2016-2017

ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

COAL COMBUSTION RESIDUALS (CCR) RULE

GREEN STATION CCR LANDFILL
GREEN STATION CCR SURFACE IMPOUNDMENT
REID/HMPL STATION CCR SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY

Prepared for:

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Sebree Generating Station
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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 Sebree Generating Station (Sebree Station), located in Webster County, Kentucky. This report was prepared in accordance with Part 257.90, Sub-Part (e) of the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule. The CCR Rule was established to regulate the disposal of CCR produced by electricity generating facilities (USEPA, 2015).

This report summarizes activities conducted in 2016 and 2017 related to the CCR Rule groundwater monitoring program at the following CCR units:

- **GREEN STATION LANDFILL**
- **GREEN STATION SURFACE IMPOUNDMENT**
- **REID/HMPL STATION SURFACE IMPOUNDMENT**

The following sections present site background summaries, a discussion of field activities performed, a summary of laboratory results, statistical evaluation findings, and conclusions regarding groundwater conditions in the aquifer system through 2017 subject to monitoring under the CCR Rule.

1.1 Site Background

The Sebree Station is located in Webster County approximately 3.2 miles northeast of the town of Sebree, Kentucky. Sebree Station is composed of Green Station and Reid/HMPL Station. All three CCR units are located within the Station grounds.

GREEN STATION LANDFILL

The Green Station CCR Landfill (Green Landfill) is located directly south of the Sebree Station, situated south of the Green Station CCR Surface Impoundment. The Green Landfill is a Kentucky permitted landfill that receives special wastes generated by burning coal (CCRs) from Green and Reid/HMPL Stations. The current Green Landfill footprint is approximately 170 acres (**Figure 1**).

As stated in the published CCR monitoring well network certification (http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/), the original ground surface within the landfill footprint was irregular and the predominant features were small stream valleys draining towards the Green River, which is located just east of the landfill; and towards Groves Creek, which is located just south of the landfill.

GREEN STATION SURFACE IMPOUNDMENT

The Green Station CCR Surface Impoundment (Green Surface Impoundment) is located directly south of the Sebree Station and situated north of the Green Landfill (**Figure 1**). The Green Surface Impoundment has been in place for more than 40 years and is used for the placement of CCR material; currently slurried bottom ash. The immediate watershed that drains to the CCR unit, and in which the CCR unit is considered to be located, is unnamed and 54.13 acres in size. The unnamed watershed discharges from the CCR surface impoundment outflow structure and is routed, under a Kentucky Pollution Discharge Elimination System (KPDES) permit, to the Green River.

As stated in the CCR monitoring well network certification (http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/), the Green Surface Impoundment is a combined incised/dike earthen embankment structure. It is diked on the west, south and east sides, while the north side is incised. The south dike has the greatest height, reaching approximately 20 feet. The original ground

surface within the pond footprint was irregular and the predominant features were small stream valleys draining eastward to Green River. Most of the central portion of the south dike was constructed on a subdued ridge.

REID/HMPL STATION SURFACE IMPOUNDMENT

The Reid/HMPL Station CCR Surface Impoundment (Reid/HMPL Surface Impoundment) is located directly northwest and adjacent of the Sebree Station (**Figure 1**). The Reid/HMPL Surface Impoundment has been in place for more than 40 years and is used for the placement of CCR material; currently slurried bottom ash. The immediate watershed that drains to the CCR unit, and in which the CCR unit is considered to be located, is unnamed and 25.45 acres in size. The unnamed watershed discharges from the CCR impoundment outflow structure and is routed, under a KPDES permit, to the Green River.

As stated in the CCR monitoring well network certification (http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/), the Reid/HMPL Surface Impoundment is a combined incised/dike earthen embankment structure. It is diked on the west, south and east sides, while the north side is incised. The west dike has the greatest height reaching approximately 42 feet. The original terrain on which the pond was constructed generally sloped toward the west.

2.0 2016 – 2017 ACTIVITIES SUMMARY

The following subsections describe the activities that were performed in 2016 and 2017 for the three CCR units noted above related to each of their corresponding CCR Groundwater Monitoring Networks.

2.1 Monitoring Well Systems

GREEN LANDFILL

Prior to implementation of the CCR Rule, a groundwater monitoring well network was already present at the Green Landfill related to requirements stated within the operating permit. The existing wells were located along the perimeter of the permitted footprint for the Green 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.

Six monitoring wells (MW-1, MW-2, MW-3A, MW-4, MW-5 and MW-6) were installed adjacent to the Green Landfill to determine the general direction of groundwater movement and to monitor groundwater at the site. MW-1 is located northwest of the landfill and is considered upgradient. MW-2, MW-3A, MW-4, MW-5 and MW-6; located respectively, northeast, east, southeast, south and southwest are considered 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 (http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/), the stratigraphic interval considered as the most prominent water transmitting zone within and adjacent to the Sebree Generating Station is material identified as the Upper Sandstone Member (Sebree sandstone) of the Carbondale Formation. The United States Geological Survey (USGS) Geologic Map of the Robards Quadrangle describes the Sebree sandstone sequence as “Siltstone, sandstone, shale and coal: Siltstone, light- to medium-gray, micaceous, thin-bedded, locally calcareous. Sandstone, light- to medium-gray, grayish- and yellowish-brown, fine- to medium-grained slightly micaceous, thin-bedded to massive; locally fills channels.” For purposes of compliance with the USEPA Disposal of CCR from Electric Utilities; Final Rule groundwater monitoring requirements; this sequence, and in particular the member sandstone intervals, is considered to be the uppermost aquifer underlying the Green CCR landfill.

A report of the well installation and details about the monitoring network is available in the Monitoring Well Completion Report, R.D. Green Special Waste Landfill, #117-0007 LIU 1 MOGW1, Webster County dated July 1997 and maintained within the operating record at Sebree Station.

In accordance with 40 Code of Federal Regulations (CFR) § 257.91(e)(1), the CCR monitoring network for the Green 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-and-data-informationsebree-station/).

GREEN SURFACE IMPOUNDMENT

As stated in the CCR monitoring well network certification (http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/), prior to implementation of the CCR Rule three temporary piezometers (P-10, P-11 and P-12) were installed adjacent to, and respectively; northwest, southwest and northeast of the Green Surface Impoundment to determine the general direction of groundwater movement. Measured static water levels, from the highest to lowest elevation were observed in P-10 (highest), P-11 and P-12 (lowest) resulting in a calculated hydraulic gradient or apparent direction of groundwater movement is generally from northwest to southeast. This groundwater gradient characterization and the ability to locate monitoring wells specific to the CCR unit justify the placement of the minimum of one upgradient and three downgradient monitoring wells. The upgradient monitoring well (MW-11) was installed adjacent to, and northwest of the impoundment. The downgradient monitoring wells (MW-12, MW-13 and MW-14) were installed adjacent to, and respectively; south-southeast, southeast and east-northeast of the Green Surface Impoundment. As-built specifics of each well installation are summarized on **Table 4**. The locations of the groundwater monitoring wells are shown on the **Figure 4**. Each well has a dedicated bladder pump system and tubing installed for sampling purposes.

The stratigraphic interval considered as the most prominent water transmitting zone within and adjacent to the Sebree Generating Station is material identified as the Upper Sandstone Member (Sebree sandstone) of the Carbondale Formation. The USGS Geologic Map of the Robards Quadrangle describes the Sebree sandstone sequence as “Siltstone, sandstone, shale and coal: Siltstone, light- to medium-gray, micaceous, thin-bedded, locally calcareous. Sandstone, light- to medium-gray, grayish- and yellowish-brown, fine- to medium-grained slightly micaceous, thin-bedded to massive; locally fills channels.” For purposes of compliance with the USEPA Disposal of CCR from Electric Utilities; Final Rule groundwater monitoring requirements; this sequence, and in particular the member sandstone intervals, is considered to be the uppermost aquifer underlying the Green CCR surface impoundment.

A report of the *Assessment of Groundwater Gradients in Vicinities of Green and Reid/HMPL CCR Impoundments* dated September 25, 2015, and boring/well completion logs for the Green Surface Impoundment monitoring well network are maintained within the operating record at Sebree Station.

In accordance with 40 CFR § 257.91(e)(1), the CCR monitoring network for the Green Surface Impoundment 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-and-data-informationsebree-station/).

REID/HMPL SURFACE IMPOUNDMENT

As stated in the CCR monitoring well network certification, prior to implementation of the CCR Rule five temporary piezometers (P-13/P-13A, P-14 and P-15/P-15A) were installed adjacent to and (respectively) northwest, southeast and southwest of the Reid/HMPL Surface Impoundment to determine general direction of groundwater movement. Measured static water levels, from the highest to lowest elevation were observed in P-13/13A (highest), P-14 and P-15/P-15A (lowest) resulting in a calculated hydraulic

gradient or apparent direction of groundwater movement generally from east-northeast to west-southwest. This groundwater gradient characterization allowed precise placement of monitoring wells for the CCR unit, thereby justifying the placement of the minimum of one upgradient and three downgradient monitoring wells. The upgradient monitoring well (MW-7) was installed adjacent to, and east-northeast of the impoundment. The downgradient monitoring wells (MW-8, MW-9 and MW-10) were installed adjacent to, and respectively; west, southwest and south-southwest of the impoundment. As-built specifics of each well installation are summarized on **Table 7**. The locations of the groundwater monitoring wells are shown on the **Figure 6**. Each well has a dedicated bladder pump system and tubing installed for sampling purposes.

The stratigraphic interval considered as the most prominent water transmitting zone within and adjacent to the Sebree Generating Station is material identified as the Upper Sandstone Member (Sebree sandstone) of the Carbondale Formation. The USGS Geologic Map of the Robards Quadrangle describes the Sebree sandstone sequence as "Siltstone, sandstone, shale and coal: Siltstone, light- to medium-gray, micaceous, thin-bedded, locally calcareous. Sandstone, light- to medium-gray, grayish- and yellowish-brown, fine- to medium-grained slightly micaceous, thin-bedded to massive; locally fills channels." For purposes of compliance with the USEPA Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule groundwater monitoring requirements; this sequence, and in particular the member sandstone intervals, is considered to be the uppermost aquifer underlying the Reid/HMPL CCR surface impoundment.

A report of the *Assessment of Groundwater Gradients in Vicinities of Green and Reid/HMPL CCR Impoundments* dated September 25, 2015, and boring/well completion logs for the Reid/HMPL Surface Impoundment monitoring well network are maintained within the operating record at Wilson Station.

In accordance with 40 CFR § 257.91(e)(1), the CCR monitoring network for the Reid/HMPL Surface Impoundment 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-and-data-informationsebree-station/).

2.2 Baseline Groundwater Sampling

Nine groundwater sampling events were conducted at all three CCR units between March 2016 and October 2017. The following tables summarize the dates of each sampling event for the baseline period and the wells included in the events for each CCR unit.

Event Type	Sampling Event	Dates	Wells Sampled
Green Landfill Baseline Groundwater Sampling	1	March 26 and 29, 2016	Background (Upgradient) MW-1 Downgradient MW-2, MW-3A, MW-4. MW-5, MW-6
	2	May 23, 2016	
	3	August 18, 2016	
	4	Oct 26 and Nov 14, 2016	
	5	February 1, 2017	
	6	May 2, 2017	
	7	August 7- 8, 2017	
	8	September 5 - 7, 2017	
	9	October 5 – 6, 2017	

Event Type	Sampling Event	Dates	Wells Sampled
Green Surface Impoundment Baseline Groundwater Sampling	1	April 1, 2016	Background (Upgradient) MW-11 Downgradient MW-12, MW-13, MW-14
	2	June 2, 2016	
	3	August 16, 2016	
	4	October 25, 2016	
	5	January 26 - 27, 2017	
	6	May 1, 2017	
	7	August 11, 2017	
	8	September 20, 2017	
	9	October 9, 2017	

Event Type	Sampling Event	Dates	Wells Sampled
Reid/HMPL Surface Impoundment Baseline Groundwater Sampling	1	March 30, 2016	Background (Upgradient) MW-7 Downgradient MW-8, MW-9, MW-10
	2	May 31, 2016	
	3	August 23, 2016	
	4	October 18, 2016	
	5	Jan 31 and Feb 9, 2017	
	6	May 11, 2017	
	7	August 23, 2017	
	8	September 22, 2017	
	9	October 11, 2017	

Monitoring wells were sampled using low-flow sampling methods in accordance with the operating-permit *Groundwater Sampling Protocol, Special Waste Landfill Facility, R.D. Station Solid Waste, Webster County* dated March 1997 (amended October 2002) and maintained within the operating record at Sebree 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 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 for each unit stated above. The Statistical Methods Certification documents the selected method for each unit above and is available on the public website for CCR Activities maintained by BREC (http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/).

3.0 DATA EVALUATION

The following sections present details pertaining to the monitoring systems, groundwater flows, groundwater sampling results, and statistical evaluations for the Green Landfill, Green Surface Impoundment, and Reid/HMPL Surface Impoundment monitoring well networks and datasets.

3.1 Monitoring Well Systems

No changes were made to the Monitoring Well Systems for the Green Landfill, Green Surface Impoundment, and Reid/HMPL Surface Impoundment in 2016 – 2017.

3.2 Groundwater Flows

Water level data collected from each unit during the nine CCR monitoring events from March 2016 through October 2017 are summarized on **Table 2** (Green Landfill), **Table 5** (Green Surface Impoundment), and **Table 8** (Reid/HMPL Surface Impoundment). These data were used to construct piezometric surface maps to illustrate groundwater flow conditions for the uppermost aquifer. These data and figures are representative of general conditions at the site and support the following analysis.

GREEN LANDFILL

Overall groundwater flow beneath the footprint of the Green Landfill is to the east and south towards the Green River located east and Groves Creek located south of the landfill (**Figure 3**, October 2016). The hydraulic gradients calculated from seasonal high and low events during the baseline period ranged from 0.0119 to 0.0137 towards the east and 0.0103 to 0.0104 towards the south as presented in **Table 3**.

GREEN SURFACE IMPOUNDMENT

Overall groundwater flow beneath the footprint of the Green Surface Impoundment is to the east/southeast towards the Green River located east of the impoundment (**Figure 5**, October 2016). The hydraulic gradients calculated from seasonal high, mid-point, and low events during the baseline period ranged from 0.0159 to 0.0283 towards the east/southeast as presented in **Table 6**.

REID/HMPL SURFACE IMPOUNDMENT

Overall groundwater flow beneath the footprint of the Reid/HMPL Surface Impoundment is to the southwest towards an unnamed tributary to Groves Creek located west/southwest of the impoundment (**Figure 7**, September 2017). The hydraulic gradients calculated during the baseline period ranged from 0.0251 to 0.0258 towards the southwest as presented in **Table 9**.

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 conducted at the Green Landfill, Green Surface Impoundment, and Reid/HMPL Surface Impoundment. All Appendix III parameters were detected in all of the monitoring wells during ninth sampling event at each unit. Results from the baseline sampling events are included in **Attachment A** for each unit. Complete analytical laboratory reports are included in **Attachment B** for each unit.

3.4 Statistical Evaluation

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

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-and-data-informationsebree-station/).

GREEN LANDFILL

The data were evaluated using an interwell statistical approach, comparing upgradient to downgradient wells, with monitoring well MW-1 as the upgradient well. The results indicate that the site will require Assessment Monitoring as cadmium (Ca), chloride (Cl), sulfate (SO4), and total dissolved solids (TDS) have SSIs over background as highlighted in the attached summary table shown below. A summary of the statistical evaluations conducted on the baseline Appendix III parameters for the Green Landfill is provided as **Attachment C**.

Big Rivers Green Landfill SSI Summary									
Well	**Location**	**B**	**Ca**	**Cl**	**F**	**pH (LPL/UPL)**		**SO4**	**TDS**
MW-1	Upgradient	P	NP	P	P	NP	NP	P	P
MW-2	Downgradient								
MW-3A	Downgradient								
MW-4	Downgradient								
MW-5	Downgradient								
MW-6	Downgradient								

Notes:

SSI determined using interwell prediction limits; MW-1 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

GREEN SURFACE IMPOUNDMENT

The data were evaluated using an interwell statistical approach, comparing upgradient to downgradient wells, with monitoring well MW-11 as the upgradient well. The results indicate that the site will not require Assessment Monitoring as none of the Appendix III constituents have SSIs over background as highlighted in the attached summary table shown below. A summary of the statistical evaluations conducted on the baseline Appendix III parameters for the Green surface Impoundment is provided as **Attachment C**.

Big Rivers Green Surface Impoundment SSI Summary									
Well	**Location**	**B**	**Ca**	**Cl**	**F**	**pH (LPL/UPL)**		**SO4**	**TDS**
MW-11	Upgradient	P	NP	P	P	NP	NP	P	P
MW-12	Downgradient								
MW-13	Downgradient								
MW1-4	Downgradient								

Notes:
SSI determined using interwell prediction limits; MW-11 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 or between the UPL and the LPL for pH

REID/HMPL SURFACE IMPOUNDMENT

The data were evaluated using an interwell statistical approach, comparing upgradient to downgradient wells, with monitoring well MW-7 as the upgradient well. The results indicate that the site will require Assessment Monitoring as most of the Appendix III constituents have SSIs over background as highlighted in the attached summary table shown below. A summary of the statistical evaluations conducted on the baseline Appendix III parameters for the Reid/HMPL Surface Impoundment is provided as **Attachment C**.

Big Rivers Reid/HMPL Surface Impoundment SSI Summary									
Well	**Location**	**B**	**Ca**	**Cl**	**F**	**pH (LPL/UPL)**		**SO4**	**TDS**
MW-7	Upgradient	P	NP	P	P	NP	NP	P	P
MW-8	Downgradient								
MW-9	Downgradient								
MW-10	Downgradient								

Notes:
SSI determined using interwell prediction limits; MW-7 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 or greater than the LPL for pH

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

3.5 Discussion and Conclusions

Based upon the statistical evaluation of Appendix III parameters collected during the Baseline period at the Green Landfill and Reid/HMPL Surface Impoundment, BREC is preparing to conduct Assessment Monitoring in 2018 for the constituents and monitoring wells listed in Section 3.4 for each CCR unit. 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. Semi-annual detection monitoring and subsequent statistical evaluations for wells and parameters not under assessment will be initiated in 2018.

Based upon the statistical evaluation of Appendix III parameters collected during the baseline period at the Green Surface Impoundment, BREC is preparing to initiate semi-annual detection monitoring in 2018.

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

Early during the Baseline period, it was discovered that a round of water level measurements at each monitoring well network were not being 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 Green Landfill and Reid/HMPL Surface Impoundment. 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.

Other planned activities for 2018 also include two semi-annual Detection Monitoring sampling events and subsequent statistical evaluations for the Green Surface Impoundment.

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

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION LANDFILL
WEBSTER COUNTY, KENTUCKY

Well No.		Location*		Reference Elevation*		Casing Length	Size / Type	Filter Pack Interval		Screened Interval		Bottom of Boring
		Lat	Long	TOIC (feet, NAD27)	GS (feet, NAD27)	(feet, TOIC)	(ID / Material)	(feet, GS, NAD27)		(feet, GS, NAD27)		(feet, GS)
Monitoring Wells								Top	Bottom	Top	Bottom	
MW-1 (8002-9625)	U / B	37.3817	-87.3030	423.23	420.2	45.5	4 inch / PVC	389.9	377.7	387.7	377.7	45
MW-2 (8002-9630)	D	37.3815	-87.3005	392.37	389.9	50.3	4 inch / PVC	354.1	342.1	352.1	342.1	49
MW-3A (8003-6430)	D	37.3806	-87.3005	386.48	380.7	41.3	4 inch / PVC	357.2	344.5	355.2	345.2	36.2
MW-4 (8002-9628)	D	37.3744	-87.3004	391.33	388.8	33.1	4 inch / PVC	370.2	358.2	368.2	358.2	33
MW-5 (8002-9627)	D	37.3741	-87.3010	390.18	387.7	27.5	4 inch / PVC	374.7	362.7	372.7	362.7	26
MW-6 (8002-9626)	D	37.3745	-87.3027	388.17	385.7	45.5	4 inch / PVC	354.9	342.7	352.7	342.7	45

*Reference elevation of monitoring wells surveyed by Fuller, Mossbarger, Scott and May, Civil Engineers, Inc., Lexington, Kentucky, December 1996, December 1999
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 - MARCH 2016 - OCTOBER 2017

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION LANDFILL
WEBSTER COUNTY, KENTUCKY

	GROUNDWATER MONITORING WELL NETWORK											
	MW-1		MW-2		MW-3A		MW-4		MW-5		MW-6	
Reference Elevation TOIC*(ft, NAD27)	**Upgradient/Background 423.23**		**Downgradient 392.37**		**Downgradient 386.48**		**Downgradient 391.33**		**Downgradient 390.18**		**Downgradient 388.17**	
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)**
3/29/2016	20.09	403.14	15.68	376.69	13.51	372.97	22.82	368.51	13.64	376.54	19.43	368.74
5/23/2016	20.54	402.69	16.11	376.26	13.55	372.93	21.32	370.01	13.62	376.56	19.77	368.4
8/18/2016	21.14	402.09	19.74	372.63	13.92	372.56	23.95	367.38	14.50	375.68	20.60	367.57
10/26/2016	22.07	401.16	21.71	370.66	17.16	369.32	24.67	366.66	14.86	375.32	21.45	366.72
2/1/2017	21.28	401.95	17.87	374.5	13.50	372.98	20.70	370.63	14.71	375.47	18.67	369.5
5/2/2017	20.43	402.80	18.37	374.00	14.57	371.91	23.26	368.07	13.79	376.39	20.40	367.77
8/7/2017	21.62	401.61							14.71	375.47	21.90	366.27
8/8/2017			22.23	370.14	18.21	368.27	25.39	365.94				
9/5/2017	22.86	400.37									21.95	366.22
9/6/2017					17.41	369.07			14.95	375.23		
9/7/2017			22.15	370.22			24.31	367.02				
10/5/2017	24.00	399.23									22.24	365.93
10/6/2017			22.48	369.89	18.86	367.62	25.5	365.83	15.26	374.92		

*Reference elevation of monitoring wells surveyed by Fuller, Mossbarger, Scott and May, Civil Engineers, Inc., Lexington, Kentucky, December 1996, December 1999

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

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION LANDFILL
WEBSTER COUNTY, KENTUCKY

	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-1	MW-2			
Mar 2016	403.14	376.69	26.45	2223	0.0119
Oct 2016	401.16	370.66	30.50	2223	0.0137

	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-1	MW-5			
Mar 2016	403.14	376.54	26.60	3741	0.0071
Oct 2016	401.16	375.32	25.84	3741	0.0069

	Well ID / GW Elevation (ft,NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-1	MW-6			
Mar 2016	403.14	368.74	34.40	3325	0.0103
Oct 2016	401.16	366.72	34.44	3325	0.0104

Reference elevation surveyed by Fuller, Mossbarger, Scott and May, Civil Engineers, Inc., Lexington, Kentucky, December 1996, December 1999

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)

TABLE 4

CCR GROUNDWATER MONITORING SYSTEM

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY

Well No.		Location* Lat	Location* Long	Reference Elevation* TOIC (feet, NAD27)	Reference Elevation* GS (feet, NAD27)	Casing Length (feet, TOIC)	Size / Type (ID / Material)	Filter Pack Interval (feet, GS, NAD27) Top	Filter Pack Interval (feet, GS, NAD27) Bottom	Screened Interval (feet, GS, NAD27) Top	Screened Interval (feet, GS, NAD27) Bottom	Bottom of Boring (feet, GS)
Monitoring Wells												
MW-11 (8006-3938)	U / B	37.64262	-87.50325	401.32	398.36	51.5	2 inch / PVC	356.86	348.46	354.86	349.86	49.5
MW-12 (8006-3939)	D	37.63915	-87.50182	395.54	392.35	73.7	2 inch / PVC	333.85	320.35	331.85	321.85	72.0
MW-13 (8006-3940)	D	37.64086	-87.50072	394.60	391.46	52.6	2 inch / PVC	348.96	339.96	346.96	341.96	51.5
MW-14 (8006-3941)	D	37.64220	-87.50001	390.71	387.55	50.0	2 inch / PVC	347.75	337.95	345.75	340.75	49.6

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015
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 5

MONITORING WELL NETWORK GROUNDWATER ELEVATIONS - APRIL 2016 - OCTOBER 2017

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY

	GROUNDWATER MONITORING WELL NETWORK							
	MW-11		MW-12		MW-13		MW-14	
Reference Elevation TOIC*(ft, NAD27)	Upgradient/Background 401.32		Downgradient 395.54		Downgradient 394.60		Downgradient 390.71	
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)
4/1/2016	8.20	393.12	32.51	363.03	18.86	375.74	22.13	368.58
6/2/2016	8.32	393.00	29.62	365.92	18.83	375.77	23.01	367.7
8/16/2016	8.45	392.87	27.79	367.75	20.60	374	25.55	365.16
10/25/2016	9.06	392.26	29.57	365.97	20.30	374.3	26.52	364.19
1/26/2017	9.65	391.67						
1/27/2017			27.96	367.58	18.54	376.06	19.35	371.36
5/1/2017	10.12	391.20	26.93	368.61	19.23	375.37	24.01	366.7
8/11/2017	9.95	391.37	27.51	368.03	20.73	373.87	26.53	364.18
9/20/2017	9.97	391.35	32.20	363.34	20.68	373.92	26.03	364.68
10/9/2017	9.33	391.99	39.04	356.50	20.66	373.94	26.26	364.45

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015
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 6

HYDRAULIC GRADIENT
GROUNDWATER MONITORING SYSTEM

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY

	Well ID / GW Elevation (ft, NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-11	MW-12			
Apr 2016	393.12	363.03	30.09	1358	0.0222
Oct 2016	392.26	365.97	26.29	1358	0.0194
May 2017	391.20	368.61	22.59	1358	0.0166

	Well ID / GW Elevation (ft, NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-11	MW-13			
Apr 2016	393.12	375.74	17.38	996	0.0174
Oct 2016	392.26	374.30	17.96	996	0.0180
May 2017	391.20	375.37	15.83	996	0.0159

	Well ID / GW Elevation (ft, NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-11	MW-14			
Apr 2016	393.12	368.58	24.54	956	0.0257
Oct 2016	392.26	365.16	27.10	956	0.0283
May 2017	391.20	366.7	24.50	956	0.0256

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015

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)

TABLE 7

CCR GROUNDWATER MONITORING SYSTEM

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
REID/HMPL STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY

Well No.		Location*		Reference Elevation*		Casing Length	Size / Type	Filter Pack Interval		Screened Interval		Bottom of Boring
		Lat	Long	TOIC (feet, NAD27)	GS (feet, NAD27)	(feet, TOIC)	(ID / Material)	(feet, GS, NAD27)		(feet, GS, NAD27)		(feet, GS)
Monitoring Wells								Top	Bottom	Top	Bottom	
MW-7 (8006-3934)	U / B	37.64931	-87.50306	444.43	441.80	75.5	2 inch / PVC	375.90	368.40	373.90	368.90	73.4
MW-8 (8006-3935)	D	37.64886	-87.50860	394.29	385.84	60.7	2 inch / PVC	340.64	331.64	338.64	333.64	54.2
MW-9 (8006-3936)	D	37.64730	-87.50717	395.40	392.85	47.6	2 inch / PVC	359.85	336.55	357.85	347.85	56.3
MW-10 (8006-3937)	D	37.64637	-87.50586	422.27	419.98	81.8	2 inch / PVC	352.48	339.98	350.48	340.48	80.0

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015
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 8

MONITORING WELL NETWORK GROUNDWATER ELEVATIONS - MARCH 2016 - OCTOBER 2017
REID/HMPL STATION SURFACE IMPOUNDMENT

BIG RIVERS ELECTRIC CORPORATION
SEBREE STATION
WEBSTER COUNTY, KENTUCKY

	GROUNDWATER MONITORING WELL NETWORK							
	MW-7		MW-8		MW-9		MW-10	
Reference Elevation TOIC*(ft, NAD27)	Upgradient/Background 444.43		Downgradient 394.29		Downgradient 395.40		Downgradient 422.27	
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)
3/30/2016	14.93	429.5	1.64	392.65	3.44	391.96	31.71	390.56
5/31/2016	14.91	429.52	1.41	392.88	3.28	392.12	29.60	392.67
8/23/2016	15.75	428.68	1.42	392.87	3.56	391.84	29.96	392.31
10/18/2016	16.77	427.66	2.38	391.91	4.49	390.91	30.63	391.64
1/31/2017	15.59	428.84	1.94	392.35	4.16	391.24	30.63	391.64
2/9/2017	15.81	428.62	2.12	392.17	4.52	390.88	30.63	391.64
5/11/2017	15.73	428.70	1.74	392.55	4.05	391.35	30.20	392.07
8/23/2017	17.72	426.71	4.16	390.13	6.46	388.94	32.46	389.81
9/22/2017	18.10	426.33	4.52	389.77	6.71	388.69	32.74	389.53
10/11/2017	18.16	426.27	4.67	389.62	6.9	388.50	32.90	389.37

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015
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 9

HYDRAULIC GRADIENT
GROUNDWATER MONITORING SYSTEM

BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
REID/HMPL STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY

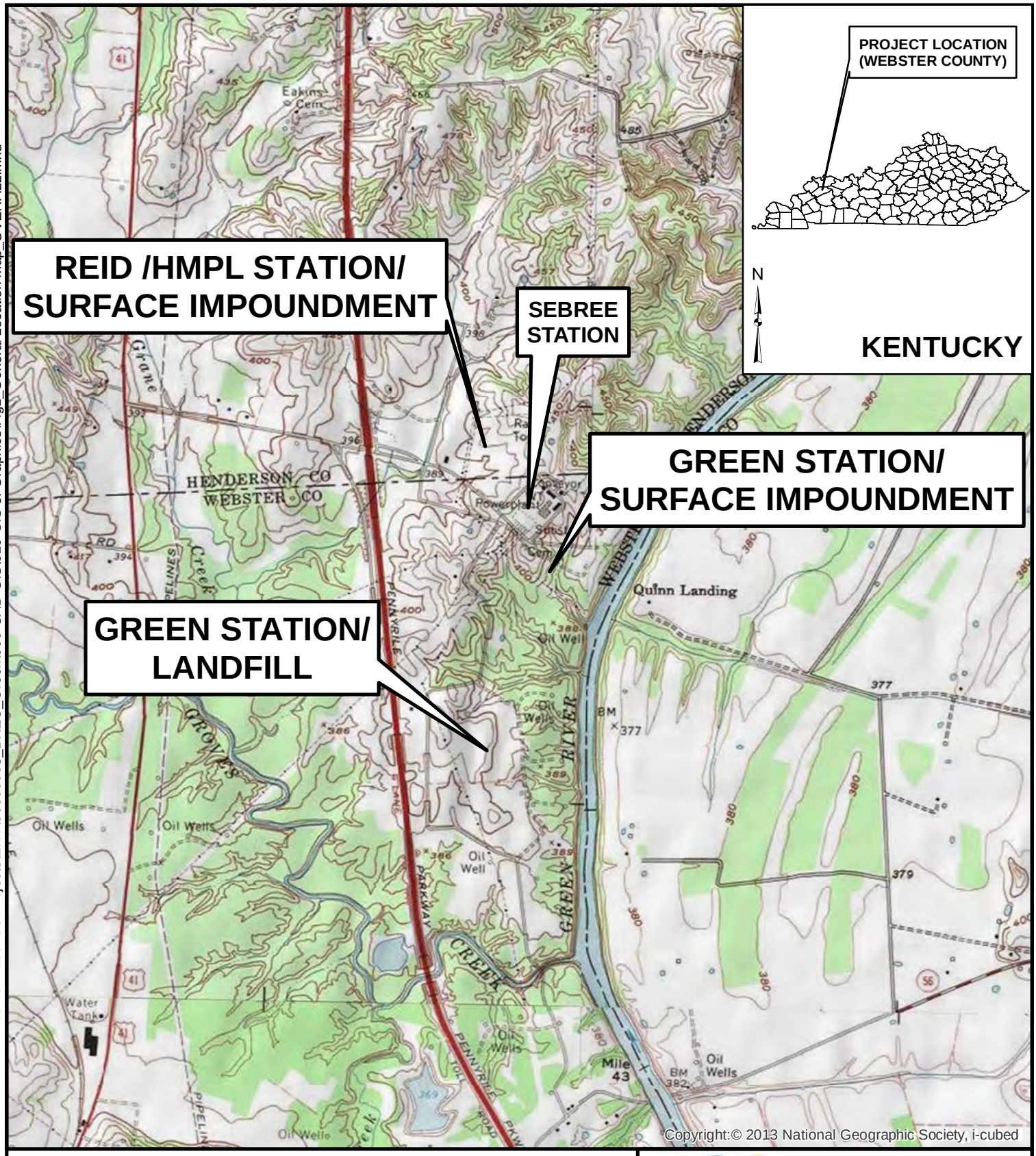
	Well ID / GW Elevation (ft, NAD27)		Change in Head (feet)	Horizontal Distance* (feet)	Hydraulic Gradient
	MW-7	MW-9			
Mar 2016	429.50	391.96	37.54	1466	0.0256
May 2016	429.52	392.12	37.40	1466	0.0255
Aug 2016	428.68	391.84	36.84	1466	0.0251
Oct 2016	427.66	390.91	36.75	1466	0.0251
Jan 2017	428.84	391.24	37.60	1466	0.0256
May 2017	428.70	391.35	37.35	1466	0.0255
Aug 2017	426.71	388.94	37.77	1466	0.0258
Sept 2017	426.33	388.69	37.64	1466	0.0257
Oct 2017	426.27	388.50	37.77	1466	0.0258

