20

Lab Sample ID: MB 490-465955/3
Matrix: Water
Analysis Batch: 465955

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4811	J	3.00	0.200	mg/L			10/06/17 11:03	1
Fluoride	ND		1.00	0.0100	mg/L			10/06/17 11:03	1
Sulfate	0.2966	J	5.00	0.0300	mg/L			10/06/17 11:03	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-465955/4
Matrix: Water
Analysis Batch: 465955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.47		mg/L		105	80 - 120
Fluoride	1.00	1.002		mg/L		100	80 - 120
Sulfate	10.0	10.55		mg/L		105	80 - 120

Lab Sample ID: LCSD 490-465955/5
Matrix: Water
Analysis Batch: 465955

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.50		mg/L		105	80 - 120	0	20
Fluoride	1.00	1.006		mg/L		100	80 - 120	0	20
Sulfate	10.0	10.53		mg/L		105	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-225102/1-A
Matrix: Water
Analysis Batch: 226037

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 225102

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/06/17 11:55	10/16/17 08:28	1

Lab Sample ID: LCS 180-225102/2-A
Matrix: Water
Analysis Batch: 226037

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 225102

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.056		mg/L		106	80 - 120

Lab Sample ID: 180-70970-E-22-B MS
Matrix: Water
Analysis Batch: 226037

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 225102

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	1.043		mg/L		104	75 - 125

Lab Sample ID: 180-70970-E-22-C MSD
Matrix: Water
Analysis Batch: 226037

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 225102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	1.054		mg/L		105	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-225103/1-A
Matrix: Water
Analysis Batch: 225185

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 225103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001120	J	0.00200	0.0000213	mg/L		10/06/17 11:58	10/07/17 10:01	1
Arsenic	ND		0.00500	0.000118	mg/L		10/06/17 11:58	10/07/17 10:01	1
Barium	ND		0.200	0.000270	mg/L		10/06/17 11:58	10/07/17 10:01	1
Beryllium	ND		0.00200	0.000102	mg/L		10/06/17 11:58	10/07/17 10:01	1
Cadmium	ND		0.00100	0.000152	mg/L		10/06/17 11:58	10/07/17 10:01	1
Calcium	ND		1.00	0.0412	mg/L		10/06/17 11:58	10/07/17 10:01	1
Chromium	ND		0.00300	0.000339	mg/L		10/06/17 11:58	10/07/17 10:01	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/06/17 11:58	10/07/17 10:01	1
Lead	ND		0.00500	0.0000675	mg/L		10/06/17 11:58	10/07/17 10:01	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/06/17 11:58	10/07/17 10:01	1
Selenium	ND		0.0100	0.000348	mg/L		10/06/17 11:58	10/07/17 10:01	1
Thallium	ND		0.00100	0.0000360	mg/L		10/06/17 11:58	10/07/17 10:01	1

Lab Sample ID: MB 180-225103/1-A
Matrix: Water
Analysis Batch: 225403

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 225103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		10/06/17 11:58	10/09/17 21:35	1

Lab Sample ID: LCS 180-225103/2-A
Matrix: Water
Analysis Batch: 225185

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 225103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5317		mg/L		106	80 - 120
Arsenic	0.0400	0.04051		mg/L		101	80 - 120
Barium	2.00	1.960		mg/L		98	80 - 120
Beryllium	0.0500	0.04584		mg/L		92	80 - 120
Cadmium	0.0500	0.05563		mg/L		111	80 - 120
Calcium	50.0	53.31		mg/L		107	80 - 120
Chromium	0.200	0.2010		mg/L		101	80 - 120
Cobalt	0.500	0.5100		mg/L		102	80 - 120
Lead	0.0200	0.02149		mg/L		107	80 - 120
Molybdenum	1.00	0.9975		mg/L		100	80 - 120
Selenium	0.0100	0.009474	J	mg/L		95	80 - 120
Thallium	0.0500	0.05361		mg/L		107	80 - 120

Lab Sample ID: LCS 180-225103/2-A
Matrix: Water
Analysis Batch: 225403

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 225103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.123		mg/L		112	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-71002-F-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 225185 — **Prep Batch: 225103**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000358	J B	0.500	0.5256		mg/L		105	75 - 125
Arsenic	0.000274	J	0.0400	0.04021		mg/L		100	75 - 125
Barium	0.0796	J	2.00	1.967		mg/L		94	75 - 125
Beryllium	ND		0.0500	0.04591		mg/L		92	75 - 125
Cadmium	ND		0.0500	0.05506		mg/L		110	75 - 125
Calcium	52.4		50.0	105.1		mg/L		105	75 - 125
Chromium	0.00169	J	0.200	0.2025		mg/L		100	75 - 125
Cobalt	0.000126	J	0.500	0.5161		mg/L		103	75 - 125
Lead	0.000373	J	0.0200	0.02157		mg/L		106	75 - 125
Molybdenum	ND		1.00	0.9890		mg/L		99	75 - 125
Selenium	0.000492	J	0.0100	0.009877	J	mg/L		94	75 - 125
Thallium	ND		0.0500	0.05220		mg/L		104	75 - 125

Lab Sample ID: 180-71002-F-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 225403 — **Prep Batch: 225103**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.0115	J	1.00	1.116		mg/L			

Lab Sample ID: 180-71002-F-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 225185 — **Prep Batch: 225103**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000358	J B	0.500	0.5291		mg/L		106	75 - 125	1	20
Arsenic	0.000274	J	0.0400	0.04041		mg/L		100	75 - 125	1	20
Barium	0.0796	J	2.00	1.962		mg/L		94	75 - 125	0	20
Beryllium	ND		0.0500	0.04593		mg/L		92	75 - 125	0	20
Cadmium	ND		0.0500	0.05461		mg/L		109	75 - 125	1	20
Calcium	52.4		50.0	104.1		mg/L		103	75 - 125	1	20
Chromium	0.00169	J	0.200	0.2005		mg/L		99	75 - 125	1	20
Cobalt	0.000126	J	0.500	0.5132		mg/L		103	75 - 125	1	20
Lead	0.000373	J	0.0200	0.02151		mg/L		106	75 - 125	0	20
Molybdenum	ND		1.00	1.009		mg/L		101	75 - 125	2	20
Selenium	0.000492	J	0.0100	0.009633	J	mg/L		91	75 - 125	3	20
Thallium	ND		0.0500	0.05226		mg/L		105	75 - 125	0	20

Lab Sample ID: 180-71002-F-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 225403 — **Prep Batch: 225103**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.0115	J	1.00	1.139		mg/L					

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-465378/1-A
Matrix: Water
Analysis Batch: 465771

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 465378

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/04/17 12:39	10/04/17 18:27	1

Lab Sample ID: LCS 490-465378/2-A
Matrix: Water
Analysis Batch: 465771

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 465378

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00100	0.0007996		mg/L		80	80 - 120		

Lab Sample ID: 490-137913-1 MS
Matrix: Water
Analysis Batch: 465771

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 465378

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.000161	J F1	0.00100	0.0009238		mg/L		76	75 - 125		

Lab Sample ID: 490-137913-1 MSD
Matrix: Water
Analysis Batch: 465771

Client Sample ID: MW-6
Prep Type: Total/NA
Prep Batch: 465378

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000161	J F1	0.00100	0.0008928	F1	mg/L		73	75 - 125	3	20

Method: 9040C - pH

Lab Sample ID: LCS 490-465918/1
Matrix: Water
Analysis Batch: 465918

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	6.950		SU		99	98 - 103		

Lab Sample ID: 490-137535-B-3 DU
Matrix: Water
Analysis Batch: 465918

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.98			6.980		SU				0	20
Temperature	21.8			21.80		Degrees C				0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-463850/1
Matrix: Water
Analysis Batch: 463850

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/05/17 16:19	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-463850/2
Matrix: Water
Analysis Batch: 463850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			100	98.00		mg/L		98	90 - 110		

Lab Sample ID: LCSD 490-463850/3
Matrix: Water
Analysis Batch: 463850

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			100	97.00		mg/L		97	90 - 110	1	20

Lab Sample ID: 490-137913-1 DU
Matrix: Water
Analysis Batch: 463850

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2900			2798		mg/L				3	20

Lab Sample ID: 490-138012-B-1 DU
Matrix: Water
Analysis Batch: 463850

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	7340			7160		mg/L				2	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-330509/1-A
Matrix: Water
Analysis Batch: 334384

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330509

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03254	U	0.0413	0.0414	1.00	0.0682	pCi/L	10/05/17 10:25	10/27/17 05:43	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/05/17 10:25*	*10/27/17 05:43*	*1*

Lab Sample ID: LCS 160-330509/2-A
Matrix: Water
Analysis Batch: 334384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 330509

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.760		1.00	1.00	0.0655	pCi/L	102	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.1*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 160-24815-A-1-A DU
Matrix: Water
Analysis Batch: 334384

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 330509

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	-0.00430	U		0.01599	U	0.0581	1.00	0.113	pCi/L			0.19	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*94.1*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-331664/1-A
Matrix: Water
Analysis Batch: 332589

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 331664

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05004	U	0.235	0.235	1.00	0.413	pCi/L	10/13/17 09:23	10/19/17 13:45	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/13/17 09:23*	*10/19/17 13:45*	*1*
Y Carrier	*73.6*		*40 - 110*	*10/13/17 09:23*	*10/19/17 13:45*	*1*

Lab Sample ID: LCS 160-331664/2-A
Matrix: Water
Analysis Batch: 332589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 331664

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.8	17.34		1.83	1.00	0.408	pCi/L	136	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*77.4*		*40 - 110*

Lab Sample ID: 160-24815-A-2-C DU
Matrix: Water
Analysis Batch: 332589

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 331664

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.380	U		0.5187		0.332	1.00	0.501	pCi/L			0.21	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*90.3*		*40 - 110*
Y Carrier	*85.6*		*40 - 110*

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-70809-A-10 DU
Matrix: Water
Analysis Batch: 334891

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	2.33			2.315		0.393	5.00	0.340	pCi/L			0.02	

HPLC/IC

Analysis Batch: 464617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	9056A	
490-137769-3	MW-8	Total/NA	Water	9056A	

Analysis Batch: 465355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	9056A	
490-137769-2	MW-5	Total/NA	Water	9056A	
490-137769-3	MW-8	Total/NA	Water	9056A	
490-137913-1	MW-6	Total/NA	Water	9056A	
490-137913-2	MW-7	Total/NA	Water	9056A	
MB 490-465355/3	Method Blank	Total/NA	Water	9056A	
LCS 490-465355/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-465355/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-137913-1 MS	MW-6	Total/NA	Water	9056A	
490-137913-1 MSD	MW-6	Total/NA	Water	9056A	

Analysis Batch: 465955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total/NA	Water	9056A	
490-137913-2	MW-7	Total/NA	Water	9056A	
MB 490-465955/3	Method Blank	Total/NA	Water	9056A	
LCS 490-465955/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-465955/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 466126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	9056A	
490-138223-4	MW-10	Total/NA	Water	9056A	
490-138223-5	Field Blank	Total/NA	Water	9056A	

Analysis Batch: 466382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 224863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total Recoverable	Water	3005A	
490-137769-3	MW-8	Total Recoverable	Water	3005A	

Prep Batch: 224866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total Recoverable	Water	3005A	
490-137769-3	MW-8	Total Recoverable	Water	3005A	

Analysis Batch: 225040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total Recoverable	Water	6010C	224866
490-137769-3	MW-8	Total Recoverable	Water	6010C	224866

Metals (Continued)

Prep Batch: 225102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total Recoverable	Water	3005A	
490-137913-2	MW-7	Total Recoverable	Water	3005A	
MB 180-225102/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-225102/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70970-E-22-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70970-E-22-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 225103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total Recoverable	Water	3005A	
490-137913-2	MW-7	Total Recoverable	Water	3005A	
MB 180-225103/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-225103/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-71002-F-1-B MS	Matrix Spike	Dissolved	Water	3005A	
180-71002-F-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Analysis Batch: 225132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total Recoverable	Water	6020A	224863
490-137769-3	MW-8	Total Recoverable	Water	6020A	224863

Analysis Batch: 225185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total Recoverable	Water	6020A	225103
490-137913-2	MW-7	Total Recoverable	Water	6020A	225103
MB 180-225103/1-A	Method Blank	Total Recoverable	Water	6020A	225103
LCS 180-225103/2-A	Lab Control Sample	Total Recoverable	Water	6020A	225103
180-71002-F-1-B MS	Matrix Spike	Dissolved	Water	6020A	225103
180-71002-F-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	225103

Analysis Batch: 225403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total Recoverable	Water	6020A	225103
490-137913-2	MW-7	Total Recoverable	Water	6020A	225103
MB 180-225103/1-A	Method Blank	Total Recoverable	Water	6020A	225103
LCS 180-225103/2-A	Lab Control Sample	Total Recoverable	Water	6020A	225103
180-71002-F-1-B MS	Matrix Spike	Dissolved	Water	6020A	225103
180-71002-F-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	225103

Prep Batch: 225654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total Recoverable	Water	3005A	
490-138223-5	Field Blank	Total Recoverable	Water	3005A	

Prep Batch: 225656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total Recoverable	Water	3005A	
490-138223-5	Field Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 225822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total Recoverable	Water	6020A	225656
490-138223-5	Field Blank	Total Recoverable	Water	6020A	225656

Analysis Batch: 225898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total Recoverable	Water	6020A	225656
490-138223-5	Field Blank	Total Recoverable	Water	6020A	225656

Analysis Batch: 226037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total Recoverable	Water	6010C	225102
490-137913-2	MW-7	Total Recoverable	Water	6010C	225102
MB 180-225102/1-A	Method Blank	Total Recoverable	Water	6010C	225102
LCS 180-225102/2-A	Lab Control Sample	Total Recoverable	Water	6010C	225102
180-70970-E-22-B MS	Matrix Spike	Total Recoverable	Water	6010C	225102
180-70970-E-22-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	225102