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015

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

ROBARDS QUADRANGLE
DELAWARE QUADRANGLE
(FROM ARCGIS ONLINE Copyright:© 2011 National Geographic Society, i-cubed)

0 2,000 4,000 Feet

N

Big Rivers ELECTRIC CORPORATION

Sebree Station
Webster County, Kentucky

FIGURE 1
GENERAL LOCATION MAP

DATE: 1/25/2018	SCALE: 1IN = 2,000 FEET
CREATED BY: ALW	
JOB NO. 60560586	



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Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Unit Boundary

0 300 600

Feet

N

Big Rivers Electric Corporation

Green Station Landfill
Webster County, Kentucky

FIGURE 2
CCR GROUNDWATER
MONITORING SYSTEM

DATE: 1/25/2018	SCALE: 1IN = 300 FEET
CREATED BY: ALW	
JOB NO. 60560583	

MW-1
401.16

MW-2
370.66

MW-3A
369.32

MW-4
366.66

MW-5
375.32

MW-6
366.72

390

380

370

370

bing

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Legend

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

366.72 Groundwater Elevation (Feet, MSL) Measured October 2016

0 300 600

Feet

N

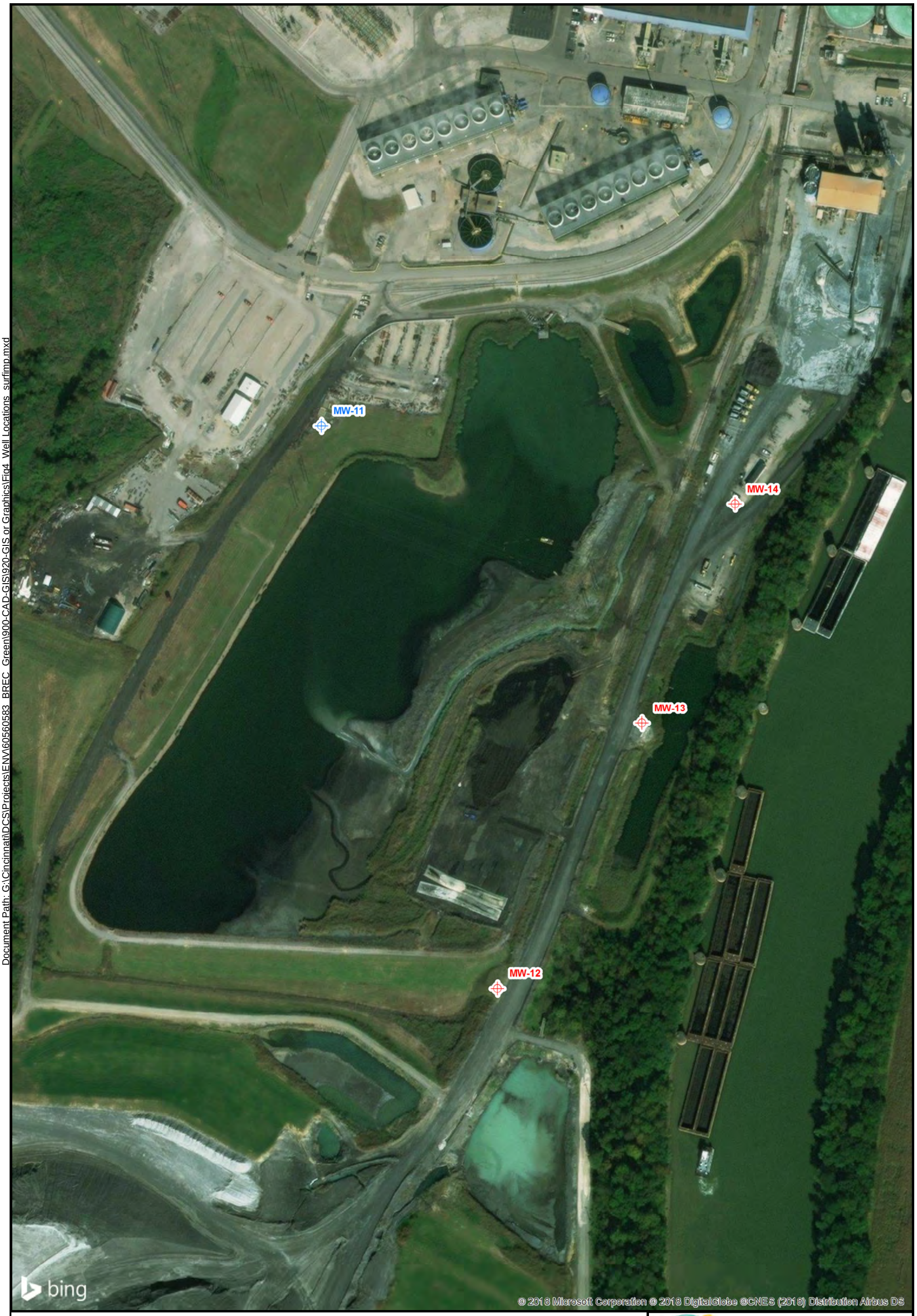
Big Rivers Electric Corporation

Green Station Landfill
Webster County, Kentucky

FIGURE 3
CCR GROUNDWATER MONITORING SYSTEM

DATE: 1/30/2018	SCALE: 1IN = 300 FEET
CREATED BY: ALW	
JOB NO. 60560583	

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Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Unit Boundary

0 200 400
Feet

N

Big Rivers Electric Corporation

Green Suface Impoundment
Webster County, Kentucky

FIGURE 4
CCR GROUNDWATER
MONITORING SYSTEM

DATE: 1/25/2018	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60560583	

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MW-11
392.26

MW-14
364.19

MW-13
374.30

MW-12
365.97

390

380

370

370

bing

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Legend

- Unit Boundary
- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Water Table Contour (Inferred from Available Monitoring Data)
- Groundwater Flow Direction
- 365.97 Groundwater Elevation (Feet, MSL) Measured October 2016

0 200 400

Feet

N

Big Rivers Electric Corporation

Green Suface Impoundment
Webster County, Kentucky

FIGURE 5
GROUNDWATER SURFACE MAP
OCTOBER 2016

DATE: 1/25/2018	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60560583	



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Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Unit Boundary

0 200 400
Feet

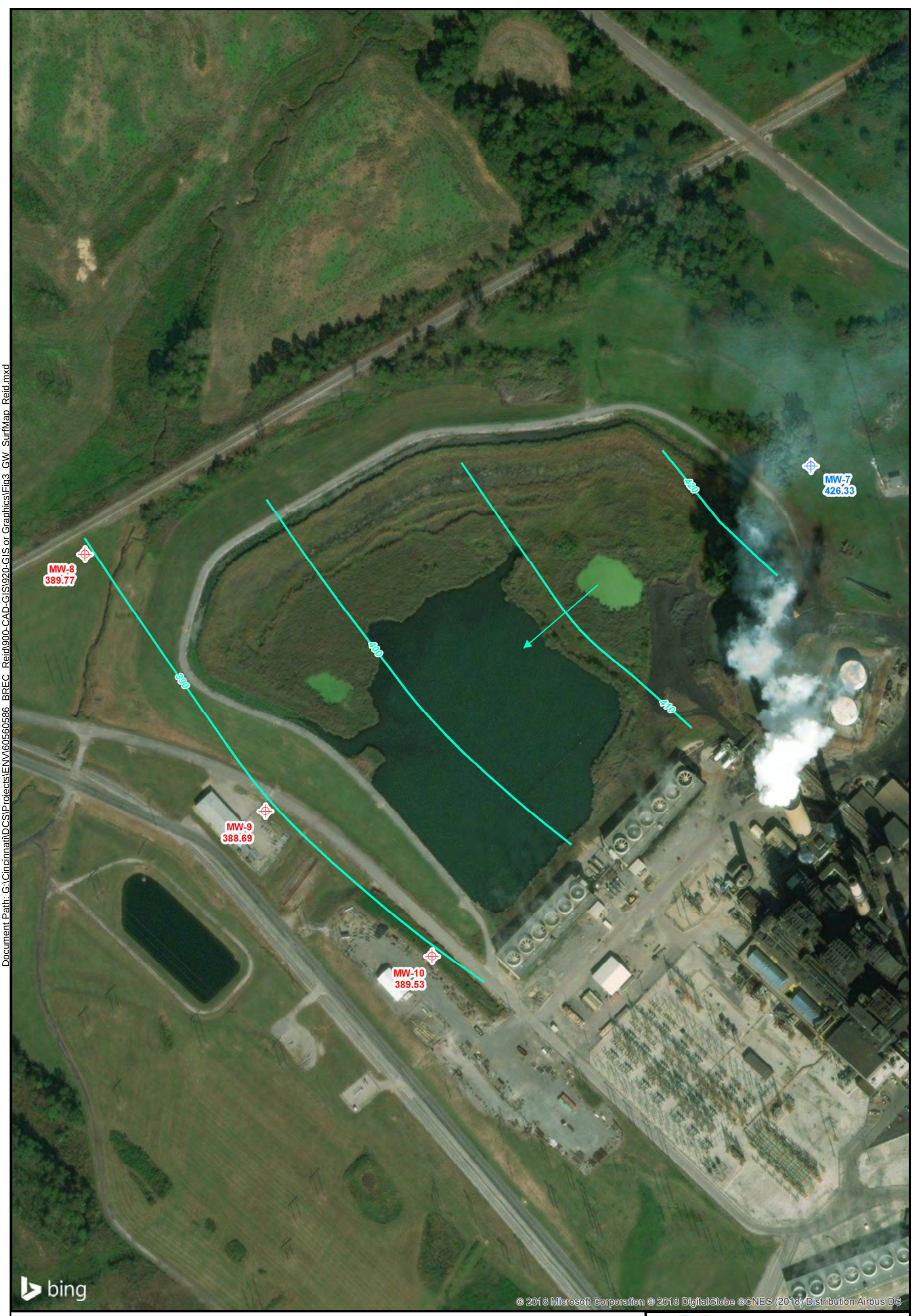
N

Big Rivers Electric Corporation

Reid/HMPL Surface Impoundment
Webster County, Kentucky

FIGURE 6
CCR GROUNDWATER
MONITORING SYSTEM

DATE: 1/25/2018	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60560586	



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Legend

- Unit Boundary
- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Water Table Contour (Inferred from Available Monitoring Data)
- Groundwater Flow Direction
- 426.33 Groundwater Elevation (Feet, MSL) Measured September 2017

0 200 400
Feet

N

BigRivers ELECTRIC CORPORATION

Reid/HMPL Surface Impoundment
Webster County, Kentucky

FIGURE 7
GROUNDWATER SURFACE MAP
SEPTEMBER 2017

DATE: 1/25/2018	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60560586	

Attachment A

GREEN STATION LANDFILL

GREEN LANDFILL - CCR ANALYTICAL SUMMARY

MW-1

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/26/2016	5/23/2016	8/18/2016	10/26/2016	2/1/2017	5/2/2017	8/7/2017	9/5/2017	10/5/2017
Boron	NA	1.67	ND	2.25	1.7	1.71	1.68	1.85	1.79	1.92
Calcium	NA	29.1	31.8	33	30.9	20.8	28.1	27.1	29.9	26.4
Chloride	NA	9.03	0.501	6.6	6.02	5.56	5.3	5.12	5.71	4.07
Fluoride	4 mg/L	0.888	0.0204	0.581	0.649	0.532	0.542	0.553	0.523	0.475
Sulfate	NA	25.2	22.8	22.9	20.7	28.4	24	25.3	23.4	24.9
pH (SU)	NA	7.39	7.24	7.57	7.19	7.63	7.54	7.45	7.48	7.63
Total Dissolved Solids	NA	598	588	585	585	605	630	614	627	636
APPENDIX IV CONSTITUENTS										
Antimony		ND	0.000125	0.00077	ND	ND	0.000163	0.00297	0.000346	
Arsenic		0.00264	0.000804	0.00057	0.00167	0.000539	0.000515	0.000635	0.00065	
Barium		0.0974	0.0933	0.0827	ND	0.0793	0.0806	0.0698	0.0752	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.000599	ND	ND	ND	ND	ND	0.000382	
Cobalt		0.00105	0.000384	0.00019	0.00144	0.000793	0.000831	0.000759	0.00084	
Fluoride		0.888	0.0204	0.581	0.649	0.532	0.542	0.553	0.523	
Lead		0.00018	0.000045	0.00007	ND	ND	ND	ND	0.000083	
Lithium		0.0293	0.0317	0.0326	0.0286	0.0342	0.0396	0.0314	0.0315	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		ND	0.00135		0.00128	0.00183	0.0013	0.00148	ND	
Radium 226		1.05	1.02	0.676	1.02	0.694	0.666	0.491	0.601	
Radium 228										
Selenium		ND	ND	ND	ND	ND	ND	0.000652	ND	
Thallium		ND	0.000111	ND	0.000122	ND	ND	0.000083	ND	

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

GREEN LANDFILL - CCR ANALYTICAL SUMMARY

MW-2

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/26/2016	5/23/2016	8/18/2016	11/14/2016	2/1/2017	5/2/2017	8/8/2017	9/7/2017	10/6/2017
Boron	NA	0.0444	0.0397	0.0551	0.0394	0.0448	0.0452	0.113	0.0402	0.0436
Calcium	NA	119	116	140	140	126	152	154	121	150
Chloride	NA	126	125	129	133	142	129	145	136	129
Fluoride	4 mg/L	0.412	ND	0.297	0.328	0.211	0.215	0.505	0.231	0.261
Sulfate	NA	80.0	84.5	85.5	90.1	89.8	83.2	92.0	90.8	88.6
pH (SU)	NA	6.81	6.59	6.7	6.78	7.12	7.04	6.77	6.69	6.86
Total Dissolved Solids	NA	764	780	830	880	862	918	913	818	970
APPENDIX IV CONSTITUENTS										
Antimony		ND	0.000082	0.00024	0.000149	ND	0.000114	0.00255	0.000425	
Arsenic		0.00703	0.00633	0.011	0.0159	0.0462	0.00755	0.0381	0.00527	
Barium		0.175	0.176	0.28	0.319	0.347	0.332	0.308	0.181	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		0.00013	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.00102	ND	ND	ND	ND	ND	ND	
Cobalt		0.00022	0.000136	0.00272	0.00307	0.000622	0.00274	0.000672	0.000791	
Fluoride		0.412	ND	0.297	0.328	0.211	0.215	0.505	0.231	
Lead		ND	ND	ND	ND	ND	ND	ND	ND	
Lithium		0.00815	ND	ND	ND	0.0113	0.0122	0.00992	ND	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.00248	0.00229	0.00232	0.00212	0.00281	0.00248	0.00282	0.00321	
Radium 226		0.533	ND	0.46	0.409	0.856	0.73	0.968	0.537	
Radium 228										
Selenium		ND	ND	ND	0.000663	ND	ND	0.000447	ND	
Thallium		ND	0.000039	ND	ND	ND	ND	ND	ND	

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

GREEN LANDFILL - CCR ANALYTICAL SUMMARY

MW-3A

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/26/2016	5/23/2016	8/18/2016	11/14/2016	2/1/2017	5/2/2017	8/8/2017	9/6/2017	10/6/2017
Boron	NA	0.145	0.135	0.279	0.213	0.235	0.232	0.304	0.376	0.313
Calcium	NA	431	322	362	365	327	420	421	438	408
Chloride	NA	2630	3070	2150	2150	2220	2120	1790	2270	1870
Fluoride	4 mg/L	1.09	0.63	0.436	0.725	0.0293	0.294	ND	3.16	0.277
Sulfate	NA	1330	1330	1190	1660	1080	1030	942	1130	1030
pH (SU)	NA	6.92	6.86	6.95	6.75	7.17	7.11	6.81	6.9	6.95
Total Dissolved Solids	NA	4440	5010	4170	4450	4270	5170	5010	5020	5300
APPENDIX IV CONSTITUENTS										
Antimony		ND	0.000163	0.00037	0.000119	ND	0.000068	0.00154	0.000546	
Arsenic		ND	0.00221	0.0006	0.000247	0.000569	0.000343	0.000298	0.000574	
Barium		0.048	0.0479	0.0481	0.0416	0.0469	0.0473	0.0429	0.0458	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		0.00025	0.000172	ND	ND	0.000247	0.000228	ND	ND	
Chromimum		ND	0.00118	ND	ND	ND	ND	ND	0.000529	
Cobalt		ND	0.000151	0.00236	0.00126	0.00218	0.000029	0.00334	0.000672	
Fluoride		1.09	0.63	0.436	0.725	0.0293	0.294	ND	3.16	
Lead		0.00039	ND	ND	ND	ND	ND	0.000118	0.000092	
Lithium		0.669	0.516	0.648	677	0.689	0.746	0.767	0.762	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		ND	0.000676	ND	ND	ND	ND	ND	ND	
Radium 226		1.38	0.386	0.472	1.15	1.15	0.923	1.53	1.03	
Radium 228										
Selenium		ND	ND	0.0005	0.00134	ND	ND	ND	ND	
Thallium		ND	0.000042	ND	ND	ND	ND	ND	0.000037	

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

GREEN LANDFILL - CCR ANALYTICAL SUMMARY

MW-4

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/29/2016	5/23/2016	8/18/2016	10/26/2016	2/1/2017	5/2/2017	8/8/2017	9/7/2017	10/6/2017
Boron	NA	0.602	0.498	1.58	1.7	1.54	2.09	2.51	2.87	1.36
Calcium	NA	660	386	464	558	591	774	743	739	828
Chloride	NA	1450	939	952	1000	1420	1320	1360	1880	1730
Fluoride	4 mg/L	0.875	ND	0.185	0.519	0.416	1.06	ND	0.112	0.0725
Sulfate	NA	1830	1640	1420	1420	1620	1430	1600	2020	1590
pH (SU)	NA	6.36	6.83	7.08	6.61	7.28	7.1	6.84	6.64	6.93
Total Dissolved Solids	NA	3700	4250	3440	3250	4420	4550	4890	4700	6220
APPENDIX IV CONSTITUENTS										
Antimony		ND	0.000084	0.0002	ND	ND	0.000118	0.00111	0.000531	
Arsenic		ND	0.0024	0.0005	ND	0.000805	0.000449	0.000318	0.000277	
Barium		0.0188	0.0151	0.017	0.0206	0.0313	0.0276	0.0251	0.0277	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		0.0001	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.00144	ND	ND	ND	ND	ND	ND	
Cobalt		ND	0.00009	ND	ND	ND	ND	ND	ND	
Fluoride		0.875	ND	0.185	0.519	0.416	1.06	ND	0.112	
Lead		0.00039	0.000029	ND	ND	ND	ND	ND	ND	
Lithium		1.39	0.838	1.13	1.25	1.35	1.59	1.77	1.66	
Mercury		0.00027	0.000224	0.00019	0.000248	0.000302	0.000717	0.825	0.485	
Molybdenum		0.00117	0.00209	ND	ND	0.00117	ND	ND	ND	
Radium 226		1.26	0.592	ND	0.536	1.22	1.43	1.94	1.19	
Radium 228										
Selenium		0.00294	0.00815	0.00109	ND	0.00316	ND	ND	0.000399	
Thallium		ND	ND	ND	0.000045	ND	ND	ND	ND	

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

GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-5

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/29/2016	5/23/2016	8/18/2016	10/26/2016	2/1/2017	5/2/2017	8/7/2017	9/6/2017	10/6/2017
Boron	NA	0.217	0.0896	0.216	0.214	0.222	0.241	0.257	0.276	0.262
Calcium	NA	452	189	374	399	335	464	423	407	383
Chloride	NA	1630	521	688	755	734	722	945	779	608
Fluoride	4 mg/L	0.858	ND	0.0308	ND	0.216	0.066	ND	3.69	0.0891
Sulfate	NA	1760	876	1780	1740	1880	1760	2060	1920	1600
pH (SU)	NA	6.76	6.74	6.99	6.61	7.14	7.44	6.87	7.13	7.06
Total Dissolved Solids	NA	4210	1660	3470	3610	3680	4250	4130	4120	4390
APPENDIX IV CONSTITUENTS										
Antimony		ND	0.00128	0.00012	ND	ND	0.000144	0.000834	0.000519	
Arsenic		ND	0.00243	0.00027	0.000229	0.000519	0.000356	0.000141	0.000562	
Barium		0.0165	0.0363	0.0158	0.0129	0.0162	0.0147	0.0149	0.0118	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		0.00015	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.00165	ND	ND	0.000793	0.000366	ND	0.000699	
Cobalt		ND	0.00337	0.00015	0.000214	ND	0.000065	ND	0.000059	
Fluoride		0.858	ND	0.0308	ND	0.216	0.066	ND	3.69	
Lead		0.00029	0.000079	ND	ND	ND	ND	ND	ND	
Lithium		0.521	0.136	0.305	0.325	0.368	0.415	0.405	0.353	
Mercury		ND	ND	ND	ND	ND	ND	3.51	ND	
Molybdenum		ND	0.000686	ND	ND	ND	ND	ND	ND	
Radium 226		1.16	0.736	0.959	0.957	0.765	0.888	1.54	0.773	
Radium 228										
Selenium		ND	ND	ND	ND	0.000384	0.000368	ND	ND	
Thallium		ND	ND	0.000044	0.000083	ND	0.000045	ND	0.000042	

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

GREEN LANDFILL - CCR ANALYTICAL SUMMARY

MW-6

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/29/2016	5/23/2016	8/18/2016	10/26/2016	2/1/2017	5/2/2017	8/7/2017	9/5/2017	10/5/2017
Boron	NA	0.156	0.137	0.193	0.168	0.173	0.179	0.167	0.199	0.178
Calcium	NA	467	374	373	400	320	415	365	382	376
Chloride	NA	167	149	136	150	125	129	128	123	138
Fluoride	4 mg/L	1.25	0.517	0.646	0.776	0.14	0.302	ND	1.97	0.567
Sulfate	NA	2250	3340	2550	2610	2700	2600	2820	2490	2700
pH (SU)	NA	6.66	6.65	6.96	6.6	6.92	6.97	6.76	6.95	6.86
Total Dissolved Solids	NA	4060	4280	4350	4470	4720	4700	4830	4890	4910
APPENDIX IV CONSTITUENTS										
Antimony		ND	0.00005	0.00022	ND	ND	0.000093	0.000815	0.000444	
Arsenic		ND	0.0018	0.00028	0.000199	0.000553	0.000467	0.000357	0.000692	
Barium		0.0128	0.0149	0.00807	0.0108	0.0104	0.119	0.0084	0.00987	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.00093	ND	ND	ND	ND	ND	0.000597	
Cobalt		ND	0.0002	0.00017	ND	0.000131	0.000097	ND	0.000089	
Fluoride		1.25	0.517	0.646	0.000675	0.14	0.302	ND	1.97	
Lead		0.0002	0.000023	ND	ND	ND	ND	ND	ND	
Lithium		0.0475	0.0527	0.0555	0.0524	0.0607	0.0724	0.0589	0.0554	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.00294	0.00314	0.00244	0.0017	0.00212	0.00189	0.00162	0.00147	
Radium 226		0.741	0.386	ND	0.751	ND	0.361	0.462	ND	
Radium 228										
Selenium		ND	ND	ND	ND	ND	ND	ND	ND	
Thallium		ND	0.00049	ND	ND	ND	ND	ND	ND	

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

GREEN STATION SURFACE IMPOUNDMENT

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-11

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/1/2016	6/2/2016	8/16/2016	10/25/2016	1/26/2017	5/1/2017	8/11/2017	9/20/2017	10/9/2017
Boron	NA	0.818	0.645	0.736	0.736	0.92	0.754	0.695	0.802	0.769
Calcium	NA	371	378	243	291	276	326	321	299	315
Chloride	NA	1070	1740	1880	2000	1880	1910	2360	1520	1940
Fluoride	4 mg/L	0.193	0.331	0.55	ND	0.209	0.514	ND	0.891	0.115
Sulfate	NA	1170	1400	1150	1150	1060	1010	1410	797	1050
pH (Field Measurement)	NA	7.23	7.24	7.29	7.22	7.20	7.04	6.89	6.88	6.86
Total Dissolved Solids	NA	3920	4610	4840	4490	4930	4830	5100	4880	5080
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000095	0.000197	ND	0.000271	0.00133	0.00027	0.000705	
Arsenic		0.00478	0.00531	0.00509	0.00271	0.00239	0.00291	0.00106	0.0011	
Barium		0.076	0.0794	0.0555	0.0384	0.038	0.0395	0.0313	0.0293	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.000804	ND	ND	ND	ND	ND	0.000457	
Cobalt		0.00494	0.00267	0.00277	0.00138	0.00131	0.00129	0.000654	0.000619	
Fluoride		0.193	0.331	0.55	ND	0.209	0.514	ND	0.891	
Lead		ND	0.000031	ND	ND	ND	ND	0.000079	ND	
Lithium		0.0365	0.0685	0.0651	0.0544	0.0591	0.0545	0.0615	0.0596	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.0163	0.000223	0.00224	0.00097	0.00111	0.00148	0.00186	ND	
Radium 226		1.35	0.975	1.61	1.86	1.66	2.18	2.69	2.08	
Radium 228										
Selenium		ND	0.00075	0.000653	ND	0.000354	0.000369	ND	0.000382	
Thallium		0.000542	ND	ND	ND	ND	0.000039	0.000086	ND	

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

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-12

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/1/2016	6/2/2016	8/16/2016	10/25/2016	1/27/2017	5/1/2017	8/11/2017	9/20/2017	10/9/2017
Boron	NA	0.174	0.186	0.28	0.286	0.335	0.306	0.296	0.334	0.274
Calcium	NA	68.6	95.1	81	99.4	87.7	90.9	88.5	94.5	92
Chloride	NA	29	32.4	26.9	26.2	24.6	21.7	21	19.8	17.4
Fluoride	4 mg/L	0.92	0.561	0.51	0.532	0.52	0.487	0.842	0.415	0.441
Sulfate	NA	168	146	95.7	64	54	41.3	33.8	25.3	19.7
pH (Field Measurement)	NA	7.85	7.4	7.52	7.33	7.65	5.02	6.56	7.07	7.07
Total Dissolved Solids	NA	472	745	726	677	679	676	674	758	641
APPENDIX IV CONSTIUENTS										
Antimony		0.00204	0.000111	0.000274	ND	0.000231	0.000487	0.000263	0.000576	
Arsenic		0.00596	0.00566	0.00322	0.00386	0.00229	0.00172	0.000865	0.00104	
Barium		0.0552	0.0818	0.0856	0.114	0.118	0.135	0.138	0.16	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		0.00081	0.000569	ND	ND	ND	ND	ND	0.00036	
Cobalt		ND	0.000176	0.000252	0.000199	0.000163	0.00022	0.000089	0.000191	
Fluoride		0.92	0.561	0.51	0.532	0.52	0.487	0.842	0.415	
Lead		0.000331	0.000097	ND	ND	ND	ND	0.000103	0.000093	
Lithium		0.01	0.0194	0.0173	0.0208	0.0215	0.0169	0.0244	0.0229	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.0769	0.0234	0.0141	0.0123	0.01	0.00842	0.00881	0.00827	
Radium 226		0.842	ND	ND	0.954	0.361	0.556	0.566	ND	
Radium 228										
Selenium		0.000773	ND	ND	ND	ND	0.000417	ND	ND	
Thallium		ND	ND	ND	ND	ND	0.000066	ND	ND	

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

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-13

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/1/2016	6/2/2016	8/16/2016	10/25/2016	1/27/2017	5/1/2017	8/11/2017	9/20/2017	10/9/2017
Boron	NA	0.035	0.0599	0.0426	0.0335	0.0437	0.0397	0.0512	0.0376	0.0324
Calcium	NA	93	95.1	85.1	94.5	82.8	90.2	92.3	94.3	92.2
Chloride	NA	20.5	25.2	22.3	24.8	22.2	21.4	21.6	21.3	19.9
Fluoride	4 mg/L	0.272	0.244	0.27	0.38	0.342	0.291	0.503	0.267	0.294
Sulfate	NA	118	118	106	104	96.2	98.1	96.6	88	96.4
pH (Field Measurement)	NA	6.78	6.9	6.97	6.86	7.22	8.25	6.48	6.64	6.62
Total Dissolved Solids	NA	699	721	684	704	678	714	702	727	695
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000056	0.000202	ND	0.000293	0.000432	0.00016	0.000641	
Arsenic		0.00311	0.00201	0.00125	0.00111	0.000648	0.00136	0.000962	0.000984	
Barium		0.0965	0.0805	0.0818	0.081	0.0747	0.0775	0.0793	0.0817	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.000554	ND	ND	ND	ND	ND	0.000561	
Cobalt		0.00378	0.00221	0.00178	0.00149	0.00072	0.00115	0.000868	0.000981	
Fluoride		0.272	0.244	0.27	0.38	0.342	0.291	0.503	0.267	
Lead		0.000216	0.000076	ND	ND	ND	ND	ND	ND	
Lithium		0.00929	0.0104	0.0123	0.0104	0.0113	ND	0.0111	ND	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.00353	0.00391	0.00349	0.00501	0.00463	0.00297	0.00312	0.00113	
Radium 226		0.503	ND	ND	ND	ND	0.164	0.47	0.749	
Radium 228										
Selenium		ND	ND	0.000508	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

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-14

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		4/1/2016	6/2/2016	8/16/2016	10/25/2016	1/27/2017	5/1/2017	8/11/2017	9/20/2017	10/9/2017
Boron	NA	0.196	0.186	0.234	0.209	0.25	0.234	0.277	0.273	0.241
Calcium	NA	194	194	171	193	183	193	193	187	194
Chloride	NA	161	184	185	193	191	185	212	230	199
Fluoride	4 mg/L	0.326	0.274	0.353	0.489	0.405	0.312	0.605	0.312	0.353
Sulfate	NA	188	219	216	215	221	197	179	198	185
pH (Field Measurement)	NA	6.63	6.35	7.43	7.34	7.78	5.23	7.33	7.13	7.32
Total Dissolved Solids	NA	1080	1130	1140	1130	1150	1170	1150	1240	1170
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000028	0.000102	ND	0.000228	0.000407	0.000254	0.000757	
Arsenic		0.00294	0.00145	0.000902	0.000829	0.000665	0.00113	0.00107	0.000786	
Barium		0.0647	0.0673	0.0648	0.0651	0.0663	0.0655	0.059	0.0627	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	ND	ND	ND	ND	ND	ND	0.000421	
Cobalt		ND	0.000328	0.000305	0.000157	0.000252	0.000298	0.000155	0.000221	
Fluoride		0.326	0.274	0.353	0.489	0.405	0.312	0.605	0.312	
Lead		ND	0.000049	ND	ND	ND	ND	ND	0.000133	
Lithium		0.04	0.0488	0.0477	0.0456	0.0486	0.0437	0.0494	0.0496	
Mercury		ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum		0.000598	0.000789	ND	ND	ND	ND	ND	ND	
Radium 226		1.54	1.42	1.86	1.55	1.31	2.17	2.85	1.8	
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