Analysis Batch: 226160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total Recoverable	Water	6010C	225654
490-138223-5	Field Blank	Total Recoverable	Water	6010C	225654

Prep Batch: 464744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	7470A	
490-137769-3	MW-8	Total/NA	Water	7470A	

Analysis Batch: 464882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	7470A	464744
490-137769-3	MW-8	Total/NA	Water	7470A	464744

Prep Batch: 465378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total/NA	Water	7470A	
490-137913-2	MW-7	Total/NA	Water	7470A	
MB 490-465378/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-465378/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-137913-1 MS	MW-6	Total/NA	Water	7470A	
490-137913-1 MSD	MW-6	Total/NA	Water	7470A	

Analysis Batch: 465771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total/NA	Water	7470A	465378
490-137913-2	MW-7	Total/NA	Water	7470A	465378
MB 490-465378/1-A	Method Blank	Total/NA	Water	7470A	465378
LCS 490-465378/2-A	Lab Control Sample	Total/NA	Water	7470A	465378
490-137913-1 MS	MW-6	Total/NA	Water	7470A	465378
490-137913-1 MSD	MW-6	Total/NA	Water	7470A	465378

Metals (Continued)

Prep Batch: 466411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	7470A	
490-138223-5	Field Blank	Total/NA	Water	7470A	

Analysis Batch: 466612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	7470A	466411
490-138223-5	Field Blank	Total/NA	Water	7470A	466411

General Chemistry

Analysis Batch: 463849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	SM 2540C	
490-137769-3	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 463850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total/NA	Water	SM 2540C	
490-137913-2	MW-7	Total/NA	Water	SM 2540C	
MB 490-463850/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-463850/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-463850/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-137913-1 DU	MW-6	Total/NA	Water	SM 2540C	
490-138012-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 464143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	SM 2540C	
490-138223-5	Field Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 465918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	9040C	
490-137769-3	MW-8	Total/NA	Water	9040C	
490-137913-1	MW-6	Total/NA	Water	9040C	
490-137913-2	MW-7	Total/NA	Water	9040C	
LCS 490-465918/1	Lab Control Sample	Total/NA	Water	9040C	
490-137535-B-3 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 466827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	9040C	
490-138223-5	Field Blank	Total/NA	Water	9040C	

Rad

Prep Batch: 330236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	PrecSep-21	
490-137769-3	MW-8	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 330289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137769-2	MW-5	Total/NA	Water	PrecSep_0	
490-137769-3	MW-8	Total/NA	Water	PrecSep_0	

Prep Batch: 330509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total/NA	Water	PrecSep-21	
490-137913-2	MW-7	Total/NA	Water	PrecSep-21	
MB 160-330509/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-330509/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-24815-A-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 331346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	PrecSep-21	
490-138223-5	Field Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 331357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138223-4	MW-10	Total/NA	Water	PrecSep_0	
490-138223-5	Field Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 331664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137913-1	MW-6	Total/NA	Water	PrecSep_0	
490-137913-2	MW-7	Total/NA	Water	PrecSep_0	
MB 160-331664/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-331664/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-24815-A-2-C DU	Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-5

Date Collected: 09/28/17 15:50
Date Received: 09/30/17 10:10

Lab Sample ID: 490-137769-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			464617	10/02/17 14:15	T1C	TAL NSH
Total/NA	Analysis	9056A		20			465355	10/04/17 12:57	JHS	TAL NSH
Total/NA	Analysis	9056A		100			465355	10/04/17 13:15	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224866	10/04/17 11:49	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			225040	10/05/17 18:55	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224863	10/04/17 11:39	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	225132	10/06/17 00:11	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	464744	10/02/17 13:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			464882	10/02/17 22:02	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465918	10/06/17 10:15	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	463849	09/30/17 17:35	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.68 mL	1.0 g	330236	10/04/17 09:12	MBC	TAL SL
Total/NA	Analysis	903.0		1			333994	10/26/17 08:43	CDR	TAL SL
Total/NA	Prep	PrecSep_0			999.68 mL	1.0 g	330289	10/04/17 09:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			331468	10/12/17 09:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			334441	10/27/17 15:08	EAW	TAL SL

Client Sample ID: MW-8

Date Collected: 09/28/17 14:05
Date Received: 09/30/17 10:10

Lab Sample ID: 490-137769-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			464617	10/02/17 14:51	T1C	TAL NSH
Total/NA	Analysis	9056A		50			465355	10/04/17 13:33	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224866	10/04/17 11:49	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			225040	10/05/17 19:00	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224863	10/04/17 11:39	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	225132	10/06/17 00:29	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	464744	10/02/17 13:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			464882	10/02/17 22:05	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465918	10/06/17 10:15	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463849	09/30/17 17:35	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.67 mL	1.0 g	330236	10/04/17 09:12	MBC	TAL SL
Total/NA	Analysis	903.0		1			333994	10/26/17 08:43	CDR	TAL SL
Total/NA	Prep	PrecSep_0			999.67 mL	1.0 g	330289	10/04/17 09:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			331468	10/12/17 09:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			334441	10/27/17 15:08	EAW	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-6

Date Collected: 09/29/17 13:00
Date Received: 10/03/17 10:05

Lab Sample ID: 490-137913-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			465355	10/04/17 15:03	JHS	TAL NSH
Total/NA	Analysis	9056A		200			465955	10/06/17 12:33	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225102	10/06/17 11:56	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			226037	10/16/17 09:53	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225103	10/06/17 11:58	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225185	10/07/17 09:58	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225103	10/06/17 11:58	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225403	10/09/17 22:06	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	465378	10/04/17 12:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			465771	10/04/17 18:38	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465918	10/06/17 10:15	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	463850	10/05/17 16:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.65 mL	1.0 g	330509	10/05/17 10:25	LDE	TAL SL
Total/NA	Analysis	903.0		1			334384	10/27/17 05:44	ALD	TAL SL
Total/NA	Prep	PrecSep_0			749.89 mL	1.0 g	331664	10/13/17 09:23	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	332589	10/19/17 13:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			334891	10/30/17 13:18	EAW	TAL SL

Client Sample ID: MW-7

Date Collected: 09/29/17 14:55
Date Received: 10/03/17 10:05

Lab Sample ID: 490-137913-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			465355	10/04/17 16:33	JHS	TAL NSH
Total/NA	Analysis	9056A		100			465955	10/06/17 12:51	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225102	10/06/17 11:56	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			226037	10/16/17 09:58	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225103	10/06/17 11:58	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225185	10/07/17 10:04	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225103	10/06/17 11:58	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225403	10/09/17 22:11	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	465378	10/04/17 12:39	RDF	TAL NSH
Total/NA	Analysis	7470A		1			465771	10/04/17 18:52	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465918	10/06/17 10:15	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	463850	10/05/17 16:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	330509	10/05/17 10:25	LDE	TAL SL
Total/NA	Analysis	903.0		1			334384	10/27/17 05:44	ALD	TAL SL
Total/NA	Prep	PrecSep_0			750.03 mL	1.0 g	331664	10/13/17 09:23	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	332589	10/19/17 13:46	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			334891	10/30/17 13:18	EAW	TAL SL