REID/HMPL STATION SURFACE IMPOUNDMENT

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-7

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/30/2016	5/31/2016	8/23/2016	10/18/2016	1/31/2017	5/11/2017	8/23/2017	9/22/2017	10/11/2017
Boron	NA	0.246	0.245	0.271	0.25	0.33	0.295	0.286	0.268	0.32
Calcium	NA	41.1	42.1	42.3	47.6	41.5	41.1	45.1	40.6	41.8
Chloride	NA	2.48	2.52	2.93	3.26	4.02	5.73	4.99	5.28	3.65
Fluoride	4 mg/L	0.21	0.223	0.232	0.295	0.319	0.282	0.279	0.332	0.295
Sulfate	NA	12.8	13.2	15.9	18.8	23.6	25.7	22.3	16.6	14.2
pH (Field Measurement)	NA	7.39	7.47	7.6	7.16	7.74	7.26	7.23	7.36	7.36
Total Dissolved Solids	NA	233	243	243	250	253	291	290	267	278
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000579	0.000745	0.000594	ND	ND	0.000202	0.000391	
Arsenic		ND	0.00118	0.000932	0.000881	0.000996	0.000606	0.0000882	0.00308	
Barium		0.0565	0.0528	0.0515	0.0626	0.0677	0.0592	0.0597	0.0699	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	ND	ND	ND	ND	ND	ND	ND	
Cobalt		0.00059	0.000567	0.000402	0.00041	0.000239	0.000192	0.00023	0.00239	
Fluoride		0.21	0.223	0.232	0.295	0.319	0.282	0.279	0.332	
Lead		0.00064	0.000082	ND	0.000256	ND	ND	ND	ND	
Lithium		0.00739	ND	ND	ND	0.00994	ND	ND	ND	
Mercury		ND	ND	ND	ND	ND	ND	0.000135	ND	
Molybdenum		0.0109	0.0185	0.0136	0.0118	0.0127	0.00764	0.00946	0.00543	
Radium 226				0.473	ND	0.921	0.662	0.795	0.642	
Radium 228										
Selenium		ND	ND	ND	0.00066	ND	ND	ND	ND	
Thallium		ND	0.000058	0.000039	ND	ND	ND	ND	ND	

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

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-8

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/30/2016	5/31/2016	8/23/2016	10/18/2016	1/31/2017	5/11/2017	8/23/2017	9/22/2017	10/11/2017
Boron	NA	1.46	1.07	1.3	1	1.74	1.6	1.37	1.32	1.54
Calcium	NA	283	242	228	194	235	251	253	228	235
Chloride	NA	48.7	38.2	41.4	66.4	42.1	43.6	47.1	58.5	38.6
Fluoride	4 mg/L	0.498	0.417	0.428	0.541	0.466	0.48	0.79	0.488	0.441
Sulfate	NA	1100	1140	1120	1080	1220	1180	1110	1440	1040
pH (Field Measurement)	NA	7.13	7.14	7.37	7.06	7.50	7.10	7.11	7.10	7.15
Total Dissolved Solids	NA	1930	1980	1960	2030	2010	1990	2090	2030	2100
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000082	0.000194	0.000295	ND	0.00125	0.000199	0.000233	
Arsenic		ND	0.000698	0.000139	0.000184	0.00051	0.000755	ND	0.000222	
Barium		0.0177	0.0185	0.0156	0.0157	0.0198	0.0173	0.0177	0.0157	
Beryllium		ND	0.000038	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	0.000676	ND	ND	ND	ND	ND	ND	
Cobalt		ND	0.000059	0.00004	0.000055	ND	0.000038	ND	ND	
Fluoride		0.498	0.417	0.428	0.541	0.466	0.48	0.79	0.488	
Lead		ND	ND	ND	0.000183	ND	ND	ND	ND	
Lithium		0.0314	0.035	0.0314	0.0324	0.0408	0.0377	0.0367	0.0375	
Mercury		ND	ND	ND	ND	ND	ND	0.000128	ND	
Molybdenum		0.0138	0.0186	0.0157	0.0147	0.0173	0.0158	0.0175	0.0139	
Radium 226			1.32	1.36	1.36	1.92	1.12	1.48	1.4	
Radium 228										
Selenium		ND	ND	ND	0.000995	ND	ND	ND	0.00051	
Thallium		ND	0.000035	ND	ND	ND	ND	ND	ND	

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

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-9

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/30/2016	5/31/2016	8/23/2016	10/18/2016	1/31/2017	5/11/2017	8/23/2017	9/22/2017	10/11/2017
Boron	NA	0.316	0.264	0.333	0.257	0.431	0.362	0.101	0.0844	0.0816
Calcium	NA	64.1	71.2	71.5	72.3	75	72.9	60.8	57.6	57
Chloride	NA	26.5	30.9	36.6	32.6	42.4	38	6.4	7.14	5.83
Fluoride	4 mg/L	0.212	0.238	0.222	0.256	0.286	0.287	0.203	0.254	0.198
Sulfate	NA	9.51	17.6	27.7	39.6	57.2	30.4	1.11	1.38	0.265
pH (Field Measurement)	NA	7.32	7.27	7.55	7.13	7.64	7.31	7.04	7.04	7.04
Total Dissolved Solids	NA	363	389	403	409	465	435	303	308	316
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000029	0.000186	0.000228	ND	0.000903	0.000158	0.000212	
Arsenic		ND	0.000494	0.000323	0.00033	0.00052	0.000632	0.000169	ND	
Barium		1.1	1.03	0.889	0.635	0.827	0.833	0.253	0.227	
Beryllium		ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		ND	ND	ND	ND	ND	ND	ND	ND	
Cobalt		ND	0.000073	0.00006	0.000057	ND	ND	ND	ND	
Fluoride		0.212	0.238	0.222	0.256	0.286	0.287	0.203	0.254	
Lead		ND	0.000022	ND	0.00015	ND	ND	ND	ND	
Lithium		0.012	0.0105	0.0102	0.0119	0.0179	0.0136	ND	ND	
Mercury		ND	ND	ND	ND	ND	ND	0.000119	0.000101	
Molybdenum		ND	ND	ND	ND	ND	ND	ND	ND	
Radium 226			2.84	2.91	1.38	2.11	2.53	1.28	1.26	
Radium 228										
Selenium		ND	ND	ND	ND	ND	ND	ND	ND	
Thallium		ND	0.000024	ND	ND	ND	ND	ND	ND	

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

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY

MW-10

APPENDIX III CONSTITUENTS	PRIMARY MCL	DATE								
		3/30/2016	5/31/2016	8/23/2016	10/18/2016	2/9/2017	5/11/2017	8/23/2017	9/22/2017	10/11/2017
Boron	NA	0.416	0.336	0.46	0.489	0.54	0.679	0.56	0.543	0.637
Calcium	NA	16.5	21.3	23	36	14.3	13.1	33.7	21.4	11.9
Chloride	NA	31.5	26.9	28.9	31.6	29.4	29.1	32.3	29.7	25.8
Fluoride	4 mg/L	0.389	0.436	0.415	0.478	0.437	0.556	0.47	0.534	0.585
Sulfate	NA	208	135	144	152	145	168	177	226	147
pH (Field Measurement)	NA	9.72	8.95	8.1	7.53	7.08	9.84	8.14	8.14	9.19
Total Dissolved Solids	NA	644	532	558	602	679	763	758	763	728
APPENDIX IV CONSTIUENTS										
Antimony		ND	0.000106	0.000256	0.000167	ND	0.00115	0.000099	0.000231	
Arsenic		0.00139	0.00203	0.00302	0.00271	0.00325	0.00373	0.00431	0.00295	
Barium		0.0372	0.0477	0.0635	0.108	0.0705	0.0591	0.121	0.0823	
Beryllium		ND	ND	ND	ND	0.000102	ND	ND	ND	
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	
Chromimum		0.00265	0.000591	0.000876	ND	0.00245	0.00169	0.00034	ND	
Cobalt		ND	0.000122	0.000199	0.000257	0.000431	0.000408	0.000053	0.000261	
Fluoride		0.389	0.436	0.415	0.478	0.437	0.556	0.47	0.534	
Lead		ND	0.000423	ND	0.000088	0.00013	0.000188	ND	ND	
Lithium		0.339	0.199	0.219	0.0736	0.481	0.607	0.204	0.345	
Mercury		ND	ND	ND	ND	ND	ND	0.000122	ND	
Molybdenum		0.017	0.0171	0.0141	0.00995	0.0119	0.00987	0.00374	0.00468	
Radium 226			ND	0.715	ND	0.422	0.287	0.619	0.391	
Radium 228										
Selenium		ND	ND	ND	0.000378	ND	ND	ND	ND	
Thallium		ND	0.000037	ND	ND	ND	ND	ND	ND	

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

Attachment B

GREEN STATION LANDFILL

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: 490-100759-1
Client Project/Site: Green Landfill CCR

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

Attn: Brad Coyle

Cathy Gartner

Authorized for release by:
5/10/2016 1:25:25 PM

Cathy Gartner, Project Manager I
(615)301-5041
cathy.gartner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

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

TestAmerica Job ID: 490-100759-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-100759-1	MW-1	Water	03/29/16 10:55	04/02/16 09:30
490-100759-2	MW-2	Water	03/29/16 15:55	04/02/16 09:30
490-100759-3	MW-3A	Water	03/29/16 15:00	04/02/16 09:30
490-100759-4	MW-4	Water	03/29/16 13:45	04/02/16 09:30
490-100759-5	MW-5	Water	03/29/16 12:40	04/02/16 09:30
490-100759-6	MW-6	Water	03/29/16 11:55	04/02/16 09:30
490-100759-7	DUPE	Water	03/29/16 13:50	04/02/16 09:30
490-100759-8	BLANK	Water	03/29/16 00:01	04/02/16 09:30

Job ID: 490-100759-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-100759-1

Comments
No additional comments.

Receipt
The samples were received on 4/2/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.8º C, 0.9º C, 2.0º C and 2.4º C.

RAD
Method(s) PrecSep_0: Radium-228 Prep Batch 160-245286:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1 (490-100759-1), MW-2 (490-100759-2), MW-3A (490-100759-3), MW-4 (490-100759-4), MW-5 (490-100759-5), MW-6 (490-100759-6), DUPE (490-100759-7) and BLANK (490-100759-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead. Lot 440-143355 was prepared at a reduced aliquot due to limited sample volume.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-245254:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1 (490-100759-1), MW-2 (490-100759-2), MW-3A (490-100759-3), MW-4 (490-100759-4), MW-5 (490-100759-5), MW-6 (490-100759-6), DUPE (490-100759-7) and BLANK (490-100759-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead. Lot 440-143355 was prepared at a reduced aliquot due to limited sample volume.

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

Job ID: 490-100759-2

Laboratory: TestAmerica Nashville

Narrative

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

Metals
Method(s) 6020A: preparation batch 160-245257 and analytical batch 160-246912
Due to linear range check (LRC) failures, the linear range for beryllium and lithium has been lowered to the concentration of the highest calibration standard (200ppb). The LCS and MS/MSD were above the linear range, but were within acceptable limits. (LCS 160-245257/2-A), (490-100759-E-1-B MS) and (490-100759-E-1-C MSD)

Method(s) 6020A: Prep batch 160-245257 analytical batch 160-246912
The low level check (CCVL) was outside the upper QC limits for calcium. Associated samples which are either below the reporting limit for the contaminant or exhibit concentrations at such a high level as to make the CCVL unnecessary do not require re-analysis. Original results are reported. (CCVL 160-246912/30)

Method(s) 6020A: preparation batch 160-245257 and analytical batch 160-247093
The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-3A (490-100759-3), MW-4 (490-100759-4), MW-5 (490-100759-5), MW-6 (490-100759-6) and DUPE (490-100759-7). Elevated reporting limits (RLs) are provided.

Method(s) 6020A: preparation batch 160-245257 and analytical batch 160-247144
The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-5 (490-100759-5). 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.

Job ID: 490-100759-2 (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.
H	Sample was prepped or analyzed beyond the specified holding time
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
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.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
E	Result exceeded calibration range.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-1
Date Collected: 03/29/16 10:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.888	J	5.00	0.0500	mg/L			04/26/16 21:04	5
Sulfate	25.2		25.0	0.150	mg/L			04/26/16 21:04	5
Chloride	9.03	J B	15.0	1.00	mg/L			04/26/16 21:04	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.67		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 22:07	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 19:25	2
Arsenic	0.00264	J	0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 19:25	2
Barium	0.0974	J	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 19:25	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 19:25	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 19:25	2
Calcium	29.1	^	2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 19:25	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 19:25	2
Cobalt	0.00105	J	0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 19:25	2
Lead	0.000180	J	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 19:25	2
Lithium	0.0293	J	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 19:25	2
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 19:25	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 19:25	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 19:25	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 06:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	598		10.0	7.00	mg/L			04/05/16 13:25	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	0.382		0.132	0.136	1.00	0.128	pCi/L	04/11/16 11:12	05/03/16 07:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*46.4*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:04*	*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	0.666	U	0.480	0.484	1.00	0.749	pCi/L	04/11/16 15:23	04/26/16 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*46.4*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:29*	*1*
Y Carrier	*85.6*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:29*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-1
Date Collected: 03/29/16 10:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-1
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	1.05		0.498	0.503	5.00	0.749	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-2

Date Collected: 03/29/16 15:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.412**	**J**	5.00	0.0500	mg/L			04/26/16 21:28	5
Sulfate	**80.0**		25.0	0.150	mg/L			04/26/16 21:28	5
Chloride	**126**	**B**	15.0	1.00	mg/L			04/26/16 21:28	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.0444**	**J**	0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 22:38	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 19:52	2
Arsenic	**0.00703**	**J**	0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 19:52	2
Barium	**0.175**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 19:52	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 19:52	2
Cadmium	**0.000126**	**J**	0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 19:52	2
Calcium	**119**		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 19:52	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 19:52	2
Cobalt	**0.000218**	**J**	0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 19:52	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 19:52	2
Lithium	**0.00815**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 19:52	2
Molybdenum	**0.00248**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 19:52	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 19:52	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 19:52	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 06:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**764**		10.0	7.00	mg/L			04/05/16 13:25	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	**0.258**		0.0893	0.0923	1.00	0.0874	pCi/L	04/11/16 11:12	05/03/16 07:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:04*	*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	0.276	U	0.267	0.268	1.00	0.434	pCi/L	04/11/16 15:23	04/26/16 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:29*	*1*
Y Carrier	*87.9*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:29*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-2
Date Collected: 03/29/16 15:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-2
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	0.533		0.281	0.284	5.00	0.434	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-3A

Date Collected: 03/29/16 15:00
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**1.09**	**J**	10.0	0.100	mg/L			04/26/16 21:52	10
Sulfate	**1330**		50.0	0.300	mg/L			04/26/16 21:52	10
Chloride	**2630**	**H B**	60.0	4.00	mg/L			05/04/16 22:30	20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.145**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 22:43	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 19:58	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 19:58	2
Barium	**0.0480**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 19:58	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 19:58	2
Cadmium	**0.000254**	**J**	0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 19:58	2
Calcium	**431**		5.00	0.170	mg/L		04/11/16 11:21	04/20/16 23:25	5
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 19:58	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 19:58	2
Lead	**0.000386**	**J**	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 19:58	2
Lithium	**0.669**		0.250	0.00268	mg/L		04/11/16 11:21	04/20/16 23:25	5
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 19:58	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 19:58	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 19:58	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4440**		40.0	28.0	mg/L			04/05/16 13:25	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	**0.632**		0.150	0.160	1.00	0.113	pCi/L	04/11/16 11:12	05/03/16 07:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:04*	*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	**0.745**		0.304	0.312	1.00	0.434	pCi/L	04/11/16 15:23	04/26/16 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:29*	*1*
Y Carrier	*77.4*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:29*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-3A
Date Collected: 03/29/16 15:00
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-3
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	1.38		0.339	0.351	5.00	0.434	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-4

Date Collected: 03/29/16 13:45
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.875**	**J**	10.0	0.100	mg/L			04/26/16 22:17	10
Sulfate	**1830**		50.0	0.300	mg/L			04/26/16 22:17	10
Chloride	**1450**	**B**	30.0	2.00	mg/L			04/26/16 22:17	10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.602**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 22:47	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 20:05	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 20:05	2
Barium	**0.0188**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 20:05	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 20:05	2
Cadmium	**0.000104**	**J**	0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 20:05	2
Calcium	**660**		10.0	0.341	mg/L		04/11/16 11:21	04/20/16 23:32	10
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 20:05	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 20:05	2
Lead	**0.000394**	**J**	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 20:05	2
Lithium	**1.39**		0.500	0.00535	mg/L		04/11/16 11:21	04/20/16 23:32	10
Molybdenum	**0.00117**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 20:05	2
Selenium	**0.00294**	**J**	0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 20:05	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 20:05	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.270**		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**3700**		40.0	28.0	mg/L			04/05/16 13:25	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	**0.164**		0.0778	0.0791	1.00	0.0908	pCi/L	04/11/16 11:12	05/03/16 07:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:04*	*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	**1.09**		0.344	0.359	1.00	0.459	pCi/L	04/11/16 15:23	04/26/16 07:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*
Y Carrier	*76.3*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-4
Date Collected: 03/29/16 13:45
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-4
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	1.26		0.353	0.367	5.00	0.459	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-5

Date Collected: 03/29/16 12:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.858**	**J**	10.0	0.100	mg/L			04/26/16 22:41	10
Sulfate	**1760**	**H B**	1250	7.50	mg/L			05/07/16 08:55	250
Chloride	**1630**	**B**	30.0	2.00	mg/L			04/26/16 22:41	10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.217**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 22:52	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 20:12	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 20:12	2
Barium	**0.0165**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 20:12	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 20:12	2
Cadmium	**0.000154**	**J**	0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 20:12	2
Calcium	**452**		10.0	0.341	mg/L		04/11/16 11:21	04/21/16 12:09	10
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 20:12	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 20:12	2
Lead	**0.000292**	**J**	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 20:12	2
Lithium	**0.521**		0.250	0.00268	mg/L		04/11/16 11:21	04/20/16 23:39	5
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 20:12	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 20:12	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 20:12	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4210**		40.0	28.0	mg/L			04/05/16 13:25	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	**0.159**		0.0868	0.0880	1.00	0.109	pCi/L	04/11/16 11:12	05/03/16 07:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:04*	*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	**1.01**		0.288	0.302	1.00	0.369	pCi/L	04/11/16 15:23	04/26/16 07:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*
Y Carrier	*79.3*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-5
Date Collected: 03/29/16 12:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-5
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	1.16		0.300	0.315	5.00	0.369	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-6

Date Collected: 03/29/16 11:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**1.25**	**J**	10.0	0.100	mg/L			04/26/16 23:05	10
Sulfate	**2250**	**H B**	500	3.00	mg/L			05/07/16 09:12	100
Chloride	**167**	**B**	30.0	2.00	mg/L			04/26/16 23:05	10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.156**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 22:56	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 20:39	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 20:39	2
Barium	**0.0128**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 20:39	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 20:39	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 20:39	2
Calcium	**467**		5.00	0.170	mg/L		04/11/16 11:21	04/20/16 23:46	5
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 20:39	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 20:39	2
Lead	**0.000200**	**J**	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 20:39	2
Lithium	**0.0475**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 20:39	2
Molybdenum	**0.00294**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 20:39	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 20:39	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 20:39	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4060**		40.0	28.0	mg/L			04/05/16 13:25	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	0.0816	U	0.0632	0.0637	1.00	0.0918	pCi/L	04/11/16 11:12	05/03/16 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*04/11/16 11:12*	*05/03/16 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	**0.659**		0.283	0.289	1.00	0.403	pCi/L	04/11/16 15:23	04/26/16 07:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*
Y Carrier	*80.7*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-6
Date Collected: 03/29/16 11:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-6
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	0.741		0.290	0.296	5.00	0.403	pCi/L		05/04/16 21:00	1

Client Sample ID: DUPE

Date Collected: 03/29/16 13:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.859**	**J**	10.0	0.100	mg/L			04/26/16 23:29	10
Sulfate	**1470**	**H B**	500	3.00	mg/L			05/07/16 09:29	100
Chloride	**1630**	**B**	30.0	2.00	mg/L			04/26/16 23:29	10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.577**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:01	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 20:46	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 20:46	2
Barium	**0.0186**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 20:46	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 20:46	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 20:46	2
Calcium	**621**		10.0	0.341	mg/L		04/11/16 11:21	04/20/16 23:52	10
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 20:46	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 20:46	2
Lead	**0.000368**	**J**	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 20:46	2
Lithium	**1.32**		0.500	0.00535	mg/L		04/11/16 11:21	04/20/16 23:52	10
Molybdenum	**0.00119**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 20:46	2
Selenium	**0.00362**	**J**	0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 20:46	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 20:46	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.267**		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4030**		40.0	28.0	mg/L			04/05/16 13:25	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	**0.224**		0.100	0.102	1.00	0.131	pCi/L	04/11/16 11:12	05/03/16 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*04/11/16 11:12*	*05/03/16 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	**0.656**		0.290	0.296	1.00	0.423	pCi/L	04/11/16 15:23	04/26/16 07:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*
Y Carrier	*82.2*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:30*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: DUPE
Date Collected: 03/29/16 13:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-7
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	0.880		0.307	0.313	5.00	0.423	pCi/L		05/04/16 21:00	1

Client Sample ID: BLANK

Date Collected: 03/29/16 00:01
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			04/26/16 23:53	1
Sulfate	**0.243**	**J**	5.00	0.0300	mg/L			04/26/16 23:53	1
Chloride	**0.414**	**J B**	3.00	0.200	mg/L			04/26/16 23:53	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:06	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 20:52	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 20:52	2
Barium	ND		0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 20:52	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 20:52	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 20:52	2
Calcium	ND		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 20:52	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 20:52	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 20:52	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 20:52	2
Lithium	**0.00183**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 20:52	2
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 20:52	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 20:52	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 20:52	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**15.0**		10.0	7.00	mg/L			04/05/16 13:25	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	0.0313	U	0.0478	0.0479	1.00	0.0824	pCi/L	04/11/16 11:12	05/03/16 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.3*		*40 - 110*	*04/11/16 11:12*	*05/03/16 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	**0.539**		0.257	0.262	1.00	0.376	pCi/L	04/11/16 15:23	04/26/16 07:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.3*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:35*	*1*
Y Carrier	*81.9*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:35*	*1*

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: BLANK
Date Collected: 03/29/16 00:01
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-8
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	0.570		0.261	0.266	5.00	0.376	pCi/L		05/04/16 21:00	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-334854/3
Matrix: Water
Analysis Batch: 334854

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			04/26/16 19:52	1
Sulfate	ND		5.00	0.0300	mg/L			04/26/16 19:52	1
Chloride	0.5453	J	3.00	0.200	mg/L			04/26/16 19:52	1

Lab Sample ID: LCS 490-334854/4
Matrix: Water
Analysis Batch: 334854

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	9.966		mg/L		100	80 - 120
Sulfate	100	90.58		mg/L		91	80 - 120
Chloride	100	92.19		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-334854/5
Matrix: Water
Analysis Batch: 334854

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	9.873		mg/L		99	80 - 120	1	20
Sulfate	100	90.41		mg/L		90	80 - 120	0	20
Chloride	100	92.28		mg/L		92	80 - 120	0	20

Lab Sample ID: 490-100759-8 MS
Matrix: Water
Analysis Batch: 334854

Client Sample ID: BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND		10.0	10.20		mg/L		102	80 - 120
Sulfate	0.243	J	100	95.05		mg/L		95	80 - 120
Chloride	0.414	J B	100	97.19		mg/L		97	80 - 120

Lab Sample ID: 490-100759-8 MSD
Matrix: Water
Analysis Batch: 334854

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
Fluoride	ND		10.0	10.26		mg/L		103	80 - 120	1	20
Sulfate	0.243	J	100	95.68		mg/L		95	80 - 120	1	20
Chloride	0.414	J B	100	97.71		mg/L		97	80 - 120	1	20

Lab Sample ID: MB 490-337626/11
Matrix: Water
Analysis Batch: 337626

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			05/04/16 18:09	1
Sulfate	ND		5.00	0.0300	mg/L			05/04/16 18:09	1
Chloride	0.5631	J	3.00	0.200	mg/L			05/04/16 18:09	1

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

Lab Sample ID: LCS 490-337626/12
Matrix: Water
Analysis Batch: 337626

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.00	5.034		mg/L		101	80 - 120
Sulfate	50.0	44.75		mg/L		89	80 - 120
Chloride	50.0	46.99		mg/L		94	80 - 120

Lab Sample ID: LCSD 490-337626/13
Matrix: Water
Analysis Batch: 337626

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	5.00	4.974		mg/L		99	80 - 120	1	20
Sulfate	50.0	44.68		mg/L		89	80 - 120	0	20
Chloride	50.0	46.90		mg/L		94	80 - 120	0	20

Lab Sample ID: 490-101174-F-4 MS
Matrix: Water
Analysis Batch: 337626

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
Fluoride	0.160	J F1	10.0	6.012	F1	mg/L		59	80 - 120
Sulfate	13.0	F1	100	66.13	F1	mg/L		53	80 - 120
Chloride	17.4	B F1	100	73.64	F1	mg/L		56	80 - 120

Lab Sample ID: MB 490-338023/3
Matrix: Water
Analysis Batch: 338023

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			05/07/16 04:22	1
Sulfate	0.2063	J	5.00	0.0300	mg/L			05/07/16 04:22	1
Chloride	0.3209	J	3.00	0.200	mg/L			05/07/16 04:22	1

Lab Sample ID: LCS 490-338023/4
Matrix: Water
Analysis Batch: 338023

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	1.094		mg/L		109	80 - 120
Sulfate	10.0	10.65		mg/L		107	80 - 120
Chloride	10.0	10.03		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-338023/5
Matrix: Water
Analysis Batch: 338023

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	1.00	1.103		mg/L		110	80 - 120	1	20
Sulfate	10.0	10.67		mg/L		107	80 - 120	0	20
Chloride	10.0	10.17		mg/L		102	80 - 120	1	20

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

Lab Sample ID: 490-101174-F-4 MS
Matrix: Water
Analysis Batch: 338023

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
Sulfate	16.0	B	2.00	79.84	E 4	mg/L		3191	80 - 120
Chloride	21.0	E B	2.00	92.87	E 4	mg/L		3591	80 - 120

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-245490/1-A
Matrix: Water
Analysis Batch: 245738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245490

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 21:59	1

Lab Sample ID: LCS 160-245490/2-A
Matrix: Water
Analysis Batch: 245738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245490

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2.00	1.959		mg/L		98	80 - 120

Lab Sample ID: 490-100759-1 MS
Matrix: Water
Analysis Batch: 245738

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 245490

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.67		2.00	3.676		mg/L		101	75 - 125

Lab Sample ID: 490-100759-1 MSD
Matrix: Water
Analysis Batch: 245738

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 245490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.67		2.00	3.728		mg/L		103	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-245257/1-A
Matrix: Water
Analysis Batch: 246912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245257

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 19:11	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 19:11	2
Barium	ND		0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 19:11	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 19:11	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 19:11	2
Calcium	ND	^	2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 19:11	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 19:11	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 19:11	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 19:11	2

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

Lab Sample ID: MB 160-245257/1-A
Matrix: Water
Analysis Batch: 246912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245257

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 19:11	2
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 19:11	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 19:11	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 19:11	2

Lab Sample ID: LCS 160-245257/2-A
Matrix: Water
Analysis Batch: 246912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245257

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4889		mg/L		98	80 - 120
Arsenic	1.00	0.9642		mg/L		96	80 - 120
Barium	1.00	1.017		mg/L		102	80 - 120
Beryllium	1.00	1.078	E	mg/L		108	80 - 120
Cadmium	1.00	1.019		mg/L		102	80 - 120
Calcium	10.0	10.24	^	mg/L		102	80 - 120
Chromium	1.00	1.002		mg/L		100	80 - 120
Cobalt	1.00	0.9804		mg/L		98	80 - 120
Lead	1.00	0.9887		mg/L		99	80 - 120
Lithium	1.00	1.019	E	mg/L		102	80 - 120
Molybdenum	0.500	0.5044		mg/L		101	80 - 120
Selenium	0.500	0.4704		mg/L		94	80 - 120
Thallium	0.200	0.2088		mg/L		104	80 - 120

Lab Sample ID: 490-100759-1 MS
Matrix: Water
Analysis Batch: 246912

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 245257

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.500	0.4936		mg/L		99	75 - 125
Arsenic	0.00264	J	1.00	0.9482		mg/L		95	75 - 125
Barium	0.0974	J	1.00	1.103		mg/L		101	75 - 125
Beryllium	ND		1.00	1.073	E	mg/L		107	75 - 125
Cadmium	ND		1.00	0.9942		mg/L		99	75 - 125
Calcium	29.1	^	10.0	38.23	^	mg/L		91	75 - 125
Chromium	ND		1.00	0.9535		mg/L		95	75 - 125
Cobalt	0.00105	J	1.00	0.9306		mg/L		93	75 - 125
Lead	0.000180	J	1.00	0.9533		mg/L		95	75 - 125
Lithium	0.0293	J	1.00	1.029	E	mg/L		100	75 - 125
Molybdenum	ND		0.500	0.5072		mg/L		101	75 - 125
Selenium	ND		0.500	0.4642		mg/L		93	75 - 125
Thallium	ND		0.200	0.2013		mg/L		101	75 - 125

Lab Sample ID: 490-100759-1 MSD
Matrix: Water
Analysis Batch: 246912

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 245257

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.500	0.5011		mg/L		100	75 - 125	2	20

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

Lab Sample ID: 490-100759-1 MSD
Matrix: Water
Analysis Batch: 246912

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 245257

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00264	J	1.00	0.9671		mg/L		96	75 - 125	2	20
Barium	0.0974	J	1.00	1.107		mg/L		101	75 - 125	0	20
Beryllium	ND		1.00	1.077	E	mg/L		108	75 - 125	0	20
Cadmium	ND		1.00	1.015		mg/L		102	75 - 125	2	20
Calcium	29.1	^	10.0	39.09	^	mg/L		100	75 - 125	2	20
Chromium	ND		1.00	0.9720		mg/L		97	75 - 125	2	20
Cobalt	0.00105	J	1.00	0.9441		mg/L		94	75 - 125	1	20
Lead	0.000180	J	1.00	0.9715		mg/L		97	75 - 125	2	20
Lithium	0.0293	J	1.00	1.040	E	mg/L		101	75 - 125	1	20
Molybdenum	ND		0.500	0.5101		mg/L		102	75 - 125	1	20
Selenium	ND		0.500	0.4648		mg/L		93	75 - 125	0	20
Thallium	ND		0.200	0.2062		mg/L		103	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-329094/1-A
Matrix: Water
Analysis Batch: 329102

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 329094

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 06:40	1

Lab Sample ID: LCS 490-329094/2-A
Matrix: Water
Analysis Batch: 329102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 329094

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.8195		ug/L		82	80 - 120

Lab Sample ID: 490-100652-A-1-C MS
Matrix: Water
Analysis Batch: 329102

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 329094

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1	1.00	0.7131	F1	ug/L		71	75 - 125

Lab Sample ID: 490-100652-A-1-D MSD
Matrix: Water
Analysis Batch: 329102

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 329094

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	1.00	0.7479		ug/L		75	75 - 125	5	20

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

Lab Sample ID: MB 490-328437/1
Matrix: Water
Analysis Batch: 328437

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			04/05/16 13:25	1

Lab Sample ID: LCS 490-328437/2
Matrix: Water
Analysis Batch: 328437

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	94.00		mg/L		94	90 - 110		

Lab Sample ID: LCSD 490-328437/3
Matrix: Water
Analysis Batch: 328437

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	95.00		mg/L		95	90 - 110	1	20

Lab Sample ID: 490-100579-C-1 DU
Matrix: Water
Analysis Batch: 328437

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	516			522.0		mg/L				1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-245254/1-A
Matrix: Water
Analysis Batch: 248977

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245254

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02441	U	0.0545	0.0545	1.00	0.0980	pCi/L	04/11/16 11:12	05/03/16 07:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.4*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:03*	*1*

Lab Sample ID: LCS 160-245254/2-A
Matrix: Water
Analysis Batch: 249010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245254

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	14.04		1.39	1.00	0.0952	pCi/L	126	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-245254/3-A
Matrix: Water
Analysis Batch: 249010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 245254

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	14.96		1.48	1.00	0.124	pCi/L	134	68 - 137	0.32	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-245286/1-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245286

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2288	U	0.261	0.262	1.00	0.430	pCi/L	04/11/16 15:23	04/26/16 07:28	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.4*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:28*	*1*
Y Carrier	*86.4*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:28*	*1*

Lab Sample ID: LCS 160-245286/2-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245286

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.3	19.73		2.02	1.00	0.376	pCi/L	129	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*
Y Carrier	*84.9*		*40 - 110*

Lab Sample ID: LCSD 160-245286/3-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 245286

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			15.3	18.34		1.89	1.00	0.380	pCi/L	120	56 - 140	0.35	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*
Y Carrier	*86.7*		*40 - 110*