Client Sample ID: MW-10

Date Collected: 10/02/17 12:15
Date Received: 10/06/17 09:30

Lab Sample ID: 490-138223-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			466126	10/07/17 14:54	T1C	TAL NSH
Total/NA	Analysis	9056A		20			466126	10/07/17 15:05	T1C	TAL NSH
Total/NA	Analysis	9056A		100			466382	10/09/17 13:26	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225654	10/12/17 11:48	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			226160	10/17/17 21:46	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225656	10/12/17 11:50	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225822	10/13/17 11:14	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225656	10/12/17 11:50	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	225898	10/14/17 01:39	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	466411	10/09/17 11:04	RDF	TAL NSH
Total/NA	Analysis	7470A		1			466612	10/09/17 17:13	BLG	TAL NSH
Total/NA	Analysis	9040C		1			466827	10/10/17 15:20	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	464143	10/07/17 16:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.33 mL	1.0 g	331346	10/11/17 09:06	LDE	TAL SL
Total/NA	Analysis	903.0		1			335316	11/02/17 07:05	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.33 mL	1.0 g	331357	10/11/17 09:28	LDE	TAL SL
Total/NA	Analysis	904.0		1			332859	10/20/17 13:52	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: Field Blank

Date Collected: 10/03/17 16:25
Date Received: 10/06/17 09:30

Lab Sample ID: 490-138223-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	10 mL	1.0 mL	466126	10/07/17 15:17	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225654	10/12/17 11:48	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			226160	10/17/17 21:52	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225656	10/12/17 11:50	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225822	10/13/17 11:16	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225656	10/12/17 11:50	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	225898	10/14/17 01:57	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	466411	10/09/17 11:04	RDF	TAL NSH
Total/NA	Analysis	7470A		1			466612	10/09/17 17:16	BLG	TAL NSH
Total/NA	Analysis	9040C		1			466827	10/10/17 15:20	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	464143	10/07/17 16:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	331346	10/11/17 09:06	LDE	TAL SL
Total/NA	Analysis	903.0		1			335316	11/02/17 07:05	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	331357	10/11/17 09:28	LDE	TAL SL
Total/NA	Analysis	904.0		1			332859	10/20/17 13:52	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			335780	11/06/17 09:01	EAW	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
9040C		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18 *
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-137769 Chain of Custody

Cooler Received/Opened On 9/30/2017 @ 1010

Time Samples Removed From Cooler 1315 Time Samples Placed In Storage 1356 (2 Hour Window)

1. Tracking # 4066 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID Raynger pH Strip Lot HC685554 Chlorine Strip Lot 0524175

2. Temperature of rep. sample or temp blank when opened: 0.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Front 1 Back

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) 4OZ

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ⬅ Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) 9-30-17

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial)

I certify that I attached a label with the unique LIMS number to each container (intial)

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
137769

COOLER RECEIPT FORM

Cooler Received/Opened On 9/30/2017 @1010

Time Samples Removed From Cooler 1715 Time Samples Placed In Storage 1356 (2 Hour Window)

1. Tracking # 4044 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID_31470366 pH Strip Lot HC697784 Chlorine Strip Lot 0524171F

2. Temperature of rep. sample or temp blank when opened: 0.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO ..NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 (Front)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES..NO..NA

I certify that I opened the cooler and answered questions 1-6 (intial) D.J.

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES..NO...NA

12. Did all container labels and tags agree with custody papers? YES..NO...NA

13a. Were VOA vials received? YES..NO..NA

b. Was there any observable headspace present in any VOA vial? YES...NO..NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES..NO..NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) D.J.

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES..NO..NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES..NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES..NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial)

I certify that I attached a label with the unique LIMS number to each container (intial)

21. Were there Non-Conformance issues at login? YES..NO Was a NCM generated? YES..NO..#_____

BIS = Broken in shipment

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 09/29/2017**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6010 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: WL CCR Groundwater-Round 8/2nd Semi-Annual	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: ~~490~~ 960
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	2320B-Carbonate & Bicarbonate Alk	Sample Specific Notes:
MW-1	9/28/17	1155	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-5	9/28/17	1550	G	Water	9	N	N	x	x	x	x	x	x	x	
MW-8	9/28/17	1405	G	Water	9	N	N	x	x	x	x	x	x	x	
DUPE	9/28/17	1244	G	Water	9	N	N	x	x	x	x	x	x	x	

Loc: 490
137769

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____

	4	4	3	7	3	7	7

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations) and 401 KAR Chapter 45 (Kentucky Regulations). See attached constituent list for analysis.

0.6 0.1

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 1110 9/29/2017	Received by:	Company: TA	Date/Time: 9-30-17 1610
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Part # 159470-434 RIT2 EXP 04/18

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERIC
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 02OCT17
ACTWGT: 10.00 LB MAN
CAD: 820425/CAFE3011

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7066
REF: S490-73895

FedEx Express

TUE - 03 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 4113 6453 8586

15238
PA-US PIT

E8 AGCA

Uncorrected temp 15.6 °C
Thermometer ID 13

No Ice

CF 0 Initials FB

PT-WI-SR-001 effective 7/26/13

490-137769 Waybill

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-63468.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-137769-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/30/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WL CCR Groundwater-Round 8	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (490-137769-1)	9/28/17	11:55 Central		Water			X	X	X	2	Historical Review required
MW-5 (490-137769-2)	9/28/17	15:50 Central		Water			X	X	X	2	Historical Review required
MW-8 (490-137769-3)	9/28/17	14:05 Central		Water			X	X	X	2	Historical Review required
DUPE (490-137769-4)	9/28/17	12:44 Central		Water			X	X	X	2	Historical Review required

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	10.2.17 2:15pm	TAN	[signature]	10/2/17 0911	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Mat 7D D

Chain of Custody Record

490-137769 Chain of Custody

estAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	No: -63469.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Page: Page 1 of 1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/25/2017		Job #: 490-137769-2
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: WL CCR Groundwater-Round 8	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X			X	
MW-1 (490-137769-1)	9/28/17	11:55 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-137769-2)	9/28/17	15:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-137769-3)	9/28/17	14:05 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-137769-4)	9/28/17	12:44 Central		Water			X	X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 10.2.17 2:15pm	Company TAA	Received by:	Date/Time: 10/3/17 900	Company TAA	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-137769-2
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 137769
List Number: 1
Creator: West, Derrick D

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-137769-2
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 137769
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 10/03/17 01:57 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-137769-2
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 137769
List Number: 3
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 10/03/17 01:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.2,8.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 8

TestAmerica Job ID: 490-137769-2
SDG: Wilson Station, Wilson Landfill (WL)

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
160-24815-A-1-A DU	Duplicate	94.1
490-137769-2	MW-5	92.0
490-137769-3	MW-8	95.0
490-137913-1	MW-6	87.3
490-137913-2	MW-7	91.2
490-138223-4	MW-10	88.2
490-138223-5	Field Blank	100
LCS 160-330509/2-A	Lab Control Sample	97.1
MB 160-330509/1-A	Method Blank	97.1