HPLC/IC

Analysis Batch: 334854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	9056A	
490-100759-2	MW-2	Total/NA	Water	9056A	
490-100759-3	MW-3A	Total/NA	Water	9056A	
490-100759-4	MW-4	Total/NA	Water	9056A	
490-100759-5	MW-5	Total/NA	Water	9056A	
490-100759-6	MW-6	Total/NA	Water	9056A	
490-100759-7	DUPE	Total/NA	Water	9056A	
490-100759-8	BLANK	Total/NA	Water	9056A	
490-100759-8 MS	BLANK	Total/NA	Water	9056A	
490-100759-8 MSD	BLANK	Total/NA	Water	9056A	
LCS 490-334854/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-334854/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-334854/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 337626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-3	MW-3A	Total/NA	Water	9056A	
490-101174-F-4 MS	Matrix Spike	Total/NA	Water	9056A	
LCS 490-337626/12	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-337626/13	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-337626/11	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 338023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-5	MW-5	Total/NA	Water	9056A	
490-100759-6	MW-6	Total/NA	Water	9056A	
490-100759-7	DUPE	Total/NA	Water	9056A	
490-101174-F-4 MS	Matrix Spike	Total/NA	Water	9056A	
LCS 490-338023/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-338023/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-338023/3	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 245257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	3010A	
490-100759-1 MS	MW-1	Total/NA	Water	3010A	
490-100759-1 MSD	MW-1	Total/NA	Water	3010A	
490-100759-2	MW-2	Total/NA	Water	3010A	
490-100759-3	MW-3A	Total/NA	Water	3010A	
490-100759-4	MW-4	Total/NA	Water	3010A	
490-100759-5	MW-5	Total/NA	Water	3010A	
490-100759-6	MW-6	Total/NA	Water	3010A	
490-100759-7	DUPE	Total/NA	Water	3010A	
490-100759-8	BLANK	Total/NA	Water	3010A	
LCS 160-245257/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-245257/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 245490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	3010A	
490-100759-1 MS	MW-1	Total/NA	Water	3010A	
490-100759-1 MSD	MW-1	Total/NA	Water	3010A	
490-100759-2	MW-2	Total/NA	Water	3010A	
490-100759-3	MW-3A	Total/NA	Water	3010A	
490-100759-4	MW-4	Total/NA	Water	3010A	
490-100759-5	MW-5	Total/NA	Water	3010A	
490-100759-6	MW-6	Total/NA	Water	3010A	
490-100759-7	DUPE	Total/NA	Water	3010A	
490-100759-8	BLANK	Total/NA	Water	3010A	
LCS 160-245490/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-245490/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 245738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	6010C	245490
490-100759-1 MS	MW-1	Total/NA	Water	6010C	245490
490-100759-1 MSD	MW-1	Total/NA	Water	6010C	245490
490-100759-2	MW-2	Total/NA	Water	6010C	245490
490-100759-3	MW-3A	Total/NA	Water	6010C	245490
490-100759-4	MW-4	Total/NA	Water	6010C	245490
490-100759-5	MW-5	Total/NA	Water	6010C	245490
490-100759-6	MW-6	Total/NA	Water	6010C	245490
490-100759-7	DUPE	Total/NA	Water	6010C	245490
490-100759-8	BLANK	Total/NA	Water	6010C	245490
LCS 160-245490/2-A	Lab Control Sample	Total/NA	Water	6010C	245490
MB 160-245490/1-A	Method Blank	Total/NA	Water	6010C	245490

Analysis Batch: 246912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	6020A	245257
490-100759-1 MS	MW-1	Total/NA	Water	6020A	245257
490-100759-1 MSD	MW-1	Total/NA	Water	6020A	245257
490-100759-2	MW-2	Total/NA	Water	6020A	245257
490-100759-3	MW-3A	Total/NA	Water	6020A	245257
490-100759-4	MW-4	Total/NA	Water	6020A	245257
490-100759-5	MW-5	Total/NA	Water	6020A	245257
490-100759-6	MW-6	Total/NA	Water	6020A	245257
490-100759-7	DUPE	Total/NA	Water	6020A	245257
490-100759-8	BLANK	Total/NA	Water	6020A	245257
LCS 160-245257/2-A	Lab Control Sample	Total/NA	Water	6020A	245257
MB 160-245257/1-A	Method Blank	Total/NA	Water	6020A	245257

Analysis Batch: 247093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-3	MW-3A	Total/NA	Water	6020A	245257
490-100759-4	MW-4	Total/NA	Water	6020A	245257
490-100759-5	MW-5	Total/NA	Water	6020A	245257
490-100759-6	MW-6	Total/NA	Water	6020A	245257
490-100759-7	DUPE	Total/NA	Water	6020A	245257

Metals (Continued)

Analysis Batch: 247144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-5	MW-5	Total/NA	Water	6020A	245257

Prep Batch: 329094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100652-A-1-C MS	Matrix Spike	Total/NA	Water	7470A	
490-100652-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
490-100759-1	MW-1	Total/NA	Water	7470A	
490-100759-2	MW-2	Total/NA	Water	7470A	
490-100759-3	MW-3A	Total/NA	Water	7470A	
490-100759-4	MW-4	Total/NA	Water	7470A	
490-100759-5	MW-5	Total/NA	Water	7470A	
490-100759-6	MW-6	Total/NA	Water	7470A	
490-100759-7	DUPE	Total/NA	Water	7470A	
490-100759-8	BLANK	Total/NA	Water	7470A	
LCS 490-329094/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 490-329094/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 329102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100652-A-1-C MS	Matrix Spike	Total/NA	Water	7470A	329094
490-100652-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	329094
490-100759-1	MW-1	Total/NA	Water	7470A	329094
490-100759-2	MW-2	Total/NA	Water	7470A	329094
490-100759-3	MW-3A	Total/NA	Water	7470A	329094
490-100759-4	MW-4	Total/NA	Water	7470A	329094
490-100759-5	MW-5	Total/NA	Water	7470A	329094
490-100759-6	MW-6	Total/NA	Water	7470A	329094
490-100759-7	DUPE	Total/NA	Water	7470A	329094
490-100759-8	BLANK	Total/NA	Water	7470A	329094
LCS 490-329094/2-A	Lab Control Sample	Total/NA	Water	7470A	329094
MB 490-329094/1-A	Method Blank	Total/NA	Water	7470A	329094

General Chemistry

Analysis Batch: 328437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100579-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-100759-1	MW-1	Total/NA	Water	SM 2540C	
490-100759-2	MW-2	Total/NA	Water	SM 2540C	
490-100759-3	MW-3A	Total/NA	Water	SM 2540C	
490-100759-4	MW-4	Total/NA	Water	SM 2540C	
490-100759-5	MW-5	Total/NA	Water	SM 2540C	
490-100759-6	MW-6	Total/NA	Water	SM 2540C	
490-100759-7	DUPE	Total/NA	Water	SM 2540C	
490-100759-8	BLANK	Total/NA	Water	SM 2540C	
LCS 490-328437/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-328437/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 490-328437/1	Method Blank	Total/NA	Water	SM 2540C	

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

TestAmerica Job ID: 490-100759-1

Rad

Prep Batch: 245254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	PrecSep-21	
490-100759-2	MW-2	Total/NA	Water	PrecSep-21	
490-100759-3	MW-3A	Total/NA	Water	PrecSep-21	
490-100759-4	MW-4	Total/NA	Water	PrecSep-21	
490-100759-5	MW-5	Total/NA	Water	PrecSep-21	
490-100759-6	MW-6	Total/NA	Water	PrecSep-21	
490-100759-7	DUPE	Total/NA	Water	PrecSep-21	
490-100759-8	BLANK	Total/NA	Water	PrecSep-21	
LCS 160-245254/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-245254/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-245254/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 245286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-1	MW-1	Total/NA	Water	PrecSep_0	
490-100759-2	MW-2	Total/NA	Water	PrecSep_0	
490-100759-3	MW-3A	Total/NA	Water	PrecSep_0	
490-100759-4	MW-4	Total/NA	Water	PrecSep_0	
490-100759-5	MW-5	Total/NA	Water	PrecSep_0	
490-100759-6	MW-6	Total/NA	Water	PrecSep_0	
490-100759-7	DUPE	Total/NA	Water	PrecSep_0	
490-100759-8	BLANK	Total/NA	Water	PrecSep_0	
LCS 160-245286/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-245286/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-245286/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-1

Date Collected: 03/29/16 10:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-1

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		5	10 mL		334854	04/26/16 21:04	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 22:07	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 19:25	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 06:56	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.80 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.80 mL		248977	05/03/16 07:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.80 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.80 mL		247955	04/26/16 07:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 03/29/16 15:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-2

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		5	10 mL		334854	04/26/16 21:28	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 22:38	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 19:52	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 06:58	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.51 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.51 mL		248977	05/03/16 07:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.51 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.51 mL		247955	04/26/16 07:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 03/29/16 15:00
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-3

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		10	10 mL		334854	04/26/16 21:52	LDC	TAL NSH
Total/NA	Analysis	9056A		20	10 mL		337626	05/04/16 22:30	KS	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 22:43	LKJ	TAL SL

Lab Chronicle

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: MW-3A

Date Collected: 03/29/16 15:00
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 19:58	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		5	50 mL	50 mL	247093	04/20/16 23:25	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:05	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.28 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.28 mL		248977	05/03/16 07:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.28 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.28 mL		247955	04/26/16 07:29	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 03/29/16 13:45
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-4

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		10	10 mL		334854	04/26/16 22:17	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 22:47	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 20:05	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		10	50 mL	50 mL	247093	04/20/16 23:32	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:08	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.66 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.66 mL		248977	05/03/16 07:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.66 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.66 mL		247955	04/26/16 07:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 03/29/16 12:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-5

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		250	10 mL	1.0 mL	338023	05/07/16 08:55	JHS	TAL NSH
Total/NA	Analysis	9056A		10	10 mL		334854	04/26/16 22:41	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 22:52	LKJ	TAL SL

Lab Chronicle

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

TestAmerica Job ID: 490-100759-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 20:12	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		5	50 mL	50 mL	247093	04/20/16 23:39	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		10	50 mL	50 mL	247144	04/21/16 12:09	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:10	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.87 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.87 mL		248977	05/03/16 07:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.87 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.87 mL		247955	04/26/16 07:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 03/29/16 11:55
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-6

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		100	10 mL	1.0 mL	338023	05/07/16 09:12	JHS	TAL NSH
Total/NA	Analysis	9056A		10	10 mL		334854	04/26/16 23:05	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 22:56	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 20:39	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		5	50 mL	50 mL	247093	04/20/16 23:46	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:12	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.48 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.48 mL		248977	05/03/16 07:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.48 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.48 mL		247955	04/26/16 07:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 03/29/16 13:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-7

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		100	10 mL	1.0 mL	338023	05/07/16 09:29	JHS	TAL NSH
Total/NA	Analysis	9056A		10	10 mL		334854	04/26/16 23:29	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:01	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL

Lab Chronicle

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

TestAmerica Job ID: 490-100759-1

Client Sample ID: DUPE

Date Collected: 03/29/16 13:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-7

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	6020A		2	50 mL	50 mL	246912	04/19/16 20:46	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		10	50 mL	50 mL	247093	04/20/16 23:52	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:15	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.14 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.14 mL		248977	05/03/16 07:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.14 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.14 mL		247955	04/26/16 07:30	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: BLANK

Date Collected: 03/29/16 00:01
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-8

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	10 mL		334854	04/26/16 23:53	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:06	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 20:52	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:17	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.68 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.68 mL		248977	05/03/16 07:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.68 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.68 mL		247960	04/26/16 07:35	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	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: Green Landfill CCR

TestAmerica Job ID: 490-100759-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
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

Certification Summary

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

TestAmerica Job ID: 490-100759-1

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16 *
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16 *
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16 *
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM


490-100759 Chain of Custody

Cooler Received/Opened On 4/2/2016 @ 0930

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

1. Tracking # 4250 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 97310166 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

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: 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) ACS

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) TH

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) TH

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) TH

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

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
100759

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 4/2/2016 @ 0930

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 8350 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 18290455 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

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

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

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) TH

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) TH

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) TH

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

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
100759

COOLER RECEIPT FORM

Cooler Received/Opened On 4/2/16 @ 0930

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

1. Tracking # 9191 1796 0353 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID ~~18290455~~ pH Strip Lot HC568401 Chlorine Strip Lot 1211515B

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 Front

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

6. Were custody papers inside cooler? YES...NO...NA SLW 4/2/16

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

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) TH

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) TH

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) TH

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

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
100759
#10
B

Cooler Received/Opened On 4/2/2016 @ 0930

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

1. Tracking # 9272 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 18290455 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

2. Temperature of rep. sample or temp blank when opened: 2.0 *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 (intial) MNK

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) TH

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) TH

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) TH

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

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	Project Manager: Bradley Coyle	Site Contact: Bradley Coyle	Date: 4/1/16	COC No: 490-51437-16688.1
Big Rivers Electric Corporation	Tel/Fax: 270-993-1572	Lab Contact: Roxanne Cisneros	Carrier: FedEx	1 of 1 COCs
201 Third Street	**Analysis Turnaround Time**			Sampler:
City/State/Zip	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
270-844-6032	TAT if different from Below _____			Walk-in Client:
bradley.coyle@bigrivers.com	☑ 2 weeks			Lab Sampling:
Green Landfill CCR	☐ 1 week			
Project: 49002917	☐ 2 days			Job / SDG No.:
P O #	☐ 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)	9040C, 9056_ORGFM_28D	6010B, 7470A	2540C_Calcd - TDS	Ra226 & 228 Combined	Sample Specific Notes:
MW-1	3/29/16	1055	G	GW	5	N		1	4	1	4	
MW-2	3/29/16	1555	G	GW	5	N		1	4	1	4	
MW-3A	3/29/16	1500	G	GW	5	N		1	4	1	4	
MW-4	3/29/16	1345	G	GW	5	N		1	4	1	4	
MW-5	3/29/16	1240	G	GW	5	N		1	4	1	4	
MW-6	3/29/16	1155	G	GW	5	N		1	4	1	4	
DUPE	3/29/16	1350	G	GW	5	N		1	4	1	4	
BLANK	3/29/16		G		5	N		1	4	1	4	

Loc: 490
100759

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

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: Run samples per protocol/methodology prescribed in 40 CFR Part 257.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

	Company	Date/Time		Company	Date/Time
Relinquished by:	BREC	04/01/16 1500	Received by:		
Relinquished by:			Received by:	TALS	4.2.16 0930
Relinquished by:			Received in Laboratory by:		

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

5/10/2016

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: 490-42985.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: cathy.gartner@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-100759-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/14/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Landfill CCR	Project #: 49010431			
Site:	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 (490-100759-1)	3/29/16	10:55 Central		Water			X	X	X	2	
MW-2 (490-100759-2)	3/29/16	15:55 Central		Water			X	X	X	2	
MW-3A (490-100759-3)	3/29/16	15:00 Central		Water			X	X	X	2	
MW-4 (490-100759-4)	3/29/16	13:45 Central		Water			X	X	X	2	
MW-5 (490-100759-5)	3/29/16	12:40 Central		Water			X	X	X	2	
MW-6 (490-100759-6)	3/29/16	11:55 Central		Water			X	X	X	2	
DUPE (490-100759-7)	3/29/16	13:50 Central		Water			X	X	X	2	
BLANK (490-100759-8)	3/29/16	00:01 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)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 4/4/16 13:33	Company TAL	Received by:	Date/Time: 4.5.16 0900	Company TASL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4-5-16	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:

5/10/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-100759-2

Login Number: 100759
List Number: 1
Creator: Threalkill, Tevin

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: 490-100759-2

Login Number: 100759
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 04/05/16 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	20.0, 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: Green Landfill CCR

TestAmerica Job ID: 490-100759-1

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-100759-1	MW-1	46.4
490-100759-2	MW-2	95.0
490-100759-3	MW-3A	99.1
490-100759-4	MW-4	91.3
490-100759-5	MW-5	105
490-100759-6	MW-6	92.9
490-100759-7	DUPE	100
490-100759-8	BLANK	98.3
LCS 160-245254/2-A	Lab Control Sample	103
LCSD 160-245254/3-A	Lab Control Sample Dup	105
MB 160-245254/1-A	Method Blank	98.4

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-100759-1	MW-1	46.4	85.6
490-100759-2	MW-2	95.0	87.9
490-100759-3	MW-3A	99.1	77.4
490-100759-4	MW-4	91.3	76.3
490-100759-5	MW-5	105	79.3
490-100759-6	MW-6	92.9	80.7
490-100759-7	DUPE	100	82.2
490-100759-8	BLANK	98.3	81.9
LCS 160-245286/2-A	Lab Control Sample	103	84.9
LCSD 160-245286/3-A	Lab Control Sample Dup	105	86.7
MB 160-245286/1-A	Method Blank	98.4	86.4

Tracer/Carrier Legend

Ba = Ba Carrier

Y = 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: 490-104392-1
Client Project/Site: Green Landfill CCR
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
6/29/2016 9:31:36 AM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

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

TestAmerica Job ID: 490-104392-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-104392-1	MW-1	Water	05/23/16 09:20	05/25/16 09:20
490-104392-2	MW-2	Water	05/23/16 14:30	05/25/16 09:20
490-104392-3	MW-3A	Water	05/23/16 13:50	05/25/16 09:20
490-104392-4	MW-4	Water	05/23/16 12:50	05/25/16 09:20
490-104392-5	MW-5	Water	05/23/16 11:50	05/25/16 09:20
490-104392-6	MW-6	Water	05/23/16 10:30	05/25/16 09:20
490-104392-7	DUPE	Water	05/23/16 10:55	05/25/16 09:20
490-104392-8	FIELD BLANK	Water	05/23/16 14:50	05/25/16 09:20

Job ID: 490-104392-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-104392-1

Comments
No additional comments.

Receipt
The samples were received on 5/25/2016 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.1º C, 1.6º C, 2.4º C and 4.0º C.

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

Narrative

Job Narrative
490-104392-2

Comments
No additional comments.

Receipt
The samples were received on 5/25/2016 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.1º C, 1.6º C, 2.4º C and 4.0º C.

HPLC/IC
Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-1 (490-104392-1), MW-2 (490-104392-2), MW-3A (490-104392-3), MW-4 (490-104392-4), MW-5 (490-104392-5), MW-6 (490-104392-6) and DUPE (490-104392-7). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-344985 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: The method blank for analytical batch 490-345276 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: The method blank for analytical batch 490-346159 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for 490-345276 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.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
E	Result exceeded calibration range.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
*	LCS or LCSD is outside acceptance limits.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-1

Date Collected: 05/23/16 09:20
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.501	J B	3.00	0.200	mg/L			06/03/16 04:31	1
Fluoride	0.0204	J	1.00	0.0100	mg/L			06/03/16 04:31	1
Sulfate	22.8	J	25.0	0.150	mg/L			06/08/16 14:46	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0317	J	0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 15:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000125	J	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 20:43	1
Arsenic	0.000804	J	0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 20:43	1
Barium	0.0933	J	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 20:43	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 20:43	1
Boron	1.49		1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 20:43	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 20:43	1
Calcium	31.8	B	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 20:43	1
Chromium	0.000599	J	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 20:43	1
Cobalt	0.000384	J	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 20:43	1
Lead	0.0000450	J	0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 20:43	1
Molybdenum	0.00135	J	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 20:43	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 20:43	1
Thallium	0.000111	J	0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 20:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.53		0.100	0.100	SU			06/07/16 11:23	1
Temperature	22.8		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	588		10.0	7.00	mg/L			05/27/16 15:30	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	0.510		0.132	0.140	1.00	0.121	pCi/L	06/02/16 15:01	06/24/16 05:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:16*	*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	0.505		0.255	0.259	1.00	0.378	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: MW-1
Date Collected: 05/23/16 09:20
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	06/02/16 15:29	06/21/16 13:27	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	1.02		0.287	0.295	5.00	0.378	pCi/L		06/28/16 10:30	1

Client Sample ID: MW-2

Date Collected: 05/23/16 14:30
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**125**	**B**	60.0	4.00	mg/L			06/03/16 04:48	20
Fluoride	ND		20.0	0.200	mg/L			06/03/16 04:48	20
Sulfate	**84.5**	**J**	100	0.600	mg/L			06/08/16 00:16	20

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		05/31/16 07:18	06/01/16 15:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000820**	**J**	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 20:48	1
Arsenic	**0.00633**		0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 20:48	1
Barium	**0.176**	**J**	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 20:48	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 20:48	1
Boron	**0.0397**	**J**	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 20:48	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 20:48	1
Calcium	**116**	**B**	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 20:48	1
Chromium	**0.00102**	**J**	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 20:48	1
Cobalt	**0.000136**	**J**	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 20:48	1
Lead	ND		0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 20:48	1
Molybdenum	**0.00229**	**J**	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 20:48	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 20:48	1
Thallium	**0.0000390**	**J**	0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 20:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.13**		0.100	0.100	SU			06/07/16 11:23	1
Temperature	**22.8**		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	**780**		10.0	7.00	mg/L			05/27/16 15:30	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	**0.261**		0.0990	0.102	1.00	0.107	pCi/L	06/02/16 15:01	06/24/16 05:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:16*	*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	0.138	U	0.256	0.257	1.00	0.435	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: MW-2
Date Collected: 05/23/16 14:30
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.0		40 - 110	06/02/16 15:29	06/21/16 13:27	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	0.399	U	0.275	0.276	5.00	0.435	pCi/L		06/28/16 10:30	1

Client Sample ID: MW-3A

Date Collected: 05/23/16 13:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3070		600	40.0	mg/L			06/06/16 09:36	200
Fluoride	0.630	J	20.0	0.200	mg/L			06/03/16 05:05	20
Sulfate	1330		500	3.00	mg/L			06/08/16 15:03	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.516		0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 15:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000163	J	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 21:09	1
Arsenic	0.00221	J	0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 21:09	1
Barium	0.0479	J	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 21:09	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 21:09	1
Boron	0.135	J	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 21:09	1
Cadmium	0.000172	J	0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 21:09	1
Calcium	322	B	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 21:09	1
Chromium	0.00118	J	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 21:09	1
Cobalt	0.000151	J	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 21:09	1
Lead	ND		0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 21:09	1
Molybdenum	0.000676	J	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 21:09	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 21:09	1
Thallium	0.0000420	J	0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 21:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.96		0.100	0.100	SU			06/07/16 11:23	1
Temperature	22.8		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	5010		100	70.0	mg/L			05/27/16 15:30	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	0.508		0.128	0.136	1.00	0.111	pCi/L	06/02/16 15:01	06/24/16 05:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:17*	*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	0.509		0.260	0.265	1.00	0.386	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: MW-3A
Date Collected: 05/23/16 13:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.0		40 - 110	06/02/16 15:29	06/21/16 13:27	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	1.02		0.290	0.297	5.00	0.386	pCi/L		06/28/16 10:30	1

Client Sample ID: MW-4

Date Collected: 05/23/16 12:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	939	B	600	40.0	mg/L			06/08/16 15:20	200
Fluoride	ND		20.0	0.200	mg/L			06/03/16 05:56	20
Sulfate	1640		1000	6.00	mg/L			06/08/16 15:20	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.838		0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 16:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000840	J	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 21:14	1
Arsenic	0.00240	J	0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 21:14	1
Barium	0.0151	J	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 21:14	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 21:14	1
Boron	0.498	J	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 21:14	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 21:14	1
Calcium	386	B	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 21:14	1
Chromium	0.00144	J	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 21:14	1
Cobalt	0.0000900	J	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 21:14	1
Lead	0.0000290	J	0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 21:14	1
Molybdenum	0.00209	J	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 21:14	1
Selenium	0.00815	J	0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 21:14	1
Thallium	ND		0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 21:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.224		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.14		0.100	0.100	SU			06/07/16 11:23	1
Temperature	22.8		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	4250		40.0	28.0	mg/L			05/27/16 15:30	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	0.214		0.0894	0.0914	1.00	0.0977	pCi/L	06/02/16 15:01	06/24/16 05:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:17*	*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	0.378		0.227	0.230	1.00	0.344	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: MW-4
Date Collected: 05/23/16 12:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	92.3		40 - 110	06/02/16 15:29	06/21/16 13:27	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	0.592		0.244	0.247	5.00	0.344	pCi/L		06/28/16 10:30	1

Client Sample ID: MW-5

Date Collected: 05/23/16 11:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**521**		300	20.0	mg/L			06/06/16 10:44	100
Fluoride	ND		20.0	0.200	mg/L			06/03/16 06:14	20
Sulfate	**876**		250	1.50	mg/L			06/08/16 01:58	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.136**		0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 16:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000128**	**J**	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 21:19	1
Arsenic	**0.00243**	**J**	0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 21:19	1
Barium	**0.0363**	**J**	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 21:19	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 21:19	1
Boron	**0.0896**	**J**	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 21:19	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 21:19	1
Calcium	**189**	**B**	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 21:19	1
Chromium	**0.00165**	**J**	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 21:19	1
Cobalt	**0.000337**	**J**	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 21:19	1
Lead	**0.0000790**	**J**	0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 21:19	1
Molybdenum	**0.000686**	**J**	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 21:19	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 21:19	1
Thallium	ND		0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 21:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.26**		0.100	0.100	SU			06/07/16 11:23	1
Temperature	**22.8**		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	**1660**		20.0	14.0	mg/L			05/27/16 16:30	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	**0.313**		0.114	0.117	1.00	0.133	pCi/L	06/02/16 15:01	06/24/16 05:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:17*	*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	**0.423**		0.245	0.248	1.00	0.369	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: MW-5
Date Collected: 05/23/16 11:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.9		40 - 110	06/02/16 15:29	06/21/16 13:27	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	0.736		0.270	0.274	5.00	0.369	pCi/L		06/28/16 10:30	1

Client Sample ID: MW-6

Date Collected: 05/23/16 10:30
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	149	B	60.0	4.00	mg/L			06/03/16 06:31	20
Fluoride	0.517	J	20.0	0.200	mg/L			06/03/16 06:31	20
Sulfate	3340		1000	6.00	mg/L			06/08/16 15:37	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0527		0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 16:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000500	J	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 21:24	1
Arsenic	0.00180	J	0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 21:24	1
Barium	0.0149	J	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 21:24	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 21:24	1
Boron	0.137	J	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 21:24	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 21:24	1
Calcium	374	B	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 21:24	1
Chromium	0.000931	J	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 21:24	1
Cobalt	0.000200	J	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 21:24	1
Lead	0.0000230	J	0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 21:24	1
Molybdenum	0.00314	J	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 21:24	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 21:24	1
Thallium	0.0000490	J	0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 21:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.85		0.100	0.100	SU			06/07/16 11:23	1
Temperature	22.8		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	4280		40.0	28.0	mg/L			05/27/16 16:30	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	0.173		0.0989	0.100	1.00	0.139	pCi/L	06/02/16 15:01	06/24/16 05:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:17*	*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	0.214	U	0.217	0.218	1.00	0.352	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

Client Sample ID: MW-6
Date Collected: 05/23/16 10:30
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-6
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	06/02/16 15:29	06/21/16 13:27	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	0.386		0.238	0.239	5.00	0.352	pCi/L		06/28/16 10:30	1

Client Sample ID: DUPE

Date Collected: 05/23/16 10:55
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	129	B	60.0	4.00	mg/L			06/03/16 06:48	20
Fluoride	0.670	J	20.0	0.200	mg/L			06/03/16 06:48	20
Sulfate	2950		1000	6.00	mg/L			06/08/16 15:55	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0428	J	0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 16:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000480	J	0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 21:29	1
Arsenic	0.00163	J	0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 21:29	1
Barium	0.0124	J	0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 21:29	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 21:29	1
Boron	0.124	J	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 21:29	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 21:29	1
Calcium	312	B	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 21:29	1
Chromium	0.00130	J	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 21:29	1
Cobalt	0.000188	J	0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 21:29	1
Lead	0.0000290	J	0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 21:29	1
Molybdenum	0.00391	J	0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 21:29	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 21:29	1
Thallium	0.0000210	J	0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 21:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 02:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.85		0.100	0.100	SU			06/07/16 11:23	1
Temperature	22.8		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	4080		40.0	28.0	mg/L			05/27/16 16:30	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	0.196		0.102	0.103	1.00	0.138	pCi/L	06/02/16 15:01	06/24/16 05:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:17*	*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	0.318	U	0.250	0.251	1.00	0.396	pCi/L	06/02/16 15:29	06/21/16 13:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:27*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: DUPE
Date Collected: 05/23/16 10:55
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-7
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	06/02/16 15:29	06/21/16 13:27	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	0.513		0.270	0.272	5.00	0.396	pCi/L		06/28/16 10:30	1

Client Sample ID: FIELD BLANK

Date Collected: 05/23/16 14:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-8
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			06/03/16 07:05	1
Fluoride	ND		1.00	0.0100	mg/L			06/03/16 07:05	1
Sulfate	ND		5.00	0.0300	mg/L			06/08/16 03:57	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		05/31/16 07:18	06/01/16 16:22	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		05/31/16 07:17	06/02/16 21:34	1
Arsenic	ND		0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 21:34	1
Barium	ND		0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 21:34	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 21:34	1
Boron	**0.00171**	**J**	1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 21:34	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 21:34	1
Calcium	**0.0494**	**J B**	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 21:34	1
Chromium	**0.000907**	**J**	0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 21:34	1
Cobalt	ND		0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 21:34	1
Lead	ND		0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 21:34	1
Molybdenum	ND		0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 21:34	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 21:34	1
Thallium	ND		0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 21:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 19:35	06/01/16 02:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.18**		0.100	0.100	SU			06/07/16 11:23	1
Temperature	**22.8**		0.100	0.100	Degrees C			06/07/16 11:23	1
Total Dissolved Solids	**9.00**	**J**	10.0	7.00	mg/L			05/27/16 16:30	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	0.0537	U	0.0664	0.0666	1.00	0.110	pCi/L	06/02/16 15:01	06/24/16 05:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:25*	*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	0.0675	U	0.194	0.194	1.00	0.336	pCi/L	06/02/16 15:29	06/21/16 13:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:28*	*1*

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

TestAmerica Job ID: 490-104392-1

Client Sample ID: FIELD BLANK
Date Collected: 05/23/16 14:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-8
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	91.2		40 - 110	06/02/16 15:29	06/21/16 13:28	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	0.121	U	0.205	0.205	5.00	0.336	pCi/L		06/28/16 10:30	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-344985/3
Matrix: Water
Analysis Batch: 344985

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3608	J	3.00	0.200	mg/L			06/03/16 01:06	1
Fluoride	ND		1.00	0.0100	mg/L			06/03/16 01:06	1
Sulfate	ND		5.00	0.0300	mg/L			06/03/16 01:06	1

Lab Sample ID: LCS 490-344985/4
Matrix: Water
Analysis Batch: 344985

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	9.865		mg/L		99	80 - 120
Fluoride	1.00	1.007		mg/L		101	80 - 120
Sulfate	10.0	12.38	*	mg/L		124	80 - 120

Lab Sample ID: LCSD 490-344985/5
Matrix: Water
Analysis Batch: 344985

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	9.741		mg/L		97	80 - 120	1	20
Fluoride	1.00	1.002		mg/L		100	80 - 120	0	20
Sulfate	10.0	12.39	*	mg/L		124	80 - 120	0	20

Lab Sample ID: 490-104376-E-2 MS
Matrix: Water
Analysis Batch: 344985

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	ND	F1 F2	2.00	19.26	F1	mg/L		963	80 - 120
Fluoride	ND		0.200	0.1895	J	mg/L		95	80 - 120
Sulfate	ND	* F1 F2	2.00	20.15	E F1	mg/L		1008	80 - 120

Lab Sample ID: 490-104376-E-2 MSD
Matrix: Water
Analysis Batch: 344985

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	ND	F1 F2	2.00	1.904	J F2	mg/L		95	80 - 120	164	20
Fluoride	ND		0.200	0.2010	J	mg/L		101	80 - 120	6	20
Sulfate	ND	* F1 F2	2.00	2.114	J F2	mg/L		106	80 - 120	162	20

Lab Sample ID: MB 490-345276/3
Matrix: Water
Analysis Batch: 345276

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2780	J	3.00	0.200	mg/L			06/04/16 19:58	1
Fluoride	ND		1.00	0.0100	mg/L			06/04/16 19:58	1
Sulfate	ND		5.00	0.0300	mg/L			06/04/16 19:58	1

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

Lab Sample ID: LCS 490-345276/4
Matrix: Water
Analysis Batch: 345276

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	9.751		mg/L		98	80 - 120
Fluoride	1.00	0.9745	J	mg/L		97	80 - 120
Sulfate	10.0	12.21	*	mg/L		122	80 - 120

Lab Sample ID: LCSD 490-345276/5
Matrix: Water
Analysis Batch: 345276

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	9.679		mg/L		97	80 - 120	1	20
Fluoride	1.00	0.9553	J	mg/L		96	80 - 120	2	20
Sulfate	10.0	12.32	*	mg/L		123	80 - 120	1	20

Lab Sample ID: 490-104392-2 MS
Matrix: Water
Analysis Batch: 345276

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	157	E B	2.00	127.7	E 4	mg/L		-1481	80 - 120
Fluoride	0.200	J	0.200	0.3696	J	mg/L		85	80 - 120
Sulfate	94.4	* E	2.00	76.88	E 4	mg/L		-877	80 - 120