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
160-24815-A-2-C DU	Duplicate	90.3	85.6
490-137769-2	MW-5	92.0	90.1
490-137769-3	MW-8	95.0	90.5
490-137913-1	MW-6	99.1	88.2
490-137913-2	MW-7	94.4	87.9
490-138223-4	MW-10	88.2	86.7
490-138223-5	Field Blank	100	88.2
LCS 160-331664/2-A	Lab Control Sample	99.4	77.4
MB 160-331664/1-A	Method Blank	102	73.6

Tracer/Carrier Legend

Ba Carrier = Ba Carrier
Y Carrier = Y Carrier

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-138806-1
TestAmerica SDG: Wilson Station, Wilson Landfill (WL)
Client Project/Site: WL CCR Groundwater-Round 9
Sampling Event: Big Rivers CCR/SemiAnnual GW
Revision: 1

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
1/31/2018 4:01:33 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

Table of Contents

Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-138806-5	MW-5	Water	10/12/17 15:00	10/14/17 09:25
490-138806-6	MW-8	Water	10/12/17 14:00	10/14/17 09:25
490-138806-7	MW-6	Water	10/12/17 16:05	10/14/17 09:25
490-138806-8	MW-7	Water	10/12/17 16:50	10/14/17 09:25
490-138806-9	MW-10	Water	10/13/17 08:20	10/14/17 09:25
490-138806-10	DUPE	Water	10/12/17 17:01	10/14/17 09:25
490-138806-11	BLANK	Water	10/13/17 11:45	10/14/17 09:25

Job ID: 490-138806-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-138806-1

Comments
Revised Report 1/31/2018 to include only Phase II data per client request.

Receipt
The samples were received on 10/14/2017 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.1º C, 0.8º C and 1.0º C.

HPLC/IC
Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-5 (490-138806-5), MW-8 (490-138806-6), MW-6 (490-138806-7), MW-7 (490-138806-8), MW-10 (490-138806-9) and DUPE (490-138806-10). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-470662 contained Sulfate above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: The method blank for analytical batch 490-470623 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-470862 contained Sulfate above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: Due to the nature of the samples matrix, matrix spike/ matrix spike duplicate (LCS/LCSD) was not analyzed with 490-470862 . However, laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits. (LCS 490-470862/4) and (LCSD 490-470862/5)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW-5

Date Collected: 10/12/17 15:00
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	261		30.0	2.00	mg/L			10/25/17 18:21	10
Fluoride	2.88		1.00	0.0100	mg/L			10/25/17 18:02	1
Sulfate	1730	B	250	1.50	mg/L			10/25/17 18:32	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.27		1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 22:44	1
Calcium	480	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.18		0.100	0.100	SU			10/22/17 12:55	1
Temperature	23.0		0.100	0.100	Degrees C			10/22/17 12:55	1
Total Dissolved Solids	3040		20.0	14.0	mg/L			10/15/17 21:22	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-8
Date Collected: 10/12/17 14:00
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-6
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.44		3.00	0.200	mg/L			10/24/17 22:24	1
Fluoride	1.21		1.00	0.0100	mg/L			10/25/17 18:32	1
Sulfate	894	B	250	1.50	mg/L			10/25/17 18:44	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0409	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 22:49	1
Calcium	216	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.28		0.100	0.100	SU			10/22/17 13:03	1
Temperature	22.8		0.100	0.100	Degrees C			10/22/17 13:03	1
Total Dissolved Solids	1560		10.0	7.00	mg/L			10/15/17 21:22	1

Client Sample ID: MW-6

Date Collected: 10/12/17 16:05
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.60		3.00	0.200	mg/L			10/24/17 22:35	1
Fluoride	2.96		1.00	0.0100	mg/L			10/25/17 18:41	1
Sulfate	1670	B	250	1.50	mg/L			10/25/17 18:55	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.286	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 22:53	1
Calcium	438	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.45		0.100	0.100	SU			10/22/17 12:55	1
Temperature	23.0		0.100	0.100	Degrees C			10/22/17 12:55	1
Total Dissolved Solids	2920		20.0	14.0	mg/L			10/17/17 18:04	1

Client Sample ID: MW-7

Date Collected: 10/12/17 16:50
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.77		3.00	0.200	mg/L			10/24/17 22:47	1
Fluoride	1.43		1.00	0.0100	mg/L			10/25/17 18:52	1
Sulfate	910	B	250	1.50	mg/L			10/25/17 19:07	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.245	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 23:11	1
Calcium	259	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.51		0.100	0.100	SU			10/22/17 13:03	1
Temperature	22.9		0.100	0.100	Degrees C			10/22/17 13:03	1
Total Dissolved Solids	1610		20.0	14.0	mg/L			10/17/17 18:04	1

Client Sample ID: MW-10

Date Collected: 10/13/17 08:20
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	83.0		15.0	1.00	mg/L			10/25/17 19:42	5
Fluoride	2.80		1.00	0.0100	mg/L			10/25/17 19:01	1
Sulfate	2080	B	500	3.00	mg/L			10/26/17 13:08	100

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.251	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 23:16	1
Calcium	347	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.95		0.100	0.100	SU			10/22/17 13:03	1
Temperature	22.8		0.100	0.100	Degrees C			10/22/17 13:03	1
Total Dissolved Solids	3120		20.0	14.0	mg/L			10/17/17 18:04	1

Client Sample ID: DUPE

Date Collected: 10/12/17 17:01
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-10

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.70		3.00	0.200	mg/L			10/24/17 23:10	1
Fluoride	1.43		1.00	0.0100	mg/L			10/25/17 19:11	1
Sulfate	911	B	250	1.50	mg/L			10/25/17 20:05	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.256	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 23:20	1
Calcium	270	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.54		0.100	0.100	SU			10/22/17 13:03	1
Temperature	22.8		0.100	0.100	Degrees C			10/22/17 13:03	1
Total Dissolved Solids	1620		20.0	14.0	mg/L			10/17/17 18:04	1

Client Sample ID: BLANK

Date Collected: 10/13/17 11:45
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.462**	**J B**	3.00	0.200	mg/L			10/25/17 19:40	1
Fluoride	ND		1.00	0.0100	mg/L			10/25/17 19:40	1
Sulfate	ND		5.00	0.0300	mg/L			10/25/17 19:40	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.0147**	**J**	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 23:25	1
Calcium	**0.171**	**J B**	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 11:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.30**		0.100	0.100	SU			10/22/17 13:03	1
Temperature	**22.9**		0.100	0.100	Degrees C			10/22/17 13:03	1
Total Dissolved Solids	**23.0**		10.0	7.00	mg/L			10/17/17 18:04	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-470623/3
Matrix: Water
Analysis Batch: 470623

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3636	J	3.00	0.200	mg/L			10/25/17 16:54	1
Fluoride	ND		1.00	0.0100	mg/L			10/25/17 16:54	1
Sulfate	ND		5.00	0.0300	mg/L			10/25/17 16:54	1