Lab Sample ID: 490-104392-2 MSD
Matrix: Water
Analysis Batch: 345276

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	157	E B	2.00	128.5	E 4	mg/L		-1440	80 - 120	1	20
Fluoride	0.200	J	0.200	0.3838	J	mg/L		92	80 - 120	4	20
Sulfate	94.4	* E	2.00	77.08	E 4	mg/L		-867	80 - 120	0	20

Lab Sample ID: MB 490-345427/3
Matrix: Water
Analysis Batch: 345427

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			06/06/16 07:19	1
Fluoride	ND		1.00	0.0100	mg/L			06/06/16 07:19	1
Sulfate	0.08987	J	5.00	0.0300	mg/L			06/06/16 07:19	1

Lab Sample ID: LCS 490-345427/4
Matrix: Water
Analysis Batch: 345427

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	9.596		mg/L		96	80 - 120
Fluoride	1.00	0.9439	J	mg/L		94	80 - 120

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

Lab Sample ID: LCSD 490-345427/5
Matrix: Water
Analysis Batch: 345427

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	9.892		mg/L		99	80 - 120	3	20
Fluoride			1.00	0.9454	J	mg/L		95	80 - 120	0	20

Lab Sample ID: 490-104392-2 MS
Matrix: Water
Analysis Batch: 345427

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	159	E	2.00	129.4	E 4	mg/L		-1474	80 - 120
Fluoride	0.148	J	0.200	0.3564	J	mg/L		104	80 - 120

Lab Sample ID: 490-104392-2 MSD
Matrix: Water
Analysis Batch: 345427

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	159	E	2.00	129.5	E 4	mg/L		-1470	80 - 120	0	20
Fluoride	0.148	J	0.200	0.3186	J	mg/L		86	80 - 120	11	20

Lab Sample ID: MB 490-346084/3
Matrix: Water
Analysis Batch: 346084

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2618	J	3.00	0.200	mg/L			06/07/16 22:33	1
Fluoride	ND		1.00	0.0100	mg/L			06/07/16 22:33	1
Sulfate	ND		5.00	0.0300	mg/L			06/07/16 22:33	1

Lab Sample ID: LCS 490-346084/4
Matrix: Water
Analysis Batch: 346084

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	9.964		mg/L		100	80 - 120
Fluoride			1.00	1.012		mg/L		101	80 - 120
Sulfate			10.0	10.28		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-346084/5
Matrix: Water
Analysis Batch: 346084

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	10.05		mg/L		100	80 - 120	1	20
Fluoride			1.00	1.009		mg/L		101	80 - 120	0	20
Sulfate			10.0	10.31		mg/L		103	80 - 120	0	20

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

Lab Sample ID: MB 490-346159/3
Matrix: Water
Analysis Batch: 346159

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2139	J	3.00	0.200	mg/L			06/08/16 05:40	1
Fluoride	ND		1.00	0.0100	mg/L			06/08/16 05:40	1
Sulfate	ND		5.00	0.0300	mg/L			06/08/16 05:40	1

Lab Sample ID: LCS 490-346159/4
Matrix: Water
Analysis Batch: 346159

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	10.18		mg/L		102	80 - 120
Fluoride	1.00	0.9773	J	mg/L		98	80 - 120
Sulfate	10.0	10.33		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-346159/5
Matrix: Water
Analysis Batch: 346159

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	10.27		mg/L		103	80 - 120	1	20
Fluoride	1.00	0.9838	J	mg/L		98	80 - 120	1	20
Sulfate	10.0	10.27		mg/L		103	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-177730/1-A
Matrix: Water
Analysis Batch: 177943

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 177730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/31/16 07:18	06/01/16 15:15	1

Lab Sample ID: LCS 180-177730/2-A
Matrix: Water
Analysis Batch: 177943

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 177730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9827		mg/L		98	80 - 120

Lab Sample ID: LCSD 180-177730/3-A
Matrix: Water
Analysis Batch: 177943

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 177730

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9817		mg/L		98	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-177727/1-A
Matrix: Water
Analysis Batch: 178193

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 177727

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		05/31/16 07:17	06/02/16 20:16	1
Arsenic	ND		0.00500	0.000291	mg/L		05/31/16 07:17	06/02/16 20:16	1
Barium	ND		0.200	0.0000980	mg/L		05/31/16 07:17	06/02/16 20:16	1
Beryllium	ND		0.00200	0.0000367	mg/L		05/31/16 07:17	06/02/16 20:16	1
Boron	ND		1.00	0.000277	mg/L		05/31/16 07:17	06/02/16 20:16	1
Cadmium	ND		0.00100	0.000114	mg/L		05/31/16 07:17	06/02/16 20:16	1
Calcium	0.002967	J	1.00	0.00284	mg/L		05/31/16 07:17	06/02/16 20:16	1
Chromium	ND		0.00300	0.000543	mg/L		05/31/16 07:17	06/02/16 20:16	1
Cobalt	ND		0.00500	0.0000263	mg/L		05/31/16 07:17	06/02/16 20:16	1
Lead	ND		0.00500	0.0000192	mg/L		05/31/16 07:17	06/02/16 20:16	1
Molybdenum	ND		0.0100	0.000223	mg/L		05/31/16 07:17	06/02/16 20:16	1
Selenium	ND		0.0100	0.000422	mg/L		05/31/16 07:17	06/02/16 20:16	1
Thallium	ND		0.00100	0.0000152	mg/L		05/31/16 07:17	06/02/16 20:16	1

Lab Sample ID: LCS 180-177727/2-A
Matrix: Water
Analysis Batch: 178193

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 177727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5372		mg/L		107	80 - 120
Arsenic	0.0400	0.04037		mg/L		101	80 - 120
Barium	2.00	2.032		mg/L		102	80 - 120
Beryllium	0.0500	0.04567		mg/L		91	80 - 120
Boron	1.00	0.8541	J	mg/L		85	80 - 120
Cadmium	0.0500	0.05392		mg/L		108	80 - 120
Calcium	50.0	50.27		mg/L		101	80 - 120
Chromium	0.200	0.1867		mg/L		93	80 - 120
Cobalt	0.500	0.4711		mg/L		94	80 - 120
Lead	0.0200	0.02099		mg/L		105	80 - 120
Molybdenum	1.00	1.157		mg/L		116	80 - 120
Selenium	0.0100	0.009833	J	mg/L		98	80 - 120
Thallium	0.0500	0.05145		mg/L		103	80 - 120

Lab Sample ID: LCSD 180-177727/3-A
Matrix: Water
Analysis Batch: 178193

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 177727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5280		mg/L		106	80 - 120	2	20
Arsenic	0.0400	0.04131		mg/L		103	80 - 120	2	20
Barium	2.00	1.996		mg/L		100	80 - 120	2	20
Beryllium	0.0500	0.04693		mg/L		94	80 - 120	3	20
Boron	1.00	0.8677	J	mg/L		87	80 - 120	2	20
Cadmium	0.0500	0.05311		mg/L		106	80 - 120	2	20
Calcium	50.0	49.59		mg/L		99	80 - 120	1	20
Chromium	0.200	0.1900		mg/L		95	80 - 120	2	20
Cobalt	0.500	0.4804		mg/L		96	80 - 120	2	20
Lead	0.0200	0.02097		mg/L		105	80 - 120	0	20

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

Lab Sample ID: LCSD 180-177727/3-A
Matrix: Water
Analysis Batch: 178193

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 177727

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum			1.00	1.135		mg/L		114	80 - 120	2	20
Selenium			0.0100	0.009889	J	mg/L		99	80 - 120	1	20
Thallium			0.0500	0.05120		mg/L		102	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-344353/1-A
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 16:30	06/01/16 01:58	1

Lab Sample ID: LCS 490-344353/2-A
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344353

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9326		ug/L		93	80 - 120		

Lab Sample ID: LCSD 490-344353/3-A
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344353

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.9177		ug/L		92	80 - 120	2	20

Lab Sample ID: 490-104388-G-5-E MS
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 344353

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND	F1 F2	1.00	0.3021	F1	ug/L		30	75 - 125		

Lab Sample ID: 490-104388-G-5-F MSD
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 344353

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	0.1641	J F1 F2	ug/L		16	75 - 125	59	20

Lab Sample ID: MB 490-344391/1-A
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344391

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/31/16 19:35	06/01/16 02:51	1

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

Lab Sample ID: LCS 490-344391/2-A
Matrix: Water
Analysis Batch: 344415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9704		ug/L		97	80 - 120

Lab Sample ID: 490-104392-8 MS
Matrix: Water
Analysis Batch: 344415

Client Sample ID: FIELD BLANK
Prep Type: Total/NA
Prep Batch: 344391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.9442		ug/L		94	75 - 125

Lab Sample ID: 490-104392-8 MSD
Matrix: Water
Analysis Batch: 344415

Client Sample ID: FIELD BLANK
Prep Type: Total/NA
Prep Batch: 344391

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9389		ug/L		94	75 - 125	1	20

Method: 9040C - pH

Lab Sample ID: LCS 490-345852/1
Matrix: Water
Analysis Batch: 345852

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: 490-104374-K-3 DU
Matrix: Water
Analysis Batch: 345852

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		6.300		SU		0.2	20
Temperature	22.8		22.80		Degrees C		0	20

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

Lab Sample ID: MB 490-343242/1
Matrix: Water
Analysis Batch: 343242

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			05/27/16 15:30	1

Lab Sample ID: LCS 490-343242/2
Matrix: Water
Analysis Batch: 343242

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	97.00		mg/L		97	90 - 110

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

Lab Sample ID: LCSD 490-343242/3
Matrix: Water
Analysis Batch: 343242

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	96.00		mg/L		96	90 - 110	1	20

Lab Sample ID: 490-104376-F-3 DU
Matrix: Water
Analysis Batch: 343242

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	257			256.0		mg/L				0.4	20

Lab Sample ID: 490-104392-4 DU
Matrix: Water
Analysis Batch: 343242

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	4250			4204		mg/L				1	20

Lab Sample ID: MB 490-343550/1
Matrix: Water
Analysis Batch: 343550

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			05/27/16 16:30	1

Lab Sample ID: LCS 490-343550/2
Matrix: Water
Analysis Batch: 343550

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	104.0		mg/L		104	90 - 110		

Lab Sample ID: 490-104350-J-9 DU
Matrix: Water
Analysis Batch: 343550

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	665			667.0		mg/L				0.3	20

Lab Sample ID: 490-104392-8 DU
Matrix: Water
Analysis Batch: 343550

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	9.00	J		ND		mg/L				NC	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-254507/1-A
Matrix: Water
Analysis Batch: 257881

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254507

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1040	U	0.0816	0.0822	1.00	0.121	pCi/L	06/02/16 15:01	06/24/16 05:16	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.9*		*40 - 110*	*06/02/16 15:01*	*06/24/16 05:16*	*1*

Lab Sample ID: LCS 160-254507/2-A
Matrix: Water
Analysis Batch: 257881

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 254507

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.83		1.38	1.00	0.102	pCi/L	124	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.2*		*40 - 110*

Lab Sample ID: 490-104622-D-1-A MSD
Matrix: Water
Analysis Batch: 257879

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 254507

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	2.70		11.2	17.02		1.68	1.00	0.0955	pCi/L	128	75 - 138	0.20	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*95.4*		*40 - 110*

Lab Sample ID: 490-104622-E-1-B MS
Matrix: Water
Analysis Batch: 257879

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 254507

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	2.70		11.2	16.37		1.61	1.00	0.0933	pCi/L	122	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*97.7*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-254517/1-A
Matrix: Water
Analysis Batch: 257291

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254517

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1390	U	0.261	0.261	1.00	0.443	pCi/L	06/02/16 15:29	06/21/16 13:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.9*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:26*	*1*
Y Carrier	*89.0*		*40 - 110*	*06/02/16 15:29*	*06/21/16 13:26*	*1*

Lab Sample ID: LCS 160-254517/2-A
Matrix: Water
Analysis Batch: 257291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 254517

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.0	17.79		1.85	1.00	0.378	pCi/L	119	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.2*		*40 - 110*
Y Carrier	*90.8*		*40 - 110*

Lab Sample ID: 490-104622-D-1-B MSD
Matrix: Water
Analysis Batch: 257291

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 254517

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	0.712		15.0	17.56		1.82	1.00	0.348	pCi/L	112	45 - 150	0.42	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*95.4*		*40 - 110*
Y Carrier	*93.1*		*40 - 110*

Lab Sample ID: 490-104622-E-1-D MS
Matrix: Water
Analysis Batch: 257291

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 254517

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.712		15.0	16.09		1.68	1.00	0.303	pCi/L	103	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*97.7*		*40 - 110*
Y Carrier	*95.0*		*40 - 110*

HPLC/IC

Analysis Batch: 344985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104376-E-2 MS	Matrix Spike	Total/NA	Water	9056A	
490-104376-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	
490-104392-1	MW-1	Total/NA	Water	9056A	
490-104392-2	MW-2	Total/NA	Water	9056A	
490-104392-3	MW-3A	Total/NA	Water	9056A	
490-104392-4	MW-4	Total/NA	Water	9056A	
490-104392-5	MW-5	Total/NA	Water	9056A	
490-104392-6	MW-6	Total/NA	Water	9056A	
490-104392-7	DUPE	Total/NA	Water	9056A	
490-104392-8	FIELD BLANK	Total/NA	Water	9056A	
LCS 490-344985/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-344985/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-344985/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 345276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-2 MS	MW-2	Total/NA	Water	9056A	
490-104392-2 MSD	MW-2	Total/NA	Water	9056A	
LCS 490-345276/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-345276/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-345276/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 345427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-2 MS	MW-2	Total/NA	Water	9056A	
490-104392-2 MSD	MW-2	Total/NA	Water	9056A	
490-104392-3	MW-3A	Total/NA	Water	9056A	
490-104392-5	MW-5	Total/NA	Water	9056A	
LCS 490-345427/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-345427/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-345427/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 346084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-2	MW-2	Total/NA	Water	9056A	
490-104392-5	MW-5	Total/NA	Water	9056A	
490-104392-8	FIELD BLANK	Total/NA	Water	9056A	
LCS 490-346084/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-346084/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-346084/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 346159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total/NA	Water	9056A	
490-104392-3	MW-3A	Total/NA	Water	9056A	
490-104392-4	MW-4	Total/NA	Water	9056A	
490-104392-6	MW-6	Total/NA	Water	9056A	
490-104392-7	DUPE	Total/NA	Water	9056A	
LCS 490-346159/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-346159/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-346159/3	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 177727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total Recoverable	Water	3005A	
490-104392-2	MW-2	Total Recoverable	Water	3005A	
490-104392-3	MW-3A	Total Recoverable	Water	3005A	
490-104392-4	MW-4	Total Recoverable	Water	3005A	
490-104392-5	MW-5	Total Recoverable	Water	3005A	
490-104392-6	MW-6	Total Recoverable	Water	3005A	
490-104392-7	DUPE	Total Recoverable	Water	3005A	
490-104392-8	FIELD BLANK	Total Recoverable	Water	3005A	
LCS 180-177727/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-177727/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 180-177727/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 177730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total Recoverable	Water	3005A	
490-104392-2	MW-2	Total Recoverable	Water	3005A	
490-104392-3	MW-3A	Total Recoverable	Water	3005A	
490-104392-4	MW-4	Total Recoverable	Water	3005A	
490-104392-5	MW-5	Total Recoverable	Water	3005A	
490-104392-6	MW-6	Total Recoverable	Water	3005A	
490-104392-7	DUPE	Total Recoverable	Water	3005A	
490-104392-8	FIELD BLANK	Total Recoverable	Water	3005A	
LCS 180-177730/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-177730/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 180-177730/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 177943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total Recoverable	Water	6010C	177730
490-104392-2	MW-2	Total Recoverable	Water	6010C	177730
490-104392-3	MW-3A	Total Recoverable	Water	6010C	177730
490-104392-4	MW-4	Total Recoverable	Water	6010C	177730
490-104392-5	MW-5	Total Recoverable	Water	6010C	177730
490-104392-6	MW-6	Total Recoverable	Water	6010C	177730
490-104392-7	DUPE	Total Recoverable	Water	6010C	177730
490-104392-8	FIELD BLANK	Total Recoverable	Water	6010C	177730
LCS 180-177730/2-A	Lab Control Sample	Total Recoverable	Water	6010C	177730
LCSD 180-177730/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	177730
MB 180-177730/1-A	Method Blank	Total Recoverable	Water	6010C	177730

Analysis Batch: 178193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total Recoverable	Water	6020A	177727
490-104392-2	MW-2	Total Recoverable	Water	6020A	177727
490-104392-3	MW-3A	Total Recoverable	Water	6020A	177727
490-104392-4	MW-4	Total Recoverable	Water	6020A	177727
490-104392-5	MW-5	Total Recoverable	Water	6020A	177727
490-104392-6	MW-6	Total Recoverable	Water	6020A	177727
490-104392-7	DUPE	Total Recoverable	Water	6020A	177727
490-104392-8	FIELD BLANK	Total Recoverable	Water	6020A	177727
LCS 180-177727/2-A	Lab Control Sample	Total Recoverable	Water	6020A	177727

Metals (Continued)

Analysis Batch: 178193 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 180-177727/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	177727
MB 180-177727/1-A	Method Blank	Total Recoverable	Water	6020A	177727

Prep Batch: 344353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104388-G-5-E MS	Matrix Spike	Total/NA	Water	7470A	
490-104388-G-5-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
490-104392-1	MW-1	Total/NA	Water	7470A	
490-104392-2	MW-2	Total/NA	Water	7470A	
490-104392-3	MW-3A	Total/NA	Water	7470A	
490-104392-4	MW-4	Total/NA	Water	7470A	
490-104392-5	MW-5	Total/NA	Water	7470A	
490-104392-6	MW-6	Total/NA	Water	7470A	
490-104392-7	DUPE	Total/NA	Water	7470A	
LCS 490-344353/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-344353/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 490-344353/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 344391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-8	FIELD BLANK	Total/NA	Water	7470A	
490-104392-8 MS	FIELD BLANK	Total/NA	Water	7470A	
490-104392-8 MSD	FIELD BLANK	Total/NA	Water	7470A	
LCS 490-344391/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 490-344391/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 344415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104388-G-5-E MS	Matrix Spike	Total/NA	Water	7470A	344353
490-104388-G-5-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	344353
490-104392-1	MW-1	Total/NA	Water	7470A	344353
490-104392-2	MW-2	Total/NA	Water	7470A	344353
490-104392-3	MW-3A	Total/NA	Water	7470A	344353
490-104392-4	MW-4	Total/NA	Water	7470A	344353
490-104392-5	MW-5	Total/NA	Water	7470A	344353
490-104392-6	MW-6	Total/NA	Water	7470A	344353
490-104392-7	DUPE	Total/NA	Water	7470A	344353
490-104392-8	FIELD BLANK	Total/NA	Water	7470A	344391
490-104392-8 MS	FIELD BLANK	Total/NA	Water	7470A	344391
490-104392-8 MSD	FIELD BLANK	Total/NA	Water	7470A	344391
LCS 490-344353/2-A	Lab Control Sample	Total/NA	Water	7470A	344353
LCS 490-344391/2-A	Lab Control Sample	Total/NA	Water	7470A	344391
LCSD 490-344353/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	344353
MB 490-344353/1-A	Method Blank	Total/NA	Water	7470A	344353
MB 490-344391/1-A	Method Blank	Total/NA	Water	7470A	344391

General Chemistry

Analysis Batch: 343242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104376-F-3 DU	Duplicate	Total/NA	Water	SM 2540C	
490-104392-1	MW-1	Total/NA	Water	SM 2540C	
490-104392-2	MW-2	Total/NA	Water	SM 2540C	
490-104392-3	MW-3A	Total/NA	Water	SM 2540C	
490-104392-4	MW-4	Total/NA	Water	SM 2540C	
490-104392-4 DU	MW-4	Total/NA	Water	SM 2540C	
LCS 490-343242/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-343242/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 490-343242/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 343550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104350-J-9 DU	Duplicate	Total/NA	Water	SM 2540C	
490-104392-5	MW-5	Total/NA	Water	SM 2540C	
490-104392-6	MW-6	Total/NA	Water	SM 2540C	
490-104392-7	DUPE	Total/NA	Water	SM 2540C	
490-104392-8	FIELD BLANK	Total/NA	Water	SM 2540C	
490-104392-8 DU	FIELD BLANK	Total/NA	Water	SM 2540C	
LCS 490-343550/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 490-343550/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 345852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104374-K-3 DU	Duplicate	Total/NA	Water	9040C	
490-104392-1	MW-1	Total/NA	Water	9040C	
490-104392-2	MW-2	Total/NA	Water	9040C	
490-104392-3	MW-3A	Total/NA	Water	9040C	
490-104392-4	MW-4	Total/NA	Water	9040C	
490-104392-5	MW-5	Total/NA	Water	9040C	
490-104392-6	MW-6	Total/NA	Water	9040C	
490-104392-7	DUPE	Total/NA	Water	9040C	
490-104392-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-345852/1	Lab Control Sample	Total/NA	Water	9040C	

Rad

Prep Batch: 254507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total/NA	Water	PrecSep-21	
490-104392-2	MW-2	Total/NA	Water	PrecSep-21	
490-104392-3	MW-3A	Total/NA	Water	PrecSep-21	
490-104392-4	MW-4	Total/NA	Water	PrecSep-21	
490-104392-5	MW-5	Total/NA	Water	PrecSep-21	
490-104392-6	MW-6	Total/NA	Water	PrecSep-21	
490-104392-7	DUPE	Total/NA	Water	PrecSep-21	
490-104392-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
490-104622-D-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	
490-104622-E-1-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
LCS 160-254507/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-254507/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 254517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104392-1	MW-1	Total/NA	Water	PrecSep_0	
490-104392-2	MW-2	Total/NA	Water	PrecSep_0	
490-104392-3	MW-3A	Total/NA	Water	PrecSep_0	
490-104392-4	MW-4	Total/NA	Water	PrecSep_0	
490-104392-5	MW-5	Total/NA	Water	PrecSep_0	
490-104392-6	MW-6	Total/NA	Water	PrecSep_0	
490-104392-7	DUPE	Total/NA	Water	PrecSep_0	
490-104392-8	FIELD BLANK	Total/NA	Water	PrecSep_0	
490-104622-D-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	
490-104622-E-1-D MS	Matrix Spike	Total/NA	Water	PrecSep_0	
LCS 160-254517/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-254517/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-1

Lab Sample ID: 490-104392-1

Date Collected: 05/23/16 09:20

Matrix: Water

Date Received: 05/25/16 09:20

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		344985	06/03/16 04:31	KS	TAL NSH
Total/NA	Analysis	9056A		5	10 mL		346159	06/08/16 14:46	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 15:30	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 20:43	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:30	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	343242	05/27/16 15:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.73 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.73 mL		257881	06/24/16 05:16	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.73 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.73 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: MW-2

Lab Sample ID: 490-104392-2

Date Collected: 05/23/16 14:30

Matrix: Water

Date Received: 05/25/16 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	10 mL		344985	06/03/16 04:48	KS	TAL NSH
Total/NA	Analysis	9056A		20	10 mL		346084	06/08/16 00:16	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 15:40	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 20:48	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:32	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	343242	05/27/16 15:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.33 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.33 mL		257881	06/24/16 05:16	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.33 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.33 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 05/23/16 13:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-3

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		20	10 mL		344985	06/03/16 05:05	KS	TAL NSH
Total/NA	Analysis	9056A		200	10 mL		345427	06/06/16 09:36	LDC	TAL NSH
Total/NA	Analysis	9056A		100	10 mL		346159	06/08/16 15:03	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 15:55	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 21:09	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:35	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	343242	05/27/16 15:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.95 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.95 mL		257881	06/24/16 05:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.95 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.95 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 05/23/16 12:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-4

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		20	10 mL		344985	06/03/16 05:56	KS	TAL NSH
Total/NA	Analysis	9056A		200	10 mL		346159	06/08/16 15:20	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 16:01	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 21:14	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:37	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	343242	05/27/16 15:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.88 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.88 mL		257881	06/24/16 05:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.88 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.88 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 05/23/16 11:50
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-5
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		20	10 mL		344985	06/03/16 06:14	KS	TAL NSH
Total/NA	Analysis	9056A		100	10 mL		345427	06/06/16 10:44	LDC	TAL NSH
Total/NA	Analysis	9056A		50	10 mL		346084	06/08/16 01:58	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 16:06	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 21:19	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:39	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	343550	05/27/16 16:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.93 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.93 mL		257881	06/24/16 05:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.93 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.93 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 05/23/16 10:30
Date Received: 05/25/16 09:20

Lab Sample ID: 490-104392-6
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		20	10 mL		344985	06/03/16 06:31	KS	TAL NSH
Total/NA	Analysis	9056A		200	10 mL		346159	06/08/16 15:37	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 16:12	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 21:24	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:46	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	343550	05/27/16 16:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.16 mL		257881	06/24/16 05:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.16 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-104392-7

Date Collected: 05/23/16 10:55

Matrix: Water

Date Received: 05/25/16 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	10 mL		344985	06/03/16 06:48	KS	TAL NSH
Total/NA	Analysis	9056A		200	10 mL		346159	06/08/16 15:55	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 16:17	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 21:29	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	344353	05/31/16 16:30	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	344415	06/01/16 02:49	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	343550	05/27/16 16:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.28 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.28 mL		257881	06/24/16 05:17	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.28 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.28 mL		257291	06/21/16 13:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	RTM	TAL SL

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-104392-8

Date Collected: 05/23/16 14:50

Matrix: Water

Date Received: 05/25/16 09:20

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		344985	06/03/16 07:05	KS	TAL NSH
Total/NA	Analysis	9056A		1	10 mL		346084	06/08/16 03:57	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	177730	05/31/16 07:18	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	177943	06/01/16 16:22	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	177727	05/31/16 07:17	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	178193	06/02/16 21:34	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	344391	05/31/16 19:35	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	344415	06/01/16 02:56	BLG	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	345852	06/07/16 11:23	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	343550	05/27/16 16:30	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.78 mL	1.0 g	254507	06/02/16 15:01	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.78 mL		257879	06/24/16 05:25	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.78 mL	1.0 g	254517	06/02/16 15:29	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.78 mL		257291	06/21/16 13:28	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			258240	06/28/16 10:30	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: Green Landfill CCR

TestAmerica Job ID: 490-104392-1

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

Certification Summary

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

TestAmerica Job ID: 490-104392-1

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-16 *

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-16
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-16
Florida	NELAP	4	E871008	06-30-16
Illinois	NELAP	5	200005	06-30-16
Kansas	NELAP	7	E-10350	07-31-16
Louisiana	NELAP	6	04041	06-30-16
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-16
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-16 *
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P-Soil-01	05-23-16 *
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-16
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16 *
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16 *
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16 *
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-16 *
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

Certification Summary

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

TestAmerica Job ID: 490-104392-1

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16 *
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-104392 Chain of Custody

Cooler Received/Opened On 5-25-16 @ 920

Time Samples Removed From Cooler 1700 Time Samples Placed In Storage 1745 (2 Hour Window)

1. Tracking # 0589 (last 4 digits, FedEx) Courier: FED EX

IR Gun ID 97310166 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

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: 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) M

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...#

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
104392

COOLER RECEIPT FORM

Cooler Received/Opened On 5-25-16 @ 920

Time Samples Removed From Cooler 1700 Time Samples Placed In Storage 1745 (2 Hour Window)

1. Tracking # 0026 (last 4 digits, FedEx) Courier: FED EX

IR Gun ID 97310166 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

2. Temperature of rep. sample or temp blank when opened: 1.6 *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: (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
104392

COOLER RECEIPT FORM

Cooler Received/Opened On 5-25-16 @ 920

Time Samples Removed From Cooler 1700 Time Samples Placed In Storage 1745 (2 Hour Window)

1. Tracking # 0707 (last 4 digits, FedEx) Courier: FED EX

IR Gun ID 17960358 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

2. Temperature of rep. sample or temp blank when opened: 4.0 *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 Not stuck to cooler

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) 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

6/29/2016

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
104392

COOLER RECEIPT FORM

Cooler Received/Opened On 5-25-16 @ 920

Time Samples Removed From Cooler 1700 Time Samples Placed In Storage 1715 (2 Hour Window)

1. Tracking # 0060 (last 4 digits, FedEx) Courier: FED EX

IR Gun ID 12050142 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

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 middle

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) BS

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) 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 (intial) 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 (intial) SH

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

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

6/29/2016

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: 5/24/2016**
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: GL CCR Groundwater-Round 2/1st Semi-Annual	☐ 1 week		
Site: Green Landfill (GL)	☐ 2 days		
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:
MW-1	5/23/16	920	G	Water	8	N	N	x	x	x	x	x	x	
MW-2	5/23/16	1430	G	Water	8	N	N	x	x	x	x	x	x	
MW-3A	5/23/16	1350	G	Water	8	N	N	x	x	x	x	x	x	sample bottles labeled MW-3 are same as MW-3A
MW-4	5/23/16	1250	G	Water	8	N	N	x	x	x	x	x	x	
MW-5	5/23/16	1150	G	Water	8	N	N	x	x	x	x	x	x	
MW-6	5/23/16	1030	G	Water	8	N	N	x	x	x	x	x	x	
DUPE	5/23/16	1055	G	Water	8	N	N	x	x	x	x	x	x	
FIELD BLANK	5/23/16	1450	G	Water	8	N	N	x	x	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None								4	4	3	7	3	7	

COC No: 490-53216-17234.1
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Loc: 490
104392

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

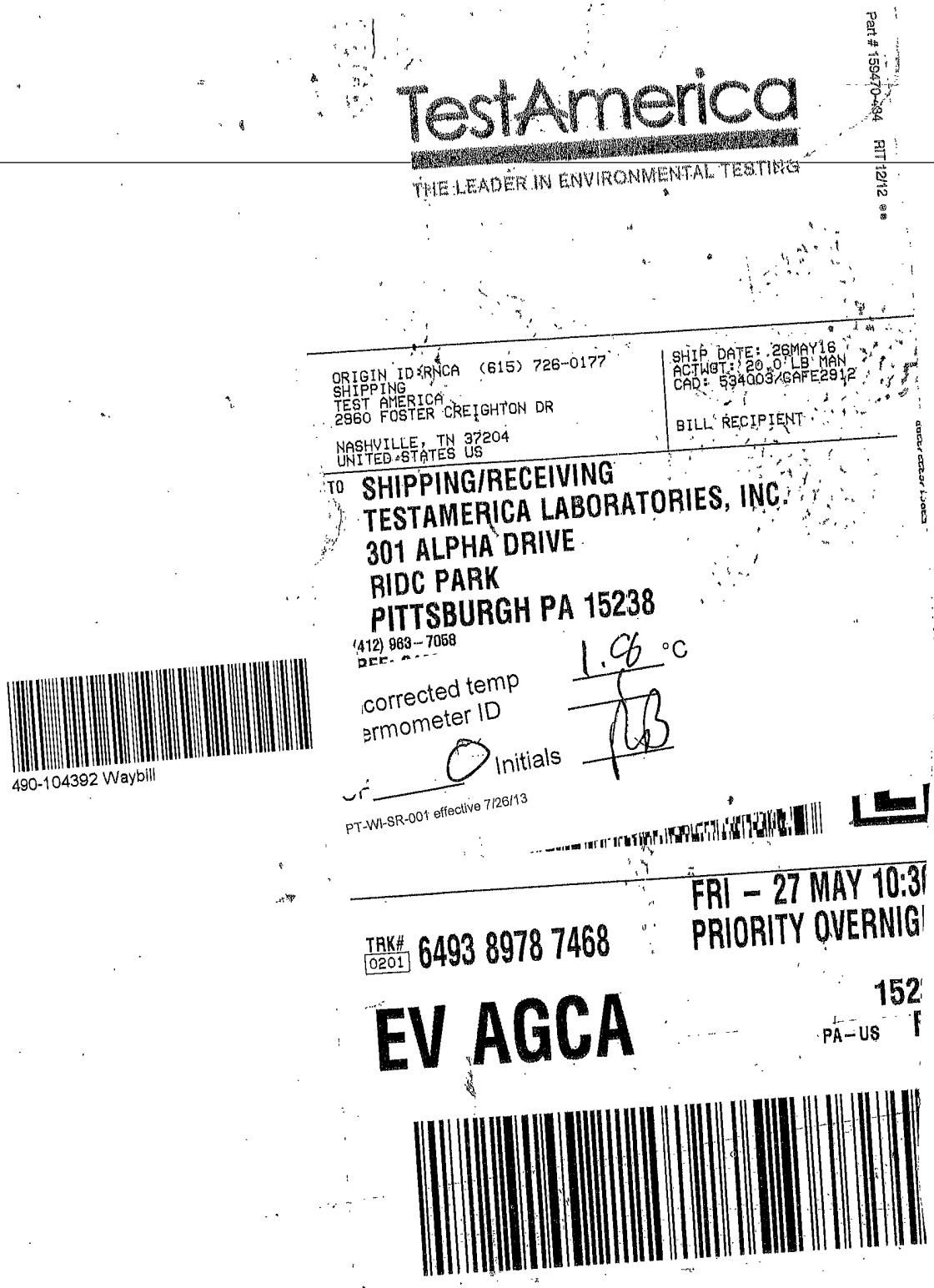
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ 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 Special Waste Regulations.) See attached constituent lists for analysis. Please compile two separate reports (1 report for each attached constituent list) for the CCR and Semi-Annual data results.

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: 1500 5/24/2016	Received by:	Company: TAN	Date/Time: 5/25/16 0920
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp 1.1/1.6/4.0/2.4



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Part # 159470-494 REV 12/12

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 26MAY16
ACTWGT: 20.0 LB MAN
CAD: 5340O3/GAFE2912

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058

1.6 °C
corrected temp
ermometer ID
Initials

PT-WI-SR-001 effective 7/26/13

490-104392 Waybill

FRI - 27 MAY 10:3
PRIORITY OVERNIG

TRK# 0201 6493 8978 7468

152
PA-US

EV AGCA

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: 490-44761.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-104392-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/27/2016			
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	904.0/PreoSep_0 Standard Target List	903.0/PreoSep_21 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-1 (490-104392-1)	5/23/16	09:20 Central		Water			X	X	X	2	
MW-2 (490-104392-2)	5/23/16	14:30 Central		Water			X	X	X	2	
MW-3A (490-104392-3)	5/23/16	13:50 Central		Water			X	X	X	2	
MW-4 (490-104392-4)	5/23/16	12:50 Central		Water			X	X	X	2	
MW-5 (490-104392-5)	5/23/16	11:50 Central		Water			X	X	X	2	
MW-6 (490-104392-6)	5/23/16	10:30 Central		Water			X	X	X	2	
DUPE (490-104392-7)	5/23/16	10:55 Central		Water			X	X	X	2	
BLANK (490-104392-8)	5/23/16	14:50 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)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/26/16 0750	Company TAN	Received by:	Date/Time: 052716 0820	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:

Page 50 of 53

6/29/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-104392-1

Login Number: 104392
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	1.1,1.6,4.0,2.4
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?	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: 490-104392-1

Login Number: 104392
List Number: 3
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 05/27/16 02:44 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	1.6, 1.3
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: Green Landfill CCR

TestAmerica Job ID: 490-104392-1

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-104392-1	MW-1	94.6
490-104392-2	MW-2	94.0
490-104392-3	MW-3A	96.3
490-104392-4	MW-4	92.0
490-104392-5	MW-5	94.6
490-104392-6	MW-6	97.2
490-104392-7	DUPE	96.0
490-104392-8	FIELD BLANK	97.2
490-104622-D-1-A MSD	Matrix Spike Duplicate	95.4
490-104622-E-1-B MS	Matrix Spike	97.7
LCS 160-254507/2-A	Lab Control Sample	97.2
MB 160-254507/1-A	Method Blank	80.9

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-104392-1	MW-1	94.6	90.1
490-104392-2	MW-2	94.0	86.0
490-104392-3	MW-3A	96.3	86.0
490-104392-4	MW-4	92.0	92.3
490-104392-5	MW-5	94.6	84.9
490-104392-6	MW-6	97.2	81.9
490-104392-7	DUPE	96.0	88.2
490-104392-8	FIELD BLANK	97.2	91.2
490-104622-D-1-B MSD	Matrix Spike Duplicate	95.4	93.1
490-104622-E-1-D MS	Matrix Spike	97.7	95.0
LCS 160-254517/2-A	Lab Control Sample	97.2	90.8
MB 160-254517/1-A	Method Blank	80.9	89.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-110210-1
TestAmerica Sample Delivery Group: Green Landfill (GL)
Client Project/Site: Green Landfill CCR Groundwater - Round 3

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

Attn: Greg Dick

Heather Baker

Authorized for release by:
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-110210-1	MW-1	Water	08/18/16 09:20	08/20/16 09:30
490-110210-2	MW-2	Water	08/18/16 14:25	08/20/16 09:30
490-110210-3	MW-3A	Water	08/18/16 13:55	08/20/16 09:30
490-110210-4	MW-4	Water	08/18/16 12:55	08/20/16 09:30
490-110210-5	MW-5	Water	08/18/16 11:35	08/20/16 09:30
490-110210-6	MW-6	Water	08/18/16 10:45	08/20/16 09:30
490-110210-7	DUPE	Water	08/18/16 11:45	08/20/16 09:30
490-110210-8	FIELD BLANK	Water	08/18/16 16:00	08/20/16 09:30

Job ID: 490-110210-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-110210-1

Comments
No additional comments.

Receipt
The samples were received on 8/20/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.4º C, 0.9º C, 1.4º C and 1.9º C.

HPLC/IC
Method 9056A: The method blank as well as the continuing calibration blanks for analytical batch 490-370091 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 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-370091 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 9056A: The following samples were diluted due to the nature of the sample matrix: MW-3A (490-110210-3), MW-4 (490-110210-4), MW-5 (490-110210-5), MW-6 (490-110210-6), DUPE (490-110210-7), (490-110210-C-3 MS) and (490-110210-C-3 MSD). 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 PrecSep_0: Radium-228 Prep Batch 160-267401: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1 (490-110210-1), MW-2 (490-110210-2), MW-3A (490-110210-3), MW-4 (490-110210-4), MW-5 (490-110210-5), MW-6 (490-110210-6), DUPE (490-110210-7) and FIELD BLANK (490-110210-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-267383: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1 (490-110210-1), MW-2 (490-110210-2), MW-3A (490-110210-3), MW-4 (490-110210-4), MW-5 (490-110210-5), MW-6 (490-110210-6), DUPE (490-110210-7) and FIELD BLANK (490-110210-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-1

Date Collected: 08/18/16 09:20
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.60**	**B**	3.00	0.200	mg/L			09/14/16 16:13	1
Fluoride	**0.581**	**J**	1.00	0.0100	mg/L			09/14/16 16:13	1
Sulfate	**22.9**		5.00	0.0300	mg/L			09/14/16 16:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0326**	**J**	0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 16:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000774**	**J B**	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 18:56	1
Arsenic	**0.000572**	**J**	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 18:56	1
Barium	**0.0827**	**J**	0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 18:56	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 18:56	1
Boron	**2.25**		1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 19:25	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 18:56	1
Calcium	**33.0**		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 18:56	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 18:56	1
Cobalt	**0.000188**	**J**	0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 18:56	1
Lead	**0.0000700**	**J**	0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 18:56	1
Molybdenum	**0.00147**	**J**	0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 18:56	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 18:56	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 18:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 18:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.36**		0.100	0.100	SU			08/23/16 15:56	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	**585**		10.0	7.00	mg/L			08/24/16 14:10	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	**0.343**		0.108	0.112	1.00	0.125	pCi/L	08/30/16 15:47	09/21/16 07:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.9*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:14*	*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	0.333	U	0.332	0.334	1.00	0.539	pCi/L	08/30/16 16:41	09/13/16 19:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.9*		*40 - 110*	*08/30/16 16:41*	*09/13/16 19:03*	*1*

Client Sample ID: MW-1
Date Collected: 08/18/16 09:20
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	82.2		40 - 110	08/30/16 16:41	09/13/16 19:03	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	0.676		0.349	0.352	5.00	0.539	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-2

Date Collected: 08/18/16 14:25
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**129**	**B**	60.0	4.00	mg/L			09/14/16 23:35	20
Fluoride	**0.297**	**J**	1.00	0.0100	mg/L			09/14/16 17:13	1
Sulfate	**85.5**	**J**	100	0.600	mg/L			09/14/16 23:35	20

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		08/23/16 14:27	08/31/16 16:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000241**	**J B**	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 18:58	1
Arsenic	**0.0110**		0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 18:58	1
Barium	**0.280**		0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 18:58	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 18:58	1
Boron	**0.0551**	**J**	1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 19:30	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 18:58	1
Calcium	**140**		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 18:58	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 18:58	1
Cobalt	**0.00272**	**J**	0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 18:58	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 18:58	1
Molybdenum	**0.00232**	**J**	0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 18:58	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 18:58	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 18:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 18:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.74**		0.100	0.100	SU			08/23/16 15:56	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	**830**		10.0	7.00	mg/L			08/24/16 14:10	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	**0.810**		0.131	0.150	1.00	0.0724	pCi/L	08/30/16 15:47	09/21/16 07:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.8*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:14*	*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	0.268	U	0.282	0.283	1.00	0.460	pCi/L	08/30/16 16:41	09/13/16 19:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.8*		*40 - 110*	*08/30/16 16:41*	*09/13/16 19:03*	*1*

Client Sample ID: MW-2
Date Collected: 08/18/16 14:25
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	79.6		40 - 110	08/30/16 16:41	09/13/16 19:03	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	1.08		0.311	0.320	5.00	0.460	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-3A

Date Collected: 08/18/16 13:55
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2150	B	600	40.0	mg/L			09/15/16 10:57	200
Fluoride	0.436	J	1.00	0.0100	mg/L			09/14/16 17:33	1
Sulfate	1190		500	3.00	mg/L			09/15/16 01:55	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.648		0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 16:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000366	J B	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 19:00	1
Arsenic	0.000598	J	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 19:00	1
Barium	0.0481	J	0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 19:00	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 19:00	1
Boron	0.279	J	1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 19:35	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 19:00	1
Calcium	362		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 19:00	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 19:00	1
Cobalt	0.00236	J	0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 19:00	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 19:00	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 19:00	1
Selenium	0.000501	J	0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 19:00	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 19:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.86		0.100	0.100	SU			08/23/16 15:56	1
Temperature	22.7		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	4170		100	70.0	mg/L			08/24/16 14:10	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	0.439		0.105	0.112	1.00	0.102	pCi/L	08/30/16 15:47	09/21/16 07:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:15*	*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	0.744		0.329	0.336	1.00	0.472	pCi/L	08/30/16 16:41	09/13/16 18:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:57*	*1*

Client Sample ID: MW-3A
Date Collected: 08/18/16 13:55
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	08/30/16 16:41	09/13/16 18:57	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	1.18		0.345	0.354	5.00	0.472	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-4

Date Collected: 08/18/16 12:55
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	952	B	600	40.0	mg/L			09/15/16 11:37	200
Fluoride	0.185	J	1.00	0.0100	mg/L			09/14/16 17:53	1
Sulfate	1420		250	1.50	mg/L			09/15/16 03:15	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.13		0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 16:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000197	J B	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 19:02	1
Arsenic	0.000498	J	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 19:02	1
Barium	0.0170	J	0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 19:02	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 19:02	1
Boron	1.58		1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 19:41	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 19:02	1
Calcium	464		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 19:02	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 19:02	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 19:02	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 19:02	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 19:02	1
Selenium	0.00109	J	0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 19:02	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 19:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.190	J	0.200	0.100	ug/L		08/22/16 10:39	08/23/16 19:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.03		0.100	0.100	SU			08/23/16 15:56	1
Temperature	22.7		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	3440		40.0	28.0	mg/L			08/24/16 14:10	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	0.134		0.0785	0.0794	1.00	0.113	pCi/L	08/30/16 15:47	09/21/16 07:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:15*	*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	0.278	U	0.327	0.328	1.00	0.538	pCi/L	08/30/16 16:41	09/13/16 19:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*40 - 110*	*08/30/16 16:41*	*09/13/16 19:01*	*1*

Client Sample ID: MW-4
Date Collected: 08/18/16 12:55
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	78.9		40 - 110	08/30/16 16:41	09/13/16 19:01	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	0.413	U	0.336	0.337	5.00	0.538	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-5

Date Collected: 08/18/16 11:35
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	688	B	150	10.0	mg/L			09/15/16 03:56	50
Fluoride	0.0308	J	1.00	0.0100	mg/L			09/14/16 18:14	1
Sulfate	1780		250	1.50	mg/L			09/15/16 03:56	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.305		0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 16:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000118	J B	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 19:04	1
Arsenic	0.000270	J	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 19:04	1
Barium	0.0158	J	0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 19:04	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 19:04	1
Boron	0.216	J	1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 19:46	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 19:04	1
Calcium	374		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 19:04	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 19:04	1
Cobalt	0.000152	J	0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 19:04	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 19:04	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 19:04	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 19:04	1
Thallium	0.0000440	J	0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 19:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 19:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.95		0.100	0.100	SU			08/23/16 15:56	1
Temperature	22.7		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	3470		40.0	28.0	mg/L			08/24/16 14:10	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	0.178		0.0796	0.0812	1.00	0.105	pCi/L	08/30/16 15:47	09/21/16 17:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*08/30/16 15:47*	*09/21/16 17:56*	*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	0.781		0.383	0.390	1.00	0.576	pCi/L	08/30/16 16:41	09/13/16 18:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:53*	*1*

Client Sample ID: MW-5
Date Collected: 08/18/16 11:35
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	08/30/16 16:41	09/13/16 18:53	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	0.959		0.391	0.398	5.00	0.576	pCi/L		09/22/16 21:10	1

Client Sample ID: MW-6

Date Collected: 08/18/16 10:45
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	136	J B	150	10.0	mg/L			09/15/16 04:36	50
Fluoride	0.646	J	1.00	0.0100	mg/L			09/14/16 18:34	1
Sulfate	2550		500	3.00	mg/L			09/15/16 12:17	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0555		0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 16:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000223	J B	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 19:11	1
Arsenic	0.000284	J	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 19:11	1
Barium	0.00807	J	0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 19:11	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 19:11	1
Boron	0.193	J	1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 20:01	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 19:11	1
Calcium	373		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 19:11	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 19:11	1
Cobalt	0.000169	J	0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 19:11	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 19:11	1
Molybdenum	0.00244	J	0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 19:11	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 19:11	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 19:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.80		0.100	0.100	SU			08/23/16 15:56	1
Temperature	22.7		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	4350		40.0	28.0	mg/L			08/24/16 14:10	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	0.104		0.0641	0.0648	1.00	0.0919	pCi/L	08/30/16 15:47	09/21/16 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:16*	*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	0.153	U	0.270	0.270	1.00	0.458	pCi/L	08/30/16 16:41	09/13/16 18:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:53*	*1*

Client Sample ID: MW-6
Date Collected: 08/18/16 10:45
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-6
Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*86.0*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:53*	*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	0.257	U	0.277	0.278	5.00	0.458	pCi/L		09/22/16 21:10	1

Client Sample ID: DUPE

Date Collected: 08/18/16 11:45
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**681**	**B**	150	10.0	mg/L			09/15/16 05:16	50
Fluoride	**0.0307**	**J**	1.00	0.0100	mg/L			09/14/16 18:54	1
Sulfate	**1760**		250	1.50	mg/L			09/15/16 05:16	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.299**		0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 16:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000270**	**J B**	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 19:13	1
Arsenic	**0.000534**	**J**	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 19:13	1
Barium	**0.0155**	**J**	0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 19:13	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 19:13	1
Boron	**0.238**	**J**	1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 20:06	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 19:13	1
Calcium	**369**		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 19:13	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 19:13	1
Cobalt	**0.000175**	**J**	0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 19:13	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 19:13	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 19:13	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 19:13	1
Thallium	**0.0000460**	**J**	0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 19:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.96**		0.100	0.100	SU			08/23/16 15:56	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	**3550**		40.0	28.0	mg/L			08/24/16 14:10	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	**0.209**		0.0780	0.0802	1.00	0.0947	pCi/L	08/30/16 15:47	09/21/16 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.0*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:16*	*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	**0.648**		0.326	0.332	1.00	0.488	pCi/L	08/30/16 16:41	09/13/16 18:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.0*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:54*	*1*

Client Sample ID: DUPE
Date Collected: 08/18/16 11:45
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-7
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.5		40 - 110	08/30/16 16:41	09/13/16 18:54	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	0.857		0.335	0.341	5.00	0.488	pCi/L		09/22/16 21:10	1

Client Sample ID: FIELD BLANK

Date Collected: 08/18/16 16:00
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.659**	**J B**	3.00	0.200	mg/L			09/14/16 19:14	1
Fluoride	ND		1.00	0.0100	mg/L			09/14/16 19:14	1
Sulfate	**0.369**	**J**	5.00	0.0300	mg/L			09/14/16 19:14	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		08/23/16 14:27	08/31/16 16:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000172**	**J B**	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 19:15	1
Arsenic	**0.000251**	**J**	0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 19:15	1
Barium	ND		0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 19:15	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 19:15	1
Boron	**0.0236**	**J**	1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 20:11	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 19:15	1
Calcium	**0.0764**	**J**	1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 19:15	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 19:15	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 19:15	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 19:15	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 19:15	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 19:15	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 19:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 19:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.92**		0.100	0.100	SU			08/23/16 15:56	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/23/16 15:56	1
Total Dissolved Solids	**9.00**	**J**	10.0	7.00	mg/L			08/24/16 14:10	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	**0.110**		0.0647	0.0654	1.00	0.0903	pCi/L	08/30/16 15:47	09/21/16 07:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.2*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:17*	*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	0.291	U	0.324	0.325	1.00	0.532	pCi/L	08/30/16 16:41	09/13/16 18:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.2*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:54*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 08/18/16 16:00
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-8

Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*87.5*		*40 - 110*	*08/30/16 16:41*	*09/13/16 18:54*	*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	0.402	U	0.330	0.332	5.00	0.532	pCi/L		09/22/16 21:10	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-370091/35
Matrix: Water
Analysis Batch: 370091

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4405	J	3.00	0.200	mg/L			09/15/16 00:55	1
Fluoride	ND		1.00	0.0100	mg/L			09/15/16 00:55	1
Sulfate	ND		5.00	0.0300	mg/L			09/15/16 00:55	1

Lab Sample ID: MB 490-370091/6
Matrix: Water
Analysis Batch: 370091

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4553	J	3.00	0.200	mg/L			09/14/16 15:13	1
Fluoride	ND		1.00	0.0100	mg/L			09/14/16 15:13	1
Sulfate	ND		5.00	0.0300	mg/L			09/14/16 15:13	1

Lab Sample ID: MB 490-370091/62
Matrix: Water
Analysis Batch: 370091

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2901	J	3.00	0.200	mg/L			09/15/16 09:57	1
Fluoride	ND		1.00	0.0100	mg/L			09/15/16 09:57	1
Sulfate	ND		5.00	0.0300	mg/L			09/15/16 09:57	1

Lab Sample ID: LCS 490-370091/36
Matrix: Water
Analysis Batch: 370091

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	10.36		mg/L		104	80 - 120
Fluoride	1.00	1.045		mg/L		104	80 - 120
Sulfate	10.0	9.952		mg/L		100	80 - 120

Lab Sample ID: LCS 490-370091/63
Matrix: Water
Analysis Batch: 370091

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	10.08		mg/L		101	80 - 120
Fluoride	1.00	1.102		mg/L		110	80 - 120
Sulfate	10.0	10.12		mg/L		101	80 - 120

Lab Sample ID: LCS 490-370091/7
Matrix: Water
Analysis Batch: 370091

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	10.16		mg/L		102	80 - 120
Fluoride	1.00	1.084		mg/L		108	80 - 120
Sulfate	10.0	9.821		mg/L		98	80 - 120

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

Lab Sample ID: LCSD 490-370091/37
Matrix: Water
Analysis Batch: 370091

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	10.36		mg/L		104	80 - 120	0	20
Fluoride	1.00	1.033		mg/L		103	80 - 120	1	20
Sulfate	10.0	10.03		mg/L		100	80 - 120	1	20

Lab Sample ID: LCSD 490-370091/64
Matrix: Water
Analysis Batch: 370091

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	10.12		mg/L		101	80 - 120	0	20
Fluoride	1.00	1.046		mg/L		105	80 - 120	5	20
Sulfate	10.0	10.05		mg/L		101	80 - 120	1	20

Lab Sample ID: LCSD 490-370091/8
Matrix: Water
Analysis Batch: 370091

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	9.890		mg/L		99	80 - 120	3	20
Fluoride	1.00	1.007		mg/L		101	80 - 120	7	20
Sulfate	10.0	9.685		mg/L		97	80 - 120	1	20

Lab Sample ID: 490-110210-3 MS
Matrix: Water
Analysis Batch: 370091

Client Sample ID: MW-3A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2390	E B	200	2142	E 4	mg/L		-123	80 - 120
Fluoride	2.10	J	20.0	24.32	J	mg/L		111	80 - 120
Sulfate	1190		200	1139	4	mg/L		-25	80 - 120

Lab Sample ID: 490-110210-3 MSD
Matrix: Water
Analysis Batch: 370091

Client Sample ID: MW-3A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2390	E B	200	2107	E 4	mg/L		-141	80 - 120	2	20
Fluoride	2.10	J	20.0	22.96	J	mg/L		104	80 - 120	6	20
Sulfate	1190		200	1115	4	mg/L		-37	80 - 120	2	20

Lab Sample ID: 490-110210-C-1 MS
Matrix: Water
Analysis Batch: 370091

Client Sample ID: 490-110210-C-1 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.21	F1 B	2.00	7.112	F1	mg/L		45	80 - 120
Fluoride	0.560	J F1	0.200	0.6436	J F1	mg/L		42	80 - 120
Sulfate	22.8		2.00	20.02	4	mg/L		-137	80 - 120

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

Lab Sample ID: 490-110210-C-1 MSD
Matrix: Water
Analysis Batch: 370091

Client Sample ID: 490-110210-C-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	6.21	F1 B	2.00	7.014	F1	mg/L		40	80 - 120	1	20
Fluoride	0.560	J F1	0.200	0.6520	J F1	mg/L		46	80 - 120	1	20
Sulfate	22.8		2.00	20.34	4	mg/L		-121	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-185792/1-A
Matrix: Water
Analysis Batch: 186654

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 185792

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		08/23/16 14:27	08/31/16 15:48	1

Lab Sample ID: LCS 180-185792/2-A
Matrix: Water
Analysis Batch: 186654

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 185792

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9900		mg/L		99	80 - 120

Lab Sample ID: LCSD 180-185792/3-A
Matrix: Water
Analysis Batch: 186654

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 185792

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9713		mg/L		97	80 - 120	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-185790/1-A
Matrix: Water
Analysis Batch: 186523

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 185790

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00007100	J	0.00200	0.0000213	mg/L		08/23/16 14:26	08/30/16 18:23	1
Arsenic	ND		0.00500	0.000118	mg/L		08/23/16 14:26	08/30/16 18:23	1
Barium	ND		0.200	0.000270	mg/L		08/23/16 14:26	08/30/16 18:23	1
Beryllium	ND		0.00200	0.000102	mg/L		08/23/16 14:26	08/30/16 18:23	1
Cadmium	ND		0.00100	0.000152	mg/L		08/23/16 14:26	08/30/16 18:23	1
Calcium	ND		1.00	0.0412	mg/L		08/23/16 14:26	08/30/16 18:23	1
Chromium	ND		0.00300	0.000339	mg/L		08/23/16 14:26	08/30/16 18:23	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/23/16 14:26	08/30/16 18:23	1
Lead	ND		0.00500	0.0000675	mg/L		08/23/16 14:26	08/30/16 18:23	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/23/16 14:26	08/30/16 18:23	1
Selenium	ND		0.0100	0.000348	mg/L		08/23/16 14:26	08/30/16 18:23	1
Thallium	ND		0.00100	0.0000360	mg/L		08/23/16 14:26	08/30/16 18:23	1

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

Lab Sample ID: MB 180-185790/1-A
Matrix: Water
Analysis Batch: 186721

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 185790

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		08/23/16 14:26	08/31/16 18:00	1

Lab Sample ID: LCS 180-185790/2-A
Matrix: Water
Analysis Batch: 186523

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 185790

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5274		mg/L		105	80 - 120
Arsenic	0.0400	0.04382		mg/L		110	80 - 120
Barium	2.00	1.966		mg/L		98	80 - 120
Beryllium	0.0500	0.05048		mg/L		101	80 - 120
Cadmium	0.0500	0.05545		mg/L		111	80 - 120
Calcium	50.0	52.85		mg/L		106	80 - 120
Chromium	0.200	0.2143		mg/L		107	80 - 120
Cobalt	0.500	0.5477		mg/L		110	80 - 120
Lead	0.0200	0.02128		mg/L		106	80 - 120
Molybdenum	1.00	1.119		mg/L		112	80 - 120
Selenium	0.0100	0.009968	J	mg/L		100	80 - 120
Thallium	0.0500	0.05027		mg/L		101	80 - 120

Lab Sample ID: LCS 180-185790/2-A
Matrix: Water
Analysis Batch: 186721

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 185790

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.160		mg/L		116	80 - 120

Lab Sample ID: LCSD 180-185790/3-A
Matrix: Water
Analysis Batch: 186523

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 185790

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5296		mg/L		106	80 - 120	0	20
Arsenic	0.0400	0.04395		mg/L		110	80 - 120	0	20
Barium	2.00	1.958		mg/L		98	80 - 120	0	20
Beryllium	0.0500	0.05099		mg/L		102	80 - 120	1	20
Cadmium	0.0500	0.05598		mg/L		112	80 - 120	1	20
Calcium	50.0	53.05		mg/L		106	80 - 120	0	20
Chromium	0.200	0.2160		mg/L		108	80 - 120	1	20
Cobalt	0.500	0.5506		mg/L		110	80 - 120	1	20
Lead	0.0200	0.02144		mg/L		107	80 - 120	1	20
Molybdenum	1.00	1.106		mg/L		111	80 - 120	1	20
Selenium	0.0100	0.009777	J	mg/L		98	80 - 120	2	20
Thallium	0.0500	0.05060		mg/L		101	80 - 120	1	20

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

Lab Sample ID: LCSD 180-185790/3-A
Matrix: Water
Analysis Batch: 186721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 185790

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron			1.00	1.107		mg/L		111	80 - 120	5	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-364553/1-A
Matrix: Water
Analysis Batch: 365090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 364553

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/22/16 10:39	08/23/16 18:26	1

Lab Sample ID: LCS 490-364553/2-A
Matrix: Water
Analysis Batch: 365090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 364553

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9858		ug/L		99	80 - 120		

Lab Sample ID: 490-110211-B-1-D MS
Matrix: Water
Analysis Batch: 365090

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 364553

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND	F1	1.00	0.6844	F1	ug/L		68	75 - 125		

Lab Sample ID: 490-110211-B-1-E MSD
Matrix: Water
Analysis Batch: 365090

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 364553

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	1.00	0.7052	F1	ug/L		71	75 - 125	3	20

Method: 9040C - pH

Lab Sample ID: LCS 490-364922/1
Matrix: Water
Analysis Batch: 364922

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: 490-110210-1 DU
Matrix: Water
Analysis Batch: 364922

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.36			7.370		SU				0.1	20
Temperature	22.7			22.70		Degrees C				0	20

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

Lab Sample ID: MB 490-363946/1
Matrix: Water
Analysis Batch: 363946

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			08/24/16 14:10	1

Lab Sample ID: LCS 490-363946/2
Matrix: Water
Analysis Batch: 363946

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	100.0		mg/L		100	90 - 110

Lab Sample ID: LCSD 490-363946/3
Matrix: Water
Analysis Batch: 363946

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	3	20

Lab Sample ID: 490-110210-1 DU
Matrix: Water
Analysis Batch: 363946

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	585		599.0		mg/L		2	20

Lab Sample ID: 490-110267-C-3 DU
Matrix: Water
Analysis Batch: 363946

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	489		492.0		mg/L		0.6	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-267383/1-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267383

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08755		0.0570	0.0576	1.00	0.0798	pCi/L	08/30/16 15:47	09/21/16 07:08	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.8*		*40 - 110*	*08/30/16 15:47*	*09/21/16 07:08*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-267383/2-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267383

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	14.04		1.36	1.00	0.0737	pCi/L	126	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*

Lab Sample ID: LCSD 160-267383/3-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267383

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	14.31		1.39	1.00	0.0943	pCi/L	128	68 - 137	0.1	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*86.3*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-267401/1-A
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267401

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1940	U	0.291	0.292	1.00	0.488	pCi/L	08/30/16 16:41	09/13/16 19:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.8*		*40 - 110*	*08/30/16 16:41*	*09/13/16 19:00*	*1*
Y Carrier	*84.5*		*40 - 110*	*08/30/16 16:41*	*09/13/16 19:00*	*1*

Lab Sample ID: LCS 160-267401/2-A
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267401

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.6	14.74		1.61	1.00	0.456	pCi/L	101	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*
Y Carrier	*88.6*		*40 - 110*

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

Lab Sample ID: LCSD 160-267401/3-A
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267401

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.6	17.21		1.86	1.00	0.467	pCi/L	118	56 - 140	0.72	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*86.3*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

HPLC/IC

Analysis Batch: 370091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	9056A	
490-110210-2	MW-2	Total/NA	Water	9056A	
490-110210-2	MW-2	Total/NA	Water	9056A	
490-110210-3	MW-3A	Total/NA	Water	9056A	
490-110210-3	MW-3A	Total/NA	Water	9056A	
490-110210-3	MW-3A	Total/NA	Water	9056A	
490-110210-4	MW-4	Total/NA	Water	9056A	
490-110210-4	MW-4	Total/NA	Water	9056A	
490-110210-4	MW-4	Total/NA	Water	9056A	
490-110210-5	MW-5	Total/NA	Water	9056A	
490-110210-5	MW-5	Total/NA	Water	9056A	
490-110210-6	MW-6	Total/NA	Water	9056A	
490-110210-6	MW-6	Total/NA	Water	9056A	
490-110210-6	MW-6	Total/NA	Water	9056A	
490-110210-7	DUPE	Total/NA	Water	9056A	
490-110210-7	DUPE	Total/NA	Water	9056A	
490-110210-8	FIELD BLANK	Total/NA	Water	9056A	
MB 490-370091/35	Method Blank	Total/NA	Water	9056A	
MB 490-370091/6	Method Blank	Total/NA	Water	9056A	
MB 490-370091/62	Method Blank	Total/NA	Water	9056A	
LCS 490-370091/36	Lab Control Sample	Total/NA	Water	9056A	
LCS 490-370091/63	Lab Control Sample	Total/NA	Water	9056A	
LCS 490-370091/7	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-370091/37	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 490-370091/64	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 490-370091/8	Lab Control Sample Dup	Total/NA	Water	9056A	
490-110210-3 MS	MW-3A	Total/NA	Water	9056A	
490-110210-3 MSD	MW-3A	Total/NA	Water	9056A	
490-110210-C-1 MS	490-110210-C-1 MS	Total/NA	Water	9056A	
490-110210-C-1 MSD	490-110210-C-1 MSD	Total/NA	Water	9056A	

Metals

Prep Batch: 185790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total Recoverable	Water	3005A	
490-110210-2	MW-2	Total Recoverable	Water	3005A	
490-110210-3	MW-3A	Total Recoverable	Water	3005A	
490-110210-4	MW-4	Total Recoverable	Water	3005A	
490-110210-5	MW-5	Total Recoverable	Water	3005A	
490-110210-6	MW-6	Total Recoverable	Water	3005A	
490-110210-7	DUPE	Total Recoverable	Water	3005A	
490-110210-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-185790/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-185790/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-185790/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 185792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 185792 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-2	MW-2	Total Recoverable	Water	3005A	
490-110210-3	MW-3A	Total Recoverable	Water	3005A	
490-110210-4	MW-4	Total Recoverable	Water	3005A	
490-110210-5	MW-5	Total Recoverable	Water	3005A	
490-110210-6	MW-6	Total Recoverable	Water	3005A	
490-110210-7	DUPE	Total Recoverable	Water	3005A	
490-110210-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-185792/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-185792/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-185792/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 186523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total Recoverable	Water	6020A	185790
490-110210-2	MW-2	Total Recoverable	Water	6020A	185790
490-110210-3	MW-3A	Total Recoverable	Water	6020A	185790
490-110210-4	MW-4	Total Recoverable	Water	6020A	185790
490-110210-5	MW-5	Total Recoverable	Water	6020A	185790
490-110210-6	MW-6	Total Recoverable	Water	6020A	185790
490-110210-7	DUPE	Total Recoverable	Water	6020A	185790
490-110210-8	FIELD BLANK	Total Recoverable	Water	6020A	185790
MB 180-185790/1-A	Method Blank	Total Recoverable	Water	6020A	185790
LCS 180-185790/2-A	Lab Control Sample	Total Recoverable	Water	6020A	185790
LCSD 180-185790/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	185790