Lab Sample ID: LCS 490-470623/4
Matrix: Water
Analysis Batch: 470623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.81		mg/L		108	80 - 120
Fluoride	1.00	1.049		mg/L		105	80 - 120
Sulfate	10.0	10.38		mg/L		104	80 - 120

Lab Sample ID: LCSD 490-470623/5
Matrix: Water
Analysis Batch: 470623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.82		mg/L		108	80 - 120	0	20
Fluoride	1.00	1.039		mg/L		104	80 - 120	1	20
Sulfate	10.0	10.36		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 490-470625/3
Matrix: Water
Analysis Batch: 470625

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			10/24/17 20:28	1
Sulfate	0.4169	J	5.00	0.0300	mg/L			10/24/17 20:28	1

Lab Sample ID: LCS 490-470625/4
Matrix: Water
Analysis Batch: 470625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.590		mg/L		96	80 - 120
Sulfate	10.0	9.296		mg/L		93	80 - 120

Lab Sample ID: LCSD 490-470625/5
Matrix: Water
Analysis Batch: 470625

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.498		mg/L		95	80 - 120	1	20
Sulfate	10.0	9.228		mg/L		92	80 - 120	1	20

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 490-470662/3
Matrix: Water
Analysis Batch: 470662

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			10/25/17 16:48	1
Fluoride	0.05274	J	1.00	0.0100	mg/L			10/25/17 16:48	1
Sulfate	0.4338	J	5.00	0.0300	mg/L			10/25/17 16:48	1

Lab Sample ID: LCS 490-470662/4
Matrix: Water
Analysis Batch: 470662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.482		mg/L		95	80 - 120
Fluoride	1.00	0.9092	J	mg/L		91	80 - 120
Sulfate	10.0	9.228		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-470662/5
Matrix: Water
Analysis Batch: 470662

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.454		mg/L		94	80 - 120	0	20
Fluoride	1.00	0.9149	J	mg/L		91	80 - 120	1	20
Sulfate	10.0	9.202		mg/L		92	80 - 120	0	20

Lab Sample ID: 490-138806-11 MS
Matrix: Water
Analysis Batch: 470662

Client Sample ID: BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		2.00	1.853	J	mg/L		93	80 - 120
Fluoride	0.0588	J B F1	0.200	0.2053	J F1	mg/L		73	80 - 120
Sulfate	0.429	J B F1	2.00	1.912	J F1	mg/L		74	80 - 120

Lab Sample ID: 490-138806-11 MSD
Matrix: Water
Analysis Batch: 470662

Client Sample ID: BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		2.00	1.820	J	mg/L		91	80 - 120	2	20
Fluoride	0.0588	J B F1	0.200	0.2038	J F1	mg/L		72	80 - 120	1	20
Sulfate	0.429	J B F1	2.00	1.929	J F1	mg/L		75	80 - 120	1	20

Lab Sample ID: MB 490-470862/3
Matrix: Water
Analysis Batch: 470862

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2754	J	3.00	0.200	mg/L			10/26/17 11:39	1
Fluoride	0.04444	J	1.00	0.0100	mg/L			10/26/17 11:39	1
Sulfate	0.4217	J	5.00	0.0300	mg/L			10/26/17 11:39	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-470862/4
Matrix: Water
Analysis Batch: 470862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.381		mg/L		94	80 - 120
Fluoride	1.00	0.9524	J	mg/L		95	80 - 120
Sulfate	10.0	9.174		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-470862/5
Matrix: Water
Analysis Batch: 470862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.525		mg/L		95	80 - 120	2	20
Fluoride	1.00	0.9538	J	mg/L		95	80 - 120	0	20
Sulfate	10.0	9.198		mg/L		92	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-226239/1-A
Matrix: Water
Analysis Batch: 226406

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.08081	J	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:22	1

Lab Sample ID: MB 180-226239/1-A
Matrix: Water
Analysis Batch: 226796

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 21:11	1

Lab Sample ID: LCS 180-226239/2-A
Matrix: Water
Analysis Batch: 226406

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50.0	50.12		mg/L		100	80 - 120

Lab Sample ID: LCS 180-226239/2-A
Matrix: Water
Analysis Batch: 226796

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.031		mg/L		103	80 - 120

Lab Sample ID: 490-138677-D-1-B MS
Matrix: Water
Analysis Batch: 226406

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	41.8	B	50.0	91.28		mg/L		99	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-138677-D-1-B MS
Matrix: Water
Analysis Batch: 226796

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.320	J	1.00	1.313		mg/L		99	75 - 125

Lab Sample ID: 490-138677-D-1-C MSD
Matrix: Water
Analysis Batch: 226406

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	41.8	B	50.0	92.52		mg/L		101	75 - 125	1	20

Lab Sample ID: 490-138677-D-1-C MSD
Matrix: Water
Analysis Batch: 226796

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 226239

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.320	J	1.00	1.404		mg/L		108	75 - 125	7	20

Method: 9040C - pH

Lab Sample ID: LCS 490-469806/1
Matrix: Water
Analysis Batch: 469806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.990		SU		100	98 - 103

Lab Sample ID: 490-138628-B-5 DU
Matrix: Water
Analysis Batch: 469806

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.04		7.040		SU		0	20
Temperature	22.2		22.80		Degrees C		3	20

Lab Sample ID: LCS 490-469808/1
Matrix: Water
Analysis Batch: 469808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.990		SU		100	98 - 103

Lab Sample ID: 490-138806-3 DU
Matrix: Water
Analysis Batch: 469808

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.60		6.600		SU		0	20
Temperature	22.7		22.70		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-467451/1
Matrix: Water
Analysis Batch: 467451

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/17/17 18:04	1

Lab Sample ID: LCS 490-467451/2
Matrix: Water
Analysis Batch: 467451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	105.0		mg/L		105	90 - 110

Lab Sample ID: LCSD 490-467451/3
Matrix: Water
Analysis Batch: 467451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	107.0		mg/L		107	90 - 110	2	20

Lab Sample ID: 490-138677-E-1 DU
Matrix: Water
Analysis Batch: 467451

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	278		281.0		mg/L		1	20

Lab Sample ID: 490-138830-I-1 DU
Matrix: Water
Analysis Batch: 467451

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	224		228.0		mg/L		2	20

Lab Sample ID: MB 490-467453/1
Matrix: Water
Analysis Batch: 467453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/15/17 21:22	1

Lab Sample ID: LCS 490-467453/2
Matrix: Water
Analysis Batch: 467453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	103.0		mg/L		103	90 - 110

Lab Sample ID: LCSD 490-467453/3
Matrix: Water
Analysis Batch: 467453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	104.0		mg/L		104	90 - 110	1	20

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Lab Sample ID: 490-138490-K-1 DU
Matrix: Water
Analysis Batch: 467453

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	8230			8190		mg/L				0.5	20

Lab Sample ID: 490-138580-K-1 DU
Matrix: Water
Analysis Batch: 467453

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	215			217.0		mg/L				0.9	20

HPLC/IC

Analysis Batch: 470623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total/NA	Water	9056A	
490-138806-6	MW-8	Total/NA	Water	9056A	
490-138806-7	MW-6	Total/NA	Water	9056A	
490-138806-8	MW-7	Total/NA	Water	9056A	
490-138806-9	MW-10	Total/NA	Water	9056A	
490-138806-10	DUPE	Total/NA	Water	9056A	
490-138806-11	BLANK	Total/NA	Water	9056A	

Analysis Batch: 470625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-6	MW-8	Total/NA	Water	9056A	
490-138806-7	MW-6	Total/NA	Water	9056A	
490-138806-8	MW-7	Total/NA	Water	9056A	
490-138806-10	DUPE	Total/NA	Water	9056A	

Analysis Batch: 470662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total/NA	Water	9056A	
490-138806-5	MW-5	Total/NA	Water	9056A	
490-138806-6	MW-8	Total/NA	Water	9056A	
490-138806-7	MW-6	Total/NA	Water	9056A	
490-138806-8	MW-7	Total/NA	Water	9056A	
490-138806-9	MW-10	Total/NA	Water	9056A	
490-138806-10	DUPE	Total/NA	Water	9056A	

Analysis Batch: 470862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-9	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 226239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total Recoverable	Water	3005A	
490-138806-6	MW-8	Total Recoverable	Water	3005A	
490-138806-7	MW-6	Total Recoverable	Water	3005A	
490-138806-8	MW-7	Total Recoverable	Water	3005A	
490-138806-9	MW-10	Total Recoverable	Water	3005A	
490-138806-10	DUPE	Total Recoverable	Water	3005A	
490-138806-11	BLANK	Total Recoverable	Water	3005A	

Analysis Batch: 226406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total Recoverable	Water	6020A	226239
490-138806-6	MW-8	Total Recoverable	Water	6020A	226239
490-138806-7	MW-6	Total Recoverable	Water	6020A	226239
490-138806-8	MW-7	Total Recoverable	Water	6020A	226239
490-138806-9	MW-10	Total Recoverable	Water	6020A	226239
490-138806-10	DUPE	Total Recoverable	Water	6020A	226239
490-138806-11	BLANK	Total Recoverable	Water	6020A	226239

Metals (Continued)

Analysis Batch: 226796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total Recoverable	Water	6020A	226239
490-138806-6	MW-8	Total Recoverable	Water	6020A	226239
490-138806-7	MW-6	Total Recoverable	Water	6020A	226239
490-138806-8	MW-7	Total Recoverable	Water	6020A	226239
490-138806-9	MW-10	Total Recoverable	Water	6020A	226239
490-138806-10	DUPE	Total Recoverable	Water	6020A	226239
490-138806-11	BLANK	Total Recoverable	Water	6020A	226239

General Chemistry

Analysis Batch: 467451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-7	MW-6	Total/NA	Water	SM 2540C	
490-138806-8	MW-7	Total/NA	Water	SM 2540C	
490-138806-9	MW-10	Total/NA	Water	SM 2540C	
490-138806-10	DUPE	Total/NA	Water	SM 2540C	
490-138806-11	BLANK	Total/NA	Water	SM 2540C	

Analysis Batch: 467453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total/NA	Water	SM 2540C	
490-138806-6	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 469806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-5	MW-5	Total/NA	Water	9040C	
490-138806-7	MW-6	Total/NA	Water	9040C	

Analysis Batch: 469808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138806-6	MW-8	Total/NA	Water	9040C	
490-138806-8	MW-7	Total/NA	Water	9040C	
490-138806-9	MW-10	Total/NA	Water	9040C	
490-138806-10	DUPE	Total/NA	Water	9040C	
490-138806-11	BLANK	Total/NA	Water	9040C	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-5

Date Collected: 10/12/17 15:00
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			470623	10/25/17 18:02	JHS	TAL NSH
Total/NA	Analysis	9056A		10			470662	10/25/17 18:21	LDC	TAL NSH
Total/NA	Analysis	9056A		50			470662	10/25/17 18:32	LDC	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:10	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 22:44	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469806	10/22/17 12:55	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	467453	10/15/17 21:22	AEC	TAL NSH

Client Sample ID: MW-8

Date Collected: 10/12/17 14:00
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			470623	10/25/17 18:32	JHS	TAL NSH
Total/NA	Analysis	9056A		1			470625	10/24/17 22:24	JML	TAL NSH
Total/NA	Analysis	9056A		50			470662	10/25/17 18:44	LDC	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:12	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 22:49	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469808	10/22/17 13:03	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	467453	10/15/17 21:22	AEC	TAL NSH

Client Sample ID: MW-6

Date Collected: 10/12/17 16:05
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			470623	10/25/17 18:41	JHS	TAL NSH
Total/NA	Analysis	9056A		1			470625	10/24/17 22:35	JML	TAL NSH
Total/NA	Analysis	9056A		50			470662	10/25/17 18:55	LDC	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:15	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 22:53	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469806	10/22/17 12:55	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: MW-7

Date Collected: 10/12/17 16:50
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			470623	10/25/17 18:52	JHS	TAL NSH
Total/NA	Analysis	9056A		1			470625	10/24/17 22:47	JML	TAL NSH
Total/NA	Analysis	9056A		50			470662	10/25/17 19:07	LDC	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:18	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 23:11	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469808	10/22/17 13:03	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Client Sample ID: MW-10

Date Collected: 10/13/17 08:20
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		100			470862	10/26/17 13:08	LDC	TAL NSH
Total/NA	Analysis	9056A		1			470623	10/25/17 19:01	JHS	TAL NSH
Total/NA	Analysis	9056A		5			470662	10/25/17 19:42	LDC	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:26	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 23:16	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469808	10/22/17 13:03	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Client Sample ID: DUPE

Date Collected: 10/12/17 17:01
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			470623	10/25/17 19:11	JHS	TAL NSH
Total/NA	Analysis	9056A		1			470625	10/24/17 23:10	JML	TAL NSH
Total/NA	Analysis	9056A		50			470662	10/25/17 20:05	LDC	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:28	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 23:20	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469808	10/22/17 13:03	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Client Sample ID: BLANK

Date Collected: 10/13/17 11:45
Date Received: 10/14/17 09:25

Lab Sample ID: 490-138806-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			470623	10/25/17 19:40	JHS	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226406	10/19/17 11:31	RSK	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	226239	10/18/17 12:13	RSK	TAL PIT
Total Recoverable	Analysis	6020A		1			226796	10/23/17 23:25	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469808	10/22/17 13:03	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6020A	Metals (ICP/MS)	SW846	TAL PIT
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: WL CCR Groundwater-Round 9

TestAmerica Job ID: 490-138806-1
SDG: Wilson Station, Wilson Landfill (WL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
9040C		Water	Temperature
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-18
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-18
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-138806 Chain of Custody

Cooler Received/Opened On 10-14-2017 @ 09:25

Time Samples Removed From Cooler 18:12 Time Samples Placed In Storage 1831 (2 Hour Window)

1. Tracking #_____(last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_31470368_____ pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.0 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO..NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 (front)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) KM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ⬅ Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) JJ