Analysis Batch: 186654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total Recoverable	Water	6010C	185792
490-110210-2	MW-2	Total Recoverable	Water	6010C	185792
490-110210-3	MW-3A	Total Recoverable	Water	6010C	185792
490-110210-4	MW-4	Total Recoverable	Water	6010C	185792
490-110210-5	MW-5	Total Recoverable	Water	6010C	185792
490-110210-6	MW-6	Total Recoverable	Water	6010C	185792
490-110210-7	DUPE	Total Recoverable	Water	6010C	185792
490-110210-8	FIELD BLANK	Total Recoverable	Water	6010C	185792
MB 180-185792/1-A	Method Blank	Total Recoverable	Water	6010C	185792
LCS 180-185792/2-A	Lab Control Sample	Total Recoverable	Water	6010C	185792
LCSD 180-185792/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	185792

Analysis Batch: 186721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total Recoverable	Water	6020A	185790
490-110210-2	MW-2	Total Recoverable	Water	6020A	185790
490-110210-3	MW-3A	Total Recoverable	Water	6020A	185790
490-110210-4	MW-4	Total Recoverable	Water	6020A	185790
490-110210-5	MW-5	Total Recoverable	Water	6020A	185790
490-110210-6	MW-6	Total Recoverable	Water	6020A	185790
490-110210-7	DUPE	Total Recoverable	Water	6020A	185790
490-110210-8	FIELD BLANK	Total Recoverable	Water	6020A	185790
MB 180-185790/1-A	Method Blank	Total Recoverable	Water	6020A	185790
LCS 180-185790/2-A	Lab Control Sample	Total Recoverable	Water	6020A	185790

Metals (Continued)

Analysis Batch: 186721 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 180-185790/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	185790

Prep Batch: 364553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	7470A	
490-110210-2	MW-2	Total/NA	Water	7470A	
490-110210-3	MW-3A	Total/NA	Water	7470A	
490-110210-4	MW-4	Total/NA	Water	7470A	
490-110210-5	MW-5	Total/NA	Water	7470A	
490-110210-6	MW-6	Total/NA	Water	7470A	
490-110210-7	DUPE	Total/NA	Water	7470A	
490-110210-8	FIELD BLANK	Total/NA	Water	7470A	
MB 490-364553/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-364553/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-110211-B-1-D MS	Matrix Spike	Dissolved	Water	7470A	
490-110211-B-1-E MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	

Analysis Batch: 365090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	7470A	364553
490-110210-2	MW-2	Total/NA	Water	7470A	364553
490-110210-3	MW-3A	Total/NA	Water	7470A	364553
490-110210-4	MW-4	Total/NA	Water	7470A	364553
490-110210-5	MW-5	Total/NA	Water	7470A	364553
490-110210-6	MW-6	Total/NA	Water	7470A	364553
490-110210-7	DUPE	Total/NA	Water	7470A	364553
490-110210-8	FIELD BLANK	Total/NA	Water	7470A	364553
MB 490-364553/1-A	Method Blank	Total/NA	Water	7470A	364553
LCS 490-364553/2-A	Lab Control Sample	Total/NA	Water	7470A	364553
490-110211-B-1-D MS	Matrix Spike	Dissolved	Water	7470A	364553
490-110211-B-1-E MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	364553

General Chemistry

Analysis Batch: 363946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	SM 2540C	
490-110210-2	MW-2	Total/NA	Water	SM 2540C	
490-110210-3	MW-3A	Total/NA	Water	SM 2540C	
490-110210-4	MW-4	Total/NA	Water	SM 2540C	
490-110210-5	MW-5	Total/NA	Water	SM 2540C	
490-110210-6	MW-6	Total/NA	Water	SM 2540C	
490-110210-7	DUPE	Total/NA	Water	SM 2540C	
490-110210-8	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-363946/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-363946/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-363946/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-110210-1 DU	MW-1	Total/NA	Water	SM 2540C	
490-110267-C-3 DU	Duplicate	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 364922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	9040C	
490-110210-2	MW-2	Total/NA	Water	9040C	
490-110210-3	MW-3A	Total/NA	Water	9040C	
490-110210-4	MW-4	Total/NA	Water	9040C	
490-110210-5	MW-5	Total/NA	Water	9040C	
490-110210-6	MW-6	Total/NA	Water	9040C	
490-110210-7	DUPE	Total/NA	Water	9040C	
490-110210-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-364922/1	Lab Control Sample	Total/NA	Water	9040C	
490-110210-1 DU	MW-1	Total/NA	Water	9040C	

Rad

Prep Batch: 267383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	PrecSep-21	
490-110210-2	MW-2	Total/NA	Water	PrecSep-21	
490-110210-3	MW-3A	Total/NA	Water	PrecSep-21	
490-110210-4	MW-4	Total/NA	Water	PrecSep-21	
490-110210-5	MW-5	Total/NA	Water	PrecSep-21	
490-110210-6	MW-6	Total/NA	Water	PrecSep-21	
490-110210-7	DUPE	Total/NA	Water	PrecSep-21	
490-110210-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-267383/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-267383/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-267383/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 267401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110210-1	MW-1	Total/NA	Water	PrecSep_0	
490-110210-2	MW-2	Total/NA	Water	PrecSep_0	
490-110210-3	MW-3A	Total/NA	Water	PrecSep_0	
490-110210-4	MW-4	Total/NA	Water	PrecSep_0	
490-110210-5	MW-5	Total/NA	Water	PrecSep_0	
490-110210-6	MW-6	Total/NA	Water	PrecSep_0	
490-110210-7	DUPE	Total/NA	Water	PrecSep_0	
490-110210-8	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-267401/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-267401/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-267401/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

Client Sample ID: MW-1

Date Collected: 08/18/16 09:20
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-1

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			370091	09/14/16 16:13	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:03	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 18:56	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 19:25	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 18:53	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.99 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270871	09/21/16 07:14	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.99 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269331	09/13/16 19:03	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 08/18/16 14:25
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-2

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			370091	09/14/16 17:13	JHS	TAL NSH
Total/NA	Analysis	9056A		20			370091	09/14/16 23:35	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:08	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 18:58	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 19:30	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 18:56	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.49 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270871	09/21/16 07:14	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.49 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269331	09/13/16 19:03	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 08/18/16 13:55
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-3

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			370091	09/14/16 17:33	JHS	TAL NSH
Total/NA	Analysis	9056A		100			370091	09/15/16 01:55	JHS	TAL NSH
Total/NA	Analysis	9056A		200			370091	09/15/16 10:57	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:13	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 19:00	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 19:35	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 18:58	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.18 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270871	09/21/16 07:15	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.18 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269330	09/13/16 18:57	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 08/18/16 12:55
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-4

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			370091	09/14/16 17:53	JHS	TAL NSH
Total/NA	Analysis	9056A		50			370091	09/15/16 03:15	JHS	TAL NSH
Total/NA	Analysis	9056A		200			370091	09/15/16 11:37	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:18	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 19:02	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 19:41	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 19:01	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.22 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270871	09/21/16 07:15	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.22 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269331	09/13/16 19:01	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 08/18/16 11:35
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-5

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			370091	09/14/16 18:14	JHS	TAL NSH
Total/NA	Analysis	9056A		50			370091	09/15/16 03:56	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:24	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 19:04	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 19:46	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 19:04	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1			270869	09/21/16 17:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269330	09/13/16 18:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 08/18/16 10:45
Date Received: 08/20/16 09:30

Lab Sample ID: 490-110210-6

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			370091	09/14/16 18:34	JHS	TAL NSH
Total/NA	Analysis	9056A		50			370091	09/15/16 04:36	JHS	TAL NSH
Total/NA	Analysis	9056A		100			370091	09/15/16 12:17	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:39	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 19:11	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 20:01	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 19:07	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.35 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270875	09/21/16 07:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.35 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269330	09/13/16 18:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-110210-7

Date Collected: 08/18/16 11:45
Matrix: Water
Date Received: 08/20/16 09:30

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			370091	09/14/16 18:54	JHS	TAL NSH
Total/NA	Analysis	9056A		50			370091	09/15/16 05:16	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:45	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 19:13	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 20:06	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 19:09	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.82 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270875	09/21/16 07:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.82 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269330	09/13/16 18:54	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-110210-8

Date Collected: 08/18/16 16:00
Matrix: Water
Date Received: 08/20/16 09:30

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			370091	09/14/16 19:14	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185792	08/23/16 14:27	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 16:50	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186523	08/30/16 19:15	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185790	08/23/16 14:26	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186721	08/31/16 20:11	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364553	08/22/16 10:39	LCS	TAL NSH
Total/NA	Analysis	7470A		1			365090	08/23/16 19:12	BLG	TAL NSH
Total/NA	Analysis	9040C		1			364922	08/23/16 15:56	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363946	08/24/16 14:10	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.07 mL	1.0 g	267383	08/30/16 15:47	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270875	09/21/16 07:17	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.07 mL	1.0 g	267401	08/30/16 16:41	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269330	09/13/16 18:54	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271222	09/22/16 21:10	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

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: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-16 *
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-17
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-110210 Chain of Custody

Cooler Received/Opened On 8/20/2016 @ 0930

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

1. Tracking # 5060 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960358 pH Strip Lot HC58117 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: (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) MBW

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) PN

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) PN

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) PN

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

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
110210

COOLER RECEIPT FORM

Cooler Received/Opened On 8/20/2016 @ 0930

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

1. Tracking # 0346 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960358 pH Strip Lot HC58117 Chlorine Strip Lot 71130

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) 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) PN

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) PN

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) PN

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

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
110210
#1
A

Cooler Received/Opened On 8/20/2016 @ 0930

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

1. Tracking #_____5120_____(last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC58117 Chlorine Strip Lot 71130

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 Frnt

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) PN

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) PN

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) PN

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

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
110210
#1
B

Cooler Received/Opened On 8/20/2016 @ 0930

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

1. Tracking # 5185 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960358 pH Strip Lot HC58117 Chlorine Strip Lot 71130

2. Temperature of rep. sample or temp blank when opened: 1.4 *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) PN

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) PN

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) PN

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

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.

9/23/2016

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 8/19/2016**	COC No: 490-53216-17234.1
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: Green Landfill CCR Groundwater-Round 3	☐ 1 week			
Site: Green Landfill (GL)	☐ 2 days			Job / SDG No.:
P O #: Purchase Order-see DOCs	☐ 1 day			

Loc: 490
110210

	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:
1	MW-1	8/18/16	920	G	Water	6	N	N	x	x	x	x	
2	MW-2	8/18/16	1425	G	Water	6	N	N	x	x	x	x	
3	MW-3A	8/18/16	1355	G	Water	6	N	N	x	x	x	x	sample bottles labeled MW-3 are same as MW-3A
4	MW-4	8/18/16	1255	G	Water	6	N	N	x	x	x	x	
5	MW-5	8/18/16	1135	G	Water	6	N	N	x	x	x	x	
6	MW-6	8/18/16	1045	G	Water	6	N	N	x	x	x	x	
7	DUPE	8/18/16	1145	G	Water	6	N	N	x	x	x	x	
8	FIELD BLANK	8/18/16	1600	G	Water	6	N	N	x	x	x	x	
									4	4	7	7	

Greg Dick

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 lists 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: 8/19/2016 1145	Received by:	0.4	Company: TAN	Date/Time: 8/20/16 930
Relinquished by:	Company:	Date/Time:	Received by:	1.9	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	0.9	Company:	Date/Time:
				1.4		

40 CFR PART 257 Constituent List:

Loc: 490
110210
#1
C

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

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-110210-1
SDG Number: Green Landfill (GL)

Login Number: 110210
List Number: 1
Creator: Ngo, Phiet

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: 490-110210-1
SDG Number: Green Landfill (GL)

Login Number: 110210
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 08/23/16 12:52 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: 490-110210-1
SDG Number: Green Landfill (GL)

Login Number: 110210
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/23/16 01:23 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	17.0, 3.9
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: Green Landfill CCR Groundwater - Round 3

TestAmerica Job ID: 490-110210-1
SDG: Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-110210-1	MW-1	72.9
490-110210-2	MW-2	79.8
490-110210-3	MW-3A	84.9
490-110210-4	MW-4	85.2
490-110210-5	MW-5	85.5
490-110210-6	MW-6	85.5
490-110210-7	DUPE	86.0
490-110210-8	FIELD BLANK	81.2
LCS 160-267383/2-A	Lab Control Sample	87.7
LCSD 160-267383/3-A	Lab Control Sample Dup	86.3
MB 160-267383/1-A	Method Blank	81.8

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-110210-1	MW-1	72.9	82.2
490-110210-2	MW-2	79.8	79.6
490-110210-3	MW-3A	84.9	81.9
490-110210-4	MW-4	85.2	78.9
490-110210-5	MW-5	85.5	81.9
490-110210-6	MW-6	85.5	86.0
490-110210-7	DUPE	86.0	87.5
490-110210-8	FIELD BLANK	81.2	87.5
LCS 160-267401/2-A	Lab Control Sample	87.7	88.6
LCSD 160-267401/3-A	Lab Control Sample Dup	86.3	81.9
MB 160-267401/1-A	Method Blank	81.8	84.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-115100-1
TestAmerica Sample Delivery Group: Green Landfill (GL)
Client Project/Site: GL CCR Groundwater Round 4
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
11/30/2016 1:24:41 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-115100-1	MW-1	Water	10/26/16 10:50	10/29/16 11:59
490-115100-2	MW-4	Water	10/26/16 15:15	10/29/16 11:59
490-115100-3	MW-5	Water	10/26/16 14:00	10/29/16 11:59
490-115100-4	MW-6	Water	10/26/16 12:25	10/29/16 11:59
490-115100-5	DUPE	Water	10/26/16 13:00	10/29/16 11:59
490-115100-6	FIELD BLANK	Water	10/28/16 09:30	10/29/16 09:25

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Job ID: 490-115100-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-115100-1

Comments
No additional comments.

Receipt
The samples were received on 10/29/2016 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.0º C, 1.6º C, 3.5º C and 5.6º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-383844 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 490-383844 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 490-383844 contained Chloride, 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: The method blank for analytical batch 490-384059 contained Chloride and Fluoride 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 following samples was diluted due to the nature of the sample matrix: MW-1 (490-115100-1), MW-4 (490-115100-2), MW-5 (490-115100-3), MW-6 (490-115100-4) and DUPE (490-115100-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: Due to the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed for analytical batch 490-384059 . However, the laboratory control sample / laboratory control sample duplicate (MS/MSD) recoveries were within the acceptance limits. (LCS 490-384059/13) and (LCSD 490-384059/14)

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-1

Date Collected: 10/26/16 10:50
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.02**	**B**	3.00	0.200	mg/L			11/01/16 18:36	1
Fluoride	**0.649**	**J B**	1.00	0.0100	mg/L			11/01/16 18:36	1
Sulfate	**20.7**	**B**	10.0	0.0600	mg/L			11/03/16 17:50	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0286**	**J**	0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 14:42	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		11/02/16 07:05	11/11/16 17:45	1
Arsenic	**0.00167**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 17:45	1
Barium	**0.0898**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 17:45	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 17:45	1
Boron	**1.70**		1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 17:45	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 17:45	1
Calcium	**30.9**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 17:45	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 17:45	1
Cobalt	**0.00144**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 17:45	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 17:45	1
Molybdenum	**0.00128**	**J**	0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 17:45	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 17:45	1
Thallium	**0.000122**	**J**	0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 17:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 17:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.38**		0.100	0.100	SU			11/01/16 17:21	1
Temperature	**23.0**		0.100	0.100	Degrees C			11/01/16 17:21	1
Total Dissolved Solids	**585**		10.0	7.00	mg/L			11/01/16 18:05	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	**0.409**		0.266	0.268	1.00	0.361	pCi/L	11/02/16 15:25	11/29/16 21:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:54*	*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	**0.613**		0.284	0.289	1.00	0.412	pCi/L	11/02/16 15:54	11/29/16 19:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:05*	*1*

Client Sample ID: MW-1
Date Collected: 10/26/16 10:50
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	11/02/16 15:54	11/29/16 19:05	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	1.02		0.389	0.395	5.00	0.412	pCi/L		11/30/16 11:17	1

Client Sample ID: MW-4

Date Collected: 10/26/16 15:15
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1000**	**B**	300	20.0	mg/L			11/03/16 18:14	100
Fluoride	**0.519**	**J B**	1.00	0.0100	mg/L			11/01/16 19:25	1
Sulfate	**1420**	**B**	500	3.00	mg/L			11/03/16 18:14	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**1.25**		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 14:47	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		11/02/16 07:05	11/11/16 17:50	1
Arsenic	ND		0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 17:50	1
Barium	**0.0206**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 17:50	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 17:50	1
Boron	**1.63**		1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 17:50	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 17:50	1
Calcium	**558**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 17:50	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 17:50	1
Cobalt	ND		0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 17:50	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 17:50	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 17:50	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 17:50	1
Thallium	**0.0000450**	**J**	0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 17:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.248**		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 17:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.84**		0.100	0.100	SU			11/01/16 17:21	1
Temperature	**23.0**		0.100	0.100	Degrees C			11/01/16 17:21	1
Total Dissolved Solids	**3250**		40.0	28.0	mg/L			11/01/16 18:05	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	0.185	U	0.221	0.222	1.00	0.360	pCi/L	11/02/16 15:25	11/29/16 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:59*	*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**		0.230	0.232	1.00	0.351	pCi/L	11/02/16 15:54	11/29/16 19:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:05*	*1*

Client Sample ID: MW-4
Date Collected: 10/26/16 15:15
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	11/02/16 15:54	11/29/16 19:05	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	0.536		0.319	0.321	5.00	0.360	pCi/L		11/30/16 11:17	1

Client Sample ID: MW-5

Date Collected: 10/26/16 14:00
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**755**	**B**	150	10.0	mg/L			11/03/16 18:39	50
Fluoride	ND		1.00	0.0100	mg/L			11/01/16 19:49	1
Sulfate	**1740**	**B**	1000	6.00	mg/L			11/03/16 19:04	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.325**		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 14:53	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		11/02/16 07:05	11/11/16 17:55	1
Arsenic	**0.000229**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 17:55	1
Barium	**0.0129**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 17:55	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 17:55	1
Boron	**0.214**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 17:55	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 17:55	1
Calcium	**399**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 17:55	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 17:55	1
Cobalt	**0.000214**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 17:55	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 17:55	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 17:55	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 17:55	1
Thallium	**0.0000830**	**J**	0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 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		11/22/16 12:06	11/22/16 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.86**		0.100	0.100	SU			11/01/16 17:21	1
Temperature	**23.0**		0.100	0.100	Degrees C			11/01/16 17:21	1
Total Dissolved Solids	**3610**		40.0	28.0	mg/L			11/01/16 18:05	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	**0.456**		0.307	0.310	1.00	0.430	pCi/L	11/02/16 15:25	11/29/16 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:59*	*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	**0.501**		0.251	0.255	1.00	0.366	pCi/L	11/02/16 15:54	11/29/16 19:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:05*	*1*

Client Sample ID: MW-5
Date Collected: 10/26/16 14:00
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.1		40 - 110	11/02/16 15:54	11/29/16 19:05	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	0.957		0.397	0.401	5.00	0.430	pCi/L		11/30/16 11:17	1

Client Sample ID: MW-6

Date Collected: 10/26/16 12:25
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**150**	**B**	30.0	2.00	mg/L			11/03/16 19:28	10
Fluoride	**0.776**	**J B**	1.00	0.0100	mg/L			11/01/16 20:14	1
Sulfate	**2610**	**B**	1000	6.00	mg/L			11/03/16 20:17	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0524**		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 14:58	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		11/02/16 07:05	11/11/16 18:00	1
Arsenic	**0.000199**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:00	1
Barium	**0.0108**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:00	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:00	1
Boron	**0.168**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:00	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:00	1
Calcium	**400**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:00	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:00	1
Cobalt	**0.000675**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:00	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:00	1
Molybdenum	**0.00170**	**J**	0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:00	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:00	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/22/16 12:06	11/22/16 19:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.76**		0.100	0.100	SU			11/01/16 17:21	1
Temperature	**23.0**		0.100	0.100	Degrees C			11/01/16 17:21	1
Total Dissolved Solids	**4470**		40.0	28.0	mg/L			11/01/16 18:05	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	0.290	U	0.266	0.267	1.00	0.403	pCi/L	11/02/16 15:25	11/29/16 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.5*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:59*	*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**		0.268	0.272	1.00	0.406	pCi/L	11/02/16 15:54	11/29/16 19:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.5*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:05*	*1*

Client Sample ID: MW-6
Date Collected: 10/26/16 12:25
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	82.2		40 - 110	11/02/16 15:54	11/29/16 19:05	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	0.751		0.378	0.381	5.00	0.406	pCi/L		11/30/16 11:17	1

Client Sample ID: DUPE

Date Collected: 10/26/16 13:00
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**148**	**B**	30.0	2.00	mg/L			11/03/16 20:42	10
Fluoride	**0.662**	**J B**	1.00	0.0100	mg/L			11/01/16 20:39	1
Sulfate	**2530**	**B**	1000	6.00	mg/L			11/03/16 21:06	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0547**		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 15:04	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		11/02/16 07:05	11/11/16 18:05	1
Arsenic	**0.000285**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:05	1
Barium	**0.00878**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:05	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:05	1
Boron	**0.173**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:05	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:05	1
Calcium	**415**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:05	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:05	1
Cobalt	**0.000155**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:05	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:05	1
Molybdenum	**0.00156**	**J**	0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:05	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:05	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/22/16 12:06	11/22/16 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.74**		0.100	0.100	SU			11/01/16 17:21	1
Temperature	**23.0**		0.100	0.100	Degrees C			11/01/16 17:21	1
Total Dissolved Solids	**4140**		40.0	28.0	mg/L			11/01/16 18:05	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	**1.27**		0.424	0.440	1.00	0.405	pCi/L	11/02/16 15:25	11/29/16 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:59*	*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	0.0342	U	0.231	0.231	1.00	0.407	pCi/L	11/02/16 15:54	11/29/16 18:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*11/02/16 15:54*	*11/29/16 18:59*	*1*

Client Sample ID: DUPE
Date Collected: 10/26/16 13:00
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.7		40 - 110	11/02/16 15:54	11/29/16 18:59	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	1.31		0.483	0.497	5.00	0.407	pCi/L		11/30/16 11:17	1

Client Sample ID: FIELD BLANK

Date Collected: 10/28/16 09:30
Date Received: 10/29/16 09:25

Lab Sample ID: 490-115100-6

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			11/01/16 21:28	1
Fluoride	**0.0424**	**J B**	1.00	0.0100	mg/L			11/01/16 21:28	1
Sulfate	**0.197**	**J B**	5.00	0.0300	mg/L			11/01/16 21:28	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		11/02/16 07:06	11/07/16 15:09	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		11/02/16 07:05	11/11/16 18:10	1
Arsenic	ND		0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:10	1
Barium	ND		0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:10	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:10	1
Boron	**0.00351**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:10	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:10	1
Calcium	**0.0833**	**J**	1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:10	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:10	1
Cobalt	ND		0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:10	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:10	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:10	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:10	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/22/16 12:06	11/22/16 19:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.88**		0.100	0.100	SU			11/01/16 17:21	1
Temperature	**23.0**		0.100	0.100	Degrees C			11/01/16 17:21	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			11/01/16 18:05	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	**0.948**		0.355	0.365	1.00	0.347	pCi/L	11/02/16 15:25	11/29/16 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:59*	*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	0.126	U	0.206	0.206	1.00	0.348	pCi/L	11/02/16 15:54	11/29/16 18:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*40 - 110*	*11/02/16 15:54*	*11/29/16 18:59*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 10/28/16 09:30
Date Received: 10/29/16 09:25

Lab Sample ID: 490-115100-6
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.7		40 - 110	11/02/16 15:54	11/29/16 18:59	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	1.07		0.410	0.419	5.00	0.348	pCi/L		11/30/16 11:17	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-383844/12
Matrix: Water
Analysis Batch: 383844

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2302	J	3.00	0.200	mg/L			11/01/16 17:59	1
Fluoride	0.04237	J	1.00	0.0100	mg/L			11/01/16 17:59	1
Sulfate	0.1886	J	5.00	0.0300	mg/L			11/01/16 17:59	1

Lab Sample ID: LCS 490-383844/13
Matrix: Water
Analysis Batch: 383844

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	9.951		mg/L		100	80 - 120
Fluoride	1.00	0.9890	J	mg/L		99	80 - 120
Sulfate	10.0	10.28		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-383844/14
Matrix: Water
Analysis Batch: 383844

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	10.19		mg/L		102	80 - 120	2	20
Fluoride	1.00	1.006		mg/L		101	80 - 120	2	20
Sulfate	10.0	10.15		mg/L		101	80 - 120	1	20

Lab Sample ID: 490-115100-F-1 MS
Matrix: Water
Analysis Batch: 383844

Client Sample ID: 490-115100-F-1 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.13	F1 B	2.00	7.262	F1	mg/L		57	80 - 120
Fluoride	0.627	J F1 B	0.200	0.6901	J F1	mg/L		32	80 - 120
Sulfate	23.1	E B	2.00	20.31	E 4	mg/L		-137	80 - 120

Lab Sample ID: 490-115100-F-1 MSD
Matrix: Water
Analysis Batch: 383844

Client Sample ID: 490-115100-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	6.13	F1 B	2.00	7.246	F1	mg/L		56	80 - 120	0	20
Fluoride	0.627	J F1 B	0.200	0.6936	J F1	mg/L		33	80 - 120	1	20
Sulfate	23.1	E B	2.00	20.34	E 4	mg/L		-136	80 - 120	0	20

Lab Sample ID: MB 490-384059/12
Matrix: Water
Analysis Batch: 384059

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2933	J	3.00	0.200	mg/L			11/03/16 17:13	1
Fluoride	ND		1.00	0.0100	mg/L			11/03/16 17:13	1
Sulfate	0.1848	J	5.00	0.0300	mg/L			11/03/16 17:13	1

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

Lab Sample ID: LCS 490-384059/13
Matrix: Water
Analysis Batch: 384059

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	9.976		mg/L		100	80 - 120
Fluoride	1.00	1.046		mg/L		105	80 - 120
Sulfate	10.0	10.41		mg/L		104	80 - 120

Lab Sample ID: LCSD 490-384059/14
Matrix: Water
Analysis Batch: 384059

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	10.14		mg/L		101	80 - 120	2	20
Fluoride	1.00	1.032		mg/L		103	80 - 120	1	20
Sulfate	10.0	10.29		mg/L		103	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-193025/1-A
Matrix: Water
Analysis Batch: 193588

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 193025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 14:16	1

Lab Sample ID: LCS 180-193025/2-A
Matrix: Water
Analysis Batch: 193588

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 193025

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.021		mg/L		102	80 - 120

Lab Sample ID: LCSD 180-193025/3-A
Matrix: Water
Analysis Batch: 193588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 193025

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.017		mg/L		102	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-193024/1-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		11/02/16 07:05	11/11/16 17:30	1
Arsenic	ND		0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 17:30	1
Barium	ND		0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 17:30	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 17:30	1
Boron	ND		1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 17:30	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 17:30	1

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

Lab Sample ID: MB 180-193024/1-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 17:30	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 17:30	1
Cobalt	ND		0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 17:30	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 17:30	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 17:30	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 17:30	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 17:30	1

Lab Sample ID: LCS 180-193024/2-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5439		mg/L		109	80 - 120
Arsenic	0.0400	0.04063		mg/L		102	80 - 120
Barium	2.00	2.035		mg/L		102	80 - 120
Beryllium	0.0500	0.05013		mg/L		100	80 - 120
Boron	1.00	1.114		mg/L		111	80 - 120
Cadmium	0.0500	0.05364		mg/L		107	80 - 120
Calcium	50.0	53.66		mg/L		107	80 - 120
Chromium	0.200	0.2074		mg/L		104	80 - 120
Cobalt	0.500	0.5370		mg/L		107	80 - 120
Lead	0.0200	0.02125		mg/L		106	80 - 120
Molybdenum	1.00	1.142		mg/L		114	80 - 120
Selenium	0.0100	0.01116		mg/L		112	80 - 120
Thallium	0.0500	0.05260		mg/L		105	80 - 120

Lab Sample ID: LCSD 180-193024/3-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5422		mg/L		108	80 - 120	0	20
Arsenic	0.0400	0.04112		mg/L		103	80 - 120	1	20
Barium	2.00	2.017		mg/L		101	80 - 120	1	20
Beryllium	0.0500	0.05028		mg/L		101	80 - 120	0	20
Boron	1.00	1.074		mg/L		107	80 - 120	4	20
Cadmium	0.0500	0.05040		mg/L		101	80 - 120	6	20
Calcium	50.0	52.81		mg/L		106	80 - 120	2	20
Chromium	0.200	0.2114		mg/L		106	80 - 120	2	20
Cobalt	0.500	0.5306		mg/L		106	80 - 120	1	20
Lead	0.0200	0.02117		mg/L		106	80 - 120	0	20
Molybdenum	1.00	1.146		mg/L		115	80 - 120	0	20
Selenium	0.0100	0.008434	J	mg/L		84	80 - 120	28	20
Thallium	0.0500	0.05176		mg/L		104	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-388552/1-A
Matrix: Water
Analysis Batch: 388888

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 388552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 10:49	1

Lab Sample ID: LCS 490-388552/2-A
Matrix: Water
Analysis Batch: 388888

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 388552

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9987		ug/L		100	80 - 120

Lab Sample ID: 490-114996-A-1-B MS
Matrix: Water
Analysis Batch: 388888

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 388552

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.9278		ug/L		93	75 - 125

Lab Sample ID: 490-114996-A-1-C MSD
Matrix: Water
Analysis Batch: 388888

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 388552

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.055		ug/L		106	75 - 125	13	20

Lab Sample ID: MB 490-388856/1-A
Matrix: Water
Analysis Batch: 389090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 388856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/22/16 12:06	11/22/16 19:40	1

Lab Sample ID: LCS 490-388856/2-A
Matrix: Water
Analysis Batch: 389090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 388856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9031		ug/L		90	80 - 120

Lab Sample ID: 490-115100-3 MS
Matrix: Water
Analysis Batch: 389090

Client Sample ID: MW-5
Prep Type: Total/NA
Prep Batch: 388856

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.7685		ug/L		77	75 - 125

Lab Sample ID: 490-115100-3 MSD
Matrix: Water
Analysis Batch: 389090

Client Sample ID: MW-5
Prep Type: Total/NA
Prep Batch: 388856

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8924		ug/L		89	75 - 125	15	20

Method: 9040C - pH

Lab Sample ID: LCS 490-383170/12
Matrix: Water
Analysis Batch: 383170

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: 490-115100-1 DU
Matrix: Water
Analysis Batch: 383170

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.38		7.380		SU		0	20
Temperature	23.0		23.00		Degrees C		0	20

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

Lab Sample ID: MB 490-382169/1
Matrix: Water
Analysis Batch: 382169

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			11/01/16 18:05	1

Lab Sample ID: LCS 490-382169/2
Matrix: Water
Analysis Batch: 382169

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	97.00		mg/L		97	90 - 110

Lab Sample ID: 490-115058-G-1 DU
Matrix: Water
Analysis Batch: 382169

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	568		574.0		mg/L		0.7	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-277268/1-A
Matrix: Water
Analysis Batch: 281281

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277268

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.3001	U	0.295	0.296	1.00	0.466	pCi/L	11/02/16 15:25	11/29/16 21:51	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:51*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-277268/2-A
Matrix: Water
Analysis Batch: 281281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277268

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.1	15.19		1.93	1.00	0.519	pCi/L	137	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.4*		*40 - 110*

Lab Sample ID: 160-19757-V-2-B DU
Matrix: Water
Analysis Batch: 281281

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 277268

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	2.13			2.055		0.546	1.00	0.418	pCi/L			0.06	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*89.5*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-277276/1-A
Matrix: Water
Analysis Batch: 281385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277276

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3252	U	0.268	0.270	1.00	0.427	pCi/L	11/02/16 15:54	11/29/16 19:02	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:02*	*1*
Y Carrier	*77.8*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:02*	*1*

Lab Sample ID: LCS 160-277276/2-A
Matrix: Water
Analysis Batch: 281385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277276

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.2	14.98		1.67	1.00	0.471	pCi/L	105	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.4*		*40 - 110*
Y Carrier	*80.0*		*40 - 110*

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

Lab Sample ID: 160-19757-V-2-D DU
Matrix: Water
Analysis Batch: 281385

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 277276

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	2.30			2.567		0.475	1.00	0.434	pCi/L			0.29	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*89.5*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

HPLC/IC

Analysis Batch: 383844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	9056A	
490-115100-2	MW-4	Total/NA	Water	9056A	
490-115100-3	MW-5	Total/NA	Water	9056A	
490-115100-4	MW-6	Total/NA	Water	9056A	
490-115100-5	DUPE	Total/NA	Water	9056A	
490-115100-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-383844/12	Method Blank	Total/NA	Water	9056A	
LCS 490-383844/13	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-383844/14	Lab Control Sample Dup	Total/NA	Water	9056A	
490-115100-F-1 MS	490-115100-F-1 MS	Total/NA	Water	9056A	
490-115100-F-1 MSD	490-115100-F-1 MSD	Total/NA	Water	9056A	