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) AOT

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) AOT

I certify that I attached a label with the unique LIMS number to each container (intial) AOT

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
138806

Cooler Received/Opened On 10/14/17 0925

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour window)

1. Tracking # 0171 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960353 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 0.8 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) HG

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ⬅ Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) AOH

I certify that I attached a label with the unique LIMS number to each container (intial) AOH

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO #_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
138806

COOLER RECEIPT FORM

Cooler Received/Opened On 10-14-2017 @ 09:25

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 1020 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID_14740456_____ pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 0.1 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) ES

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ← Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) JJ

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) AOH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) AOH

I certify that I attached a label with the unique LIMS number to each container (intial) AOH

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Coal Combustion Residuals (CCR)**

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 10/13/2017**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		
(270) 844-6010 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX	☑ 2 weeks		
Project Name: WL CCR Groundwater-Round 9	☐ 1 week		
Site: Wilson Station, Wilson Landfill (WL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: ___1___ of ___1___ COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	2540C_Calcd - TDS	6020A - BORON & CALCIUM	9040C, 9056A_ORGFM_28D	Sample Specific Notes:
MW-1	10/12/17	1300	G	Water	3	N	N	x	x	x	
MW-2	10/13/17	1130	G	Water	3	N	N	x	x	x	
MW-3	10/13/17	1040	G	Water	3	N	N	x	x	x	
MW-4	10/13/17	0910	G	Water	3	N	N	x	x	x	
MW-5	10/12/17	1500	G	Water	3	N	N	x	x	x	
MW-6	10/12/17	1605	G	Water	3	N	N	x	x	x	
MW-7	10/12/17	1650	G	Water	3	N	N	x	x	x	
MW-8	10/12/17	1400	G	Water	3	N	N	x	x	x	
MW-10	10/13/17	0820	G	Water	3	N	N	x	x	x	
DUPE	10/12/17	1701	G	Water	3	N	N	x	x	x	
FIELD BLANK	10/13/17	1145	G	Water	3	N	N	x	x	x	
		Greg Dick									
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None								7	4	7	

Loc: 490
138806

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations). See attached constituent list for analysis.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by: Greg Dick	Company: BREC	Date/Time: 10/13/17 1500	Received by:	Company: FAN 1.0	Date/Time: 10/14/17 0925
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Greg Quick
BREC
10/13/2017
1500

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Part 2A1

Chain of Custody Record

490-138806 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	195.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-138806-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/26/2017	Analysis Requested	Preservation Codes:
City: Pittsburgh	TAT Requested (days):		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - Di Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		Other:
Email:	WO #:		
Project Name: Big Rivers Electric Corp - CCR & SemiAnn	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) B & Ca	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-1 (490-138806-1)	10/12/17	13:00 Central		Water			X	1	Metals - run once, upload together.
MW-2 (490-138806-2)	10/13/17	11:30 Central		Water			X	1	Metals - run once, upload together.
MW-3 (490-138806-3)	10/13/17	10:40 Central		Water			X	1	Metals - run once, upload together.
MW-4 (490-138806-4)	10/13/17	09:10 Central		Water			X	1	Metals - run once, upload together.
MW-5 (490-138806-5)	10/12/17	15:00 Central		Water			X	1	Metals - run once, upload together.
MW-8 (490-138806-6)	10/12/17	14:00 Central		Water			X	1	Metals - run once, upload together.
MW-6 (490-138806-7)	10/12/17	16:05 Central		Water			X	1	Metals - run once, upload together.
MW-7 (490-138806-8)	10/12/17	16:50 Central		Water			X	1	Metals - run once, upload together.
MW-10 (490-138806-9)	10/13/17	08:20 Central		Water			X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10.16.17	TAN	DWatson	10-17-17 905	TAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-64095.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)		Job #: 490-138806-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/26/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: Big Rivers Electric Corp - CCR & SemiAnn	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) B & Ca	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DUPE (490-138806-10)	10/12/17	17:01 Central		Water			X	1	Metals - run once, upload together.
BLANK (490-138806-11)	10/13/17	11:45 Central		Water			X	1	Metals - run once, upload together.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	10/16/17	TAN	[signature]	10-17-17	TAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 965	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-138806-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 138806
List Number: 1
Creator: Huskey, Adam

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-138806-1
SDG Number: Wilson Station, Wilson Landfill (WL)

Login Number: 138806
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 10/17/17 02:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment C

1.0 WILSON LANDFILL STATISTICAL PROCEDURES AND RESULTS

The Appendix III groundwater quality data were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at a background monitoring well. For the D.B. Wilson landfill, monitoring well MW-8 is designated as the background well because it is located upgradient, whereas monitoring wells MW-5, MW-6, MW-7, and MW-10 are designated as compliance wells because they are located downgradient.

The statistical analyses were performed in accordance with the United States Environmental Protection Agency's (USEPA) Final Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) Parts 257.93(f), 257.93(g), and 257.93(h) and the Groundwater Monitoring System and Statistical Methods Certification. Prediction limits (i.e., parametric or nonparametric) with 1 of 2 retesting were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection limit. No outliers were identified in the background data. Analytical data from the background monitoring wells collected between April 2016 and October 2017 were used to develop an upper prediction limit (UPL) for the Appendix III background data at 95 percent confidence. Data from the downgradient monitoring wells for the same time period were compared to the UPL to identify statistically significant increases (SSIs) over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. ProUCL Version 5.1 was used to store the data and run the statistical analyses. The results of the analyses, including the UPLs, are provided in **Table 1**.

The statistical analysis results indicate that Appendix III constituents boron, calcium, chloride, pH, sulfate, and total dissolved solids (TDS) at monitoring well MW-5; boron calcium, sulfate and TDS at monitoring well MW-6; boron and chloride at monitoring well MW-7; and boron, calcium, chloride, sulfate, and TDS at monitoring well MW-10 have SSIs over background that was confirmed by subsequent sampling events (**Table 2**). pH at monitoring well MW-10 had a SSI below its lower prediction limit (LPL) that was confirmed by subsequent sampling events. Fluoride did not have any verified SSIs over background. Based on these results, assessment monitoring or an alternate source demonstration is required at the landfill within 90 days of this determination.

Table 1. Statistical Analysis Methods and Background Upper Prediction Limits

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Limit (mg/L)
Boron (mg/L)	9	0	Yes/No	Parametric	0.056
Calcium (mg/L)	9	0	No/No	Nonparametric	329
Chloride (mg/L)	9	0	Yes/Yes	Parametric	5.41
Fluoride (mg/L)	9	0	No/Yes	Parametric	0.99
pH (std units)	9	0	No/No	Nonparametric	6.20/6.64
Sulfate (mg/L)	9	0	Yes/Yes	Parametric	978
TDS (mg/L)	9	0	Yes/Yes	Parametric	1,626

Table 2 Big Rivers D.B. Wilson Landfill SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-8	Upgradient	P	NP	P	P	NP	NP	P	P
MW-5	Downgradient								
MW-6	Downgradient								
MW-7	Downgradient								
MW-10	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-8 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

Statistically significant increase (SSI) over background UPL or below background LPL for pH