Analysis Batch: 384059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	9056A	
490-115100-2	MW-4	Total/NA	Water	9056A	
490-115100-3	MW-5	Total/NA	Water	9056A	
490-115100-3	MW-5	Total/NA	Water	9056A	
490-115100-4	MW-6	Total/NA	Water	9056A	
490-115100-4	MW-6	Total/NA	Water	9056A	
490-115100-5	DUPE	Total/NA	Water	9056A	
490-115100-5	DUPE	Total/NA	Water	9056A	
MB 490-384059/12	Method Blank	Total/NA	Water	9056A	
LCS 490-384059/13	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-384059/14	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 193024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total Recoverable	Water	3005A	
490-115100-2	MW-4	Total Recoverable	Water	3005A	
490-115100-3	MW-5	Total Recoverable	Water	3005A	
490-115100-4	MW-6	Total Recoverable	Water	3005A	
490-115100-5	DUPE	Total Recoverable	Water	3005A	
490-115100-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-193024/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-193024/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-193024/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 193025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total Recoverable	Water	3005A	
490-115100-2	MW-4	Total Recoverable	Water	3005A	
490-115100-3	MW-5	Total Recoverable	Water	3005A	
490-115100-4	MW-6	Total Recoverable	Water	3005A	
490-115100-5	DUPE	Total Recoverable	Water	3005A	
490-115100-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-193025/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-193025/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 193025 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 180-193025/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 193588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total Recoverable	Water	6010C	193025
490-115100-2	MW-4	Total Recoverable	Water	6010C	193025
490-115100-3	MW-5	Total Recoverable	Water	6010C	193025
490-115100-4	MW-6	Total Recoverable	Water	6010C	193025
490-115100-5	DUPE	Total Recoverable	Water	6010C	193025
490-115100-6	FIELD BLANK	Total Recoverable	Water	6010C	193025
MB 180-193025/1-A	Method Blank	Total Recoverable	Water	6010C	193025
LCS 180-193025/2-A	Lab Control Sample	Total Recoverable	Water	6010C	193025
LCSD 180-193025/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	193025

Analysis Batch: 194131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total Recoverable	Water	6020A	193024
490-115100-2	MW-4	Total Recoverable	Water	6020A	193024
490-115100-3	MW-5	Total Recoverable	Water	6020A	193024
490-115100-4	MW-6	Total Recoverable	Water	6020A	193024
490-115100-5	DUPE	Total Recoverable	Water	6020A	193024
490-115100-6	FIELD BLANK	Total Recoverable	Water	6020A	193024
MB 180-193024/1-A	Method Blank	Total Recoverable	Water	6020A	193024
LCS 180-193024/2-A	Lab Control Sample	Total Recoverable	Water	6020A	193024
LCSD 180-193024/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	193024

Prep Batch: 388552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	7470A	
490-115100-2	MW-4	Total/NA	Water	7470A	
MB 490-388552/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-388552/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-114996-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-114996-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Prep Batch: 388856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-3	MW-5	Total/NA	Water	7470A	
490-115100-4	MW-6	Total/NA	Water	7470A	
490-115100-5	DUPE	Total/NA	Water	7470A	
490-115100-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-388856/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-388856/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-115100-3 MS	MW-5	Total/NA	Water	7470A	
490-115100-3 MSD	MW-5	Total/NA	Water	7470A	

Analysis Batch: 388888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-388552/1-A	Method Blank	Total/NA	Water	7470A	388552
LCS 490-388552/2-A	Lab Control Sample	Total/NA	Water	7470A	388552
490-114996-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	388552

Metals (Continued)

Analysis Batch: 388888 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	388552

Analysis Batch: 389090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	7470A	388552
490-115100-2	MW-4	Total/NA	Water	7470A	388552
490-115100-3	MW-5	Total/NA	Water	7470A	388856
490-115100-4	MW-6	Total/NA	Water	7470A	388856
490-115100-5	DUPE	Total/NA	Water	7470A	388856
490-115100-6	FIELD BLANK	Total/NA	Water	7470A	388856
MB 490-388856/1-A	Method Blank	Total/NA	Water	7470A	388856
LCS 490-388856/2-A	Lab Control Sample	Total/NA	Water	7470A	388856
490-115100-3 MS	MW-5	Total/NA	Water	7470A	388856
490-115100-3 MSD	MW-5	Total/NA	Water	7470A	388856

General Chemistry

Analysis Batch: 382169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	SM 2540C	
490-115100-2	MW-4	Total/NA	Water	SM 2540C	
490-115100-3	MW-5	Total/NA	Water	SM 2540C	
490-115100-4	MW-6	Total/NA	Water	SM 2540C	
490-115100-5	DUPE	Total/NA	Water	SM 2540C	
490-115100-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-382169/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-382169/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-115058-G-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 383170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	9040C	
490-115100-2	MW-4	Total/NA	Water	9040C	
490-115100-3	MW-5	Total/NA	Water	9040C	
490-115100-4	MW-6	Total/NA	Water	9040C	
490-115100-5	DUPE	Total/NA	Water	9040C	
490-115100-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-383170/12	Lab Control Sample	Total/NA	Water	9040C	
490-115100-1 DU	MW-1	Total/NA	Water	9040C	

Rad

Prep Batch: 277268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	PrecSep-21	
490-115100-2	MW-4	Total/NA	Water	PrecSep-21	
490-115100-3	MW-5	Total/NA	Water	PrecSep-21	
490-115100-4	MW-6	Total/NA	Water	PrecSep-21	
490-115100-5	DUPE	Total/NA	Water	PrecSep-21	
490-115100-6	FIELD BLANK	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 277268 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-277268/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-277268/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-19757-V-2-B DU	Duplicate	Dissolved	Water	PrecSep-21	

Prep Batch: 277276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-115100-1	MW-1	Total/NA	Water	PrecSep_0	
490-115100-2	MW-4	Total/NA	Water	PrecSep_0	
490-115100-3	MW-5	Total/NA	Water	PrecSep_0	
490-115100-4	MW-6	Total/NA	Water	PrecSep_0	
490-115100-5	DUPE	Total/NA	Water	PrecSep_0	
490-115100-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-277276/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-277276/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-19757-V-2-D DU	Duplicate	Dissolved	Water	PrecSep_0	

Client Sample ID: MW-1

Date Collected: 10/26/16 10:50
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-1

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			383844	11/01/16 18:36	KS	TAL NSH
Total/NA	Analysis	9056A		2			384059	11/03/16 17:50	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 14:42	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 17:45	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389090	11/22/16 17:18	LCS	TAL NSH
Total/NA	Analysis	9040C		1			383170	11/01/16 17:21	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	382169	11/01/16 18:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.59 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281281	11/29/16 21:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.59 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 10/26/16 15:15
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-2

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			383844	11/01/16 19:25	KS	TAL NSH
Total/NA	Analysis	9056A		100			384059	11/03/16 18:14	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 14:47	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 17:50	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389090	11/22/16 17:15	LCS	TAL NSH
Total/NA	Analysis	9040C		1			383170	11/01/16 17:21	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	382169	11/01/16 18:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.50 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281492	11/29/16 21:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.50 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Client Sample ID: MW-5

Date Collected: 10/26/16 14:00
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-3

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			383844	11/01/16 19:49	KS	TAL NSH
Total/NA	Analysis	9056A		50			384059	11/03/16 18:39	NC	TAL NSH
Total/NA	Analysis	9056A		200			384059	11/03/16 19:04	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 14:53	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 17:55	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388856	11/22/16 12:06	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389090	11/22/16 19:45	LCS	TAL NSH
Total/NA	Analysis	9040C		1			383170	11/01/16 17:21	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	382169	11/01/16 18:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.95 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281492	11/29/16 21:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.95 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 10/26/16 12:25
Date Received: 10/29/16 11:59

Lab Sample ID: 490-115100-4

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			383844	11/01/16 20:14	KS	TAL NSH
Total/NA	Analysis	9056A		10			384059	11/03/16 19:28	NC	TAL NSH
Total/NA	Analysis	9056A		200			384059	11/03/16 20:17	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 14:58	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:00	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388856	11/22/16 12:06	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389090	11/22/16 19:53	LCS	TAL NSH
Total/NA	Analysis	9040C		1			383170	11/01/16 17:21	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	382169	11/01/16 18:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.35 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281492	11/29/16 21:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.35 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-115100-5

Date Collected: 10/26/16 13:00
Matrix: Water
Date Received: 10/29/16 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			383844	11/01/16 20:39	KS	TAL NSH
Total/NA	Analysis	9056A		10			384059	11/03/16 20:42	NC	TAL NSH
Total/NA	Analysis	9056A		200			384059	11/03/16 21:06	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:04	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:05	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388856	11/22/16 12:06	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389090	11/22/16 19:56	LCS	TAL NSH
Total/NA	Analysis	9040C		1			383170	11/01/16 17:21	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	382169	11/01/16 18:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.01 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281492	11/29/16 21:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.01 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281281	11/29/16 18:59	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-115100-6

Date Collected: 10/28/16 09:30
Matrix: Water
Date Received: 10/29/16 09:25

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			383844	11/01/16 21:28	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:09	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:10	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388856	11/22/16 12:06	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389090	11/22/16 19:59	LCS	TAL NSH
Total/NA	Analysis	9040C		1			383170	11/01/16 17:21	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	382169	11/01/16 18:05	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			999.56 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281492	11/29/16 21:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.56 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281281	11/29/16 18:59	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	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: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-115100 Chain of Custody

Cooler Received/Opened On 10/29/2016 @ 0925

Time Samples Removed From Cooler 1136 Time Samples Placed In Storage 1210 (2 Hour Window)

1. Tracking # 6095 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 97310166 pH Strip Lot HC 682547 Chlorine Strip Lot 061316W

2. Temperature of rep. sample or temp blank when opened: 5.6 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: Two 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) PM

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) PM

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) PM

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

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
115100

COOLER RECEIPT FORM

Cooler Received/Opened On 10/29/2016 @ 0925

Time Samples Removed From Cooler 1127 Time Samples Placed In Storage PLC (2 Hour Window)

1. Tracking # 5971 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960353 pH Strip Lot HC682547 Chlorine Strip Lot 0613160W

2. Temperature of rep. sample or temp blank when opened: 1.6 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: 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) _____

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) PM

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) PM

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) PM

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

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
115100
#1
A

Cooler Received/Opened On 10/29/2016 @ 0925

Time Samples Removed From Cooler 1115 Time Samples Placed In Storage 1210 (2 Hour Window)

1. Tracking # 6154 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 97310166 pH Strip Lot HC682547 Chlorine Strip Lot 0613161W

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: Two 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) PM

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) PM

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) PM

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

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
115100
#2
A

Cooler Received/Opened On 10/29/2016 @ 0925

Time Samples Removed From Cooler 1145 Time Samples Placed In Storage 1240. (2 Hour Window)

1. Tracking # 6030 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470366 pH Strip Lot HC682547 Chlorine Strip Lot 0603166W

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

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) PN

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) PN

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) PN

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) PN

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

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: 10/28/2016**
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: GL CCR Groundwater-Round 4/2nd Semi-Annual	☐ 1 week		
Site: Green Landfill (GL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-58040-18746.2
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	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
MW-1	10/26/16	1050	G	Water	6	N	N	x	x	x	x	x	x	
MW-4	10/26/16	1515	G	Water	6	N	N	x	x	x	x	x	x	
MW-5	10/26/16	1400	G	Water	6	N	N	x	x	x	x	x	x	
MW-6	10/26/16	1225	G	Water	6	N	N	x	x	x	x	x	x	
DUPE	10/26/16	1300	G	Water	6	N	N	x	x	x	x	x	x	
FIELD BLANK	10/28/16	0930	G	Water	6	N	N	x	x	x	x	x	x	
								4	4	3	7	3	7	

Loc: 490
115100

Greg Dick

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 Chapter 45 (Kentucky Special Waste Regulations.) See attached constituent lists for analysis. Please compile two separate reports (1 report for each attached constituent list) for the CCR and Semi-Annual data results.

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: 10/28/16 1500	Received by:	Company: 10/29/16	Date/Time: 925
Relinquished by:	Company:	Date/Time:	Received by:	Company: TAN	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

1.0
1.6
5.6
3.1

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

11/30/2016

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Loc: 490
115100

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

Greg Dicke, BREC
10/28/2016, 1500

Loc: 490
115100
#1
A

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

The following constituents are also requested to be analyzed in conjunction with the constituents listed above:

-Fluoride
-Sulfate
-Antimony
-Arsenic
-Barium
-Beryllium
-Boron
-Cadmium
-Calcium
-Chromium
-Cobalt
-Lead
-Lithium
-Mercury
-Molybdenum
-Selenium
-Thallium
-Temperature

Meg Dick, BREC
10/28/2016, 1500

490-11510 Waybill

PT-WI-SR-001 effective 7/26/13

Uncorrected temp 21/19 °C

Thermometer ID 9

CF 0.5 Initials TJ

EV AGCA

MPS# 0263 7096 4972 3059

Mstr# 7096 4972 3059 0201

2 of 5

TUE - 01 NOV 10:30A

PRIORITY OVERNIGHT

15238

PIT

PA-US

FedEx Express

REF: S490-59294

(412) 963-7058

PITTSBURGH PA 152

301 ALPHA DRIVE

RIDC PARK

TESTAMERICA LABORATORIES, INC.

SHIPPING/RECEIVING

UNITED STATES US

NASHVILLE, TN 37204

2960 FOSTER CREIGHTON DR

TEST AMERICA

SHIPPING

ORIGIN ID:RNCA (615) 7

BILL RECIPIENT

SHIP DATE: 31OCT16

ACTWGT: 15.0 LB MAN

CAD: 8204251/CAFE2915

THE LEAD

ER IN ENVIRONMENTAL TESTING

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

Chain of Custody Record

490-115100 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s): 50095.1
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: 13715 Rider Trail North, .	Due Date Requested: 11/10/2016		Job #: 490-115100-1
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: GL CCR Groundwater Round 4	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)	Ra226_Ra228	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 (490-115100-1)	10/26/16	10:50 Central		Water			X	X	X	2	
MW-4 (490-115100-2)	10/26/16	15:15 Central		Water			X	X	X	2	
MW-5 (490-115100-3)	10/26/16	14:00 Central		Water			X	X	X	2	
MW-6 (490-115100-4)	10/26/16	12:25 Central		Water			X	X	X	2	
DUPE (490-115100-5)	10/26/16	13:00 Central		Water			X	X	X	2	
FIELD BLANK (490-115100-6)	10/28/16	09:30 Central		Water			X	X	X	2	

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
Relinquished by: Rafael Ca	Date/Time: 4:00 10/31/16		Received by: Qe Clark	Date/Time: 11.1.16 0915	Company: TAST
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:

11/30/2016

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

Chain of Custody Record

490-115100 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

11/30/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-50093.1
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 #: 490-115100-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 11/10/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GL CCR Groundwater Round 4	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)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-115100-1)	10/26/16	10:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-115100-2)	10/26/16	15:15 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-115100-3)	10/26/16	14:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-115100-4)	10/26/16	12:25 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-115100-5)	10/26/16	13:00 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-115100-6)	10/28/16	09:30 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 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
Rafael	10/31/16 3:45	TAN	D Thomas Day	11/1/16 850	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

11/30/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-50093.1
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 #: 490-115100-2
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 11/10/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GL CCR 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=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/3006A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-115100-1)	10/26/16	10:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-115100-2)	10/26/16	15:15 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-115100-3)	10/26/16	14:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-115100-4)	10/26/16	12:25 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-115100-5)	10/26/16	13:00 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-115100-6)	10/28/16	09:30 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:	Date/Time:	Company	Received by:	Date/Time:	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: 490-115100-1
SDG Number: Green Landfill (GL)

Login Number: 115100
List Number: 1
Creator: Ngo, Phiet

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.	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: 490-115100-1
SDG Number: Green Landfill (GL)

Login Number: 115100
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 11/01/16 01:49 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: 490-115100-1
SDG Number: Green Landfill (GL)

Login Number: 115100
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 11/01/16 03:20 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	18.0
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: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-115100-1	MW-1	88.9
490-115100-2	MW-4	91.5
490-115100-3	MW-5	88.9
490-115100-4	MW-6	87.5
490-115100-5	DUPE	90.0
490-115100-6	FIELD BLANK	97.4
LCS 160-277268/2-A	Lab Control Sample	74.4
MB 160-277268/1-A	Method Blank	86.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
160-19757-V-2-B DU	Duplicate	89.5

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-115100-1	MW-1	88.9	81.9
490-115100-2	MW-4	91.5	81.9
490-115100-3	MW-5	88.9	84.1
490-115100-4	MW-6	87.5	82.2
490-115100-5	DUPE	90.0	83.7
490-115100-6	FIELD BLANK	97.4	83.7
LCS 160-277276/2-A	Lab Control Sample	74.4	80.0
MB 160-277276/1-A	Method Blank	86.9	77.8

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
160-19757-V-2-D DU	Duplicate	89.5	85.2

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater Round 4

TestAmerica Job ID: 490-115100-1
SDG: Green Landfill (GL)

Ba = Ba Carrier
Y = 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: 490-116214-1
Client Project/Site: Green Landfill (GL) CCR Round 4 GW
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Authorized for release by:
12/23/2016 5:30:03 PM
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-116214-1	MW-2 Green LF	Water	11/14/16 12:45	11/16/16 10:25
490-116214-2	MW-3A Green LF	Water	11/14/16 13:45	11/16/16 10:25

Job ID: 490-116214-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-116214-1

Comments
No additional comments.

Receipt
The samples were received on 11/16/2016 10:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

HPLC/IC
Method 9056A: The following sample was diluted due to the nature of the sample matrix: MW-3A Green LF (490-116214-2). Elevated reporting limits (RLs) are provided.

Method 9056A: Due to sample matrix, matrix spike/ matrix spike duplicate (MS/MSD) was not analyzed with batch 490-389983. However, the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits. (LCS 490-389983/4) and (LCSD 490-389983/5)

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-389893 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.

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.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-2 Green LF

Date Collected: 11/14/16 12:45
Date Received: 11/16/16 10:25

Lab Sample ID: 490-116214-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**133**		30.0	2.00	mg/L			11/27/16 00:27	10
Fluoride	**0.328**	**J B F1**	1.00	0.0100	mg/L			11/26/16 23:33	1
Sulfate	**90.1**		50.0	0.300	mg/L			11/27/16 00:27	10

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		11/21/16 06:53	11/22/16 12:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000149**	**J B**	0.00200	0.0000213	mg/L		11/21/16 06:56	11/22/16 10:53	1
Arsenic	**0.0159**		0.00500	0.000118	mg/L		11/21/16 06:56	11/22/16 10:53	1
Barium	**0.319**		0.200	0.000270	mg/L		11/21/16 06:56	11/22/16 10:53	1
Beryllium	ND		0.00200	0.000102	mg/L		11/21/16 06:56	11/22/16 10:53	1
Boron	**0.0394**	**J**	1.00	0.00339	mg/L		11/21/16 06:56	11/22/16 20:38	1
Cadmium	ND		0.00100	0.000152	mg/L		11/21/16 06:56	11/22/16 10:53	1
Calcium	**140**	**B**	1.00	0.0412	mg/L		11/21/16 06:56	11/22/16 10:53	1
Chromium	ND		0.00300	0.000339	mg/L		11/21/16 06:56	11/22/16 10:53	1
Cobalt	**0.00307**	**J**	0.00500	0.0000218	mg/L		11/21/16 06:56	11/22/16 10:53	1
Lead	ND		0.00500	0.0000675	mg/L		11/21/16 06:56	11/22/16 10:53	1
Molybdenum	**0.00212**	**J**	0.0100	0.000873	mg/L		11/21/16 06:56	11/22/16 10:53	1
Selenium	**0.000663**	**J B**	0.0100	0.000348	mg/L		11/21/16 06:56	11/22/16 10:53	1
Thallium	ND		0.00100	0.0000360	mg/L		11/21/16 06:56	11/22/16 10:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/23/16 10:04	11/23/16 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**880**		10.0	7.00	mg/L			11/16/16 18:06	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	0.171	U	0.243	0.243	1.00	0.412	pCi/L	11/18/16 11:09	12/20/16 21:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:46*	*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	0.238	U	0.250	0.251	1.00	0.408	pCi/L	11/18/16 11:44	12/20/16 16:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:38*	*1*
Y Carrier	*87.5*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:38*	*1*

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Client Sample ID: MW-2 Green LF
Date Collected: 11/14/16 12:45
Date Received: 11/16/16 10:25

Lab Sample ID: 490-116214-1
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	0.409	U	0.349	0.350	5.00	0.412	pCi/L		12/22/16 16:15	1

Client Sample ID: MW-3A Green LF

Date Collected: 11/14/16 13:45
Date Received: 11/16/16 10:25

Lab Sample ID: 490-116214-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2150	B	600	40.0	mg/L			11/27/16 10:22	200
Fluoride	0.725	J B	1.00	0.0100	mg/L			11/27/16 01:03	1
Sulfate	1660		500	3.00	mg/L			11/27/16 10:04	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.677		0.0500	0.00959	mg/L		11/21/16 06:53	11/22/16 12:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000119	J B	0.00200	0.0000213	mg/L		11/21/16 06:56	11/22/16 10:55	1
Arsenic	0.000247	J	0.00500	0.000118	mg/L		11/21/16 06:56	11/22/16 10:55	1
Barium	0.0416	J	0.200	0.000270	mg/L		11/21/16 06:56	11/22/16 10:55	1
Beryllium	ND		0.00200	0.000102	mg/L		11/21/16 06:56	11/22/16 10:55	1
Boron	0.213	J	1.00	0.00339	mg/L		11/21/16 06:56	11/22/16 20:43	1
Cadmium	ND		0.00100	0.000152	mg/L		11/21/16 06:56	11/22/16 10:55	1
Calcium	365	B	1.00	0.0412	mg/L		11/21/16 06:56	11/22/16 10:55	1
Chromium	ND		0.00300	0.000339	mg/L		11/21/16 06:56	11/22/16 10:55	1
Cobalt	0.00126	J	0.00500	0.0000218	mg/L		11/21/16 06:56	11/22/16 10:55	1
Lead	ND		0.00500	0.0000675	mg/L		11/21/16 06:56	11/22/16 10:55	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/21/16 06:56	11/22/16 10:55	1
Selenium	0.00134	J B	0.0100	0.000348	mg/L		11/21/16 06:56	11/22/16 10:55	1
Thallium	ND		0.00100	0.0000360	mg/L		11/21/16 06:56	11/22/16 10:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/23/16 10:04	11/23/16 14:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4450		100	70.0	mg/L			11/16/16 18:06	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	0.417	U	0.342	0.344	1.00	0.515	pCi/L	11/18/16 11:09	12/20/16 21:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.8*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:47*	*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	0.729		0.317	0.324	1.00	0.448	pCi/L	11/18/16 11:44	12/20/16 16:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.8*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:38*	*1*
Y Carrier	*87.5*		*40 - 110*	*11/18/16 11:44*	*12/20/16 16:38*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Client Sample ID: MW-3A Green LF
Date Collected: 11/14/16 13:45
Date Received: 11/16/16 10:25

Lab Sample ID: 490-116214-2
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	1.15		0.467	0.473	5.00	0.515	pCi/L		12/22/16 16:15	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-389893/3
Matrix: Water
Analysis Batch: 389893

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			11/26/16 22:40	1
Fluoride	0.04526	J	1.00	0.0100	mg/L			11/26/16 22:40	1
Sulfate	ND		5.00	0.0300	mg/L			11/26/16 22:40	1

Lab Sample ID: LCS 490-389893/4
Matrix: Water
Analysis Batch: 389893

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	9.627		mg/L		96	80 - 120
Fluoride	1.00	1.031		mg/L		103	80 - 120
Sulfate	10.0	10.07		mg/L		101	80 - 120

Lab Sample ID: LCSD 490-389893/5
Matrix: Water
Analysis Batch: 389893

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	8.921		mg/L		89	80 - 120	8	20
Fluoride	1.00	0.9581	J	mg/L		96	80 - 120	7	20
Sulfate	10.0	9.408		mg/L		94	80 - 120	7	20

Lab Sample ID: 490-116214-1 MS
Matrix: Water
Analysis Batch: 389893

Client Sample ID: MW-2 Green LF
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	167	E	2.00	141.5	E 4	mg/L		-1272	80 - 120
Fluoride	0.328	J B F1	0.200	0.4853	J F1	mg/L		78	80 - 120
Sulfate	102	E	2.00	87.75	E 4	mg/L		-719	80 - 120

Lab Sample ID: 490-116214-1 MSD
Matrix: Water
Analysis Batch: 389893

Client Sample ID: MW-2 Green LF
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	167	E	2.00	136.1	E 4	mg/L		-1541	80 - 120	4	20
Fluoride	0.328	J B F1	0.200	0.4790	J F1	mg/L		75	80 - 120	1	20
Sulfate	102	E	2.00	83.31	E 4	mg/L		-941	80 - 120	5	20

Lab Sample ID: MB 490-389983/3
Matrix: Water
Analysis Batch: 389983

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4796	J	3.00	0.200	mg/L			11/27/16 07:05	1
Fluoride	ND		1.00	0.0100	mg/L			11/27/16 07:05	1
Sulfate	ND		5.00	0.0300	mg/L			11/27/16 07:05	1

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

Lab Sample ID: LCS 490-389983/4
Matrix: Water
Analysis Batch: 389983

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	9.754		mg/L		98	80 - 120
Fluoride	1.00	0.9692	J	mg/L		97	80 - 120
Sulfate	10.0	9.753		mg/L		98	80 - 120

Lab Sample ID: LCSD 490-389983/5
Matrix: Water
Analysis Batch: 389983

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	9.798		mg/L		98	80 - 120	0	20
Fluoride	1.00	0.9751	J	mg/L		98	80 - 120	1	20
Sulfate	10.0	9.829		mg/L		98	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-194978/1-A
Matrix: Water
Analysis Batch: 195246

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 194978

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		11/21/16 06:53	11/22/16 10:38	1

Lab Sample ID: LCS 180-194978/2-A
Matrix: Water
Analysis Batch: 195246

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 194978

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9949		mg/L		99	80 - 120

Lab Sample ID: 240-71034-K-3-J MS
Matrix: Water
Analysis Batch: 195246

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 194978

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	0.9765		mg/L		98	75 - 125

Lab Sample ID: 240-71034-L-3-D MSD
Matrix: Water
Analysis Batch: 195246

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 194978

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	0.9889		mg/L		99	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-194979/1-A
Matrix: Water
Analysis Batch: 195186

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 194979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001070	J	0.00200	0.0000213	mg/L		11/21/16 06:56	11/22/16 10:05	1
Arsenic	ND		0.00500	0.000118	mg/L		11/21/16 06:56	11/22/16 10:05	1
Barium	ND		0.200	0.000270	mg/L		11/21/16 06:56	11/22/16 10:05	1
Beryllium	ND		0.00200	0.000102	mg/L		11/21/16 06:56	11/22/16 10:05	1
Cadmium	ND		0.00100	0.000152	mg/L		11/21/16 06:56	11/22/16 10:05	1
Calcium	0.04555	J	1.00	0.0412	mg/L		11/21/16 06:56	11/22/16 10:05	1
Chromium	ND		0.00300	0.000339	mg/L		11/21/16 06:56	11/22/16 10:05	1
Cobalt	ND		0.00500	0.0000218	mg/L		11/21/16 06:56	11/22/16 10:05	1
Lead	ND		0.00500	0.0000675	mg/L		11/21/16 06:56	11/22/16 10:05	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/21/16 06:56	11/22/16 10:05	1
Selenium	0.0004100	J	0.0100	0.000348	mg/L		11/21/16 06:56	11/22/16 10:05	1
Thallium	ND		0.00100	0.0000360	mg/L		11/21/16 06:56	11/22/16 10:05	1

Lab Sample ID: MB 180-194979/1-A
Matrix: Water
Analysis Batch: 195262

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 194979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		11/21/16 06:56	11/22/16 20:28	1

Lab Sample ID: LCS 180-194979/2-A
Matrix: Water
Analysis Batch: 195186

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 194979

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	0.03912		mg/L		98	80 - 120
Barium	2.00	1.864		mg/L		93	80 - 120
Beryllium	0.0500	0.04388		mg/L		88	80 - 120
Cadmium	0.0500	0.05305		mg/L		106	80 - 120
Calcium	50.0	52.74		mg/L		105	80 - 120
Chromium	0.200	0.2092		mg/L		105	80 - 120
Cobalt	0.500	0.5042		mg/L		101	80 - 120
Lead	0.0200	0.01968		mg/L		98	80 - 120
Molybdenum	1.00	1.037		mg/L		104	80 - 120
Selenium	0.0100	0.01054		mg/L		105	80 - 120
Thallium	0.0500	0.04879		mg/L		98	80 - 120

Lab Sample ID: LCS 180-194979/2-A
Matrix: Water
Analysis Batch: 195262

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 194979

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.9928	J	mg/L		99	80 - 120

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

Lab Sample ID: 240-71034-K-3-I MS
Matrix: Water
Analysis Batch: 195186

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 194979

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000145	J B	0.500	0.5049		mg/L		101	75 - 125
Arsenic	0.0274		0.0400	0.06666		mg/L		98	75 - 125
Barium	0.0840	J	2.00	1.930		mg/L		92	75 - 125
Beryllium	ND		0.0500	0.04432		mg/L		89	75 - 125
Cadmium	ND		0.0500	0.05156		mg/L		103	75 - 125
Calcium	13.2	B	50.0	65.97		mg/L		106	75 - 125
Chromium	ND		0.200	0.2053		mg/L		103	75 - 125
Cobalt	0.00113	J	0.500	0.4965		mg/L		99	75 - 125
Lead	0.00151	J	0.0200	0.01923		mg/L		89	75 - 125
Molybdenum	0.00120	J	1.00	1.040		mg/L		104	75 - 125
Selenium	0.00138	J B	0.0100	0.01139		mg/L		100	75 - 125
Thallium	ND		0.0500	0.04796		mg/L		96	75 - 125

Lab Sample ID: 240-71034-L-3-C MSD
Matrix: Water
Analysis Batch: 195186

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 194979

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000145	J B	0.500	0.5323		mg/L		106	75 - 125	5	20
Arsenic	0.0274		0.0400	0.07124		mg/L		110	75 - 125	7	20
Barium	0.0840	J	2.00	2.048		mg/L		98	75 - 125	6	20
Beryllium	ND		0.0500	0.04519		mg/L		90	75 - 125	2	20
Cadmium	ND		0.0500	0.05481		mg/L		110	75 - 125	6	20
Calcium	13.2	B	50.0	69.65		mg/L		113	75 - 125	5	20
Chromium	ND		0.200	0.2149		mg/L		107	75 - 125	5	20
Cobalt	0.00113	J	0.500	0.5202		mg/L		104	75 - 125	5	20
Lead	0.00151	J	0.0200	0.02015		mg/L		93	75 - 125	5	20
Molybdenum	0.00120	J	1.00	1.097		mg/L		110	75 - 125	5	20
Selenium	0.00138	J B	0.0100	0.01088		mg/L		95	75 - 125	5	20
Thallium	ND		0.0500	0.05004		mg/L		100	75 - 125	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-389168/1-A
Matrix: Water
Analysis Batch: 389520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 389168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/23/16 10:04	11/23/16 13:34	1

Lab Sample ID: LCS 490-389168/2-A
Matrix: Water
Analysis Batch: 389520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 389168

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9520		ug/L		95	80 - 120

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

Lab Sample ID: LCSD 490-389168/3-A
Matrix: Water
Analysis Batch: 389520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 389168

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.8786		ug/L		88	80 - 120	8	20

Lab Sample ID: 490-116505-F-1-B MS
Matrix: Water
Analysis Batch: 389520

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 389168

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	0.9894		ug/L		99	75 - 125		

Lab Sample ID: 490-116505-F-1-C MSD
Matrix: Water
Analysis Batch: 389520

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 389168

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.025		ug/L		102	75 - 125	3	20

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

Lab Sample ID: MB 490-386373/1
Matrix: Water
Analysis Batch: 386373

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			11/16/16 18:06	1

Lab Sample ID: LCS 490-386373/2
Matrix: Water
Analysis Batch: 386373

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	100.0		mg/L		100	90 - 110		

Lab Sample ID: LCSD 490-386373/3
Matrix: Water
Analysis Batch: 386373

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	7	20

Lab Sample ID: 490-116036-C-1 DU
Matrix: Water
Analysis Batch: 386373

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	342			342.0		mg/L				0	20

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

Lab Sample ID: 490-116214-2 DU
Matrix: Water
Analysis Batch: 386373

Client Sample ID: MW-3A Green LF
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	4450			4590		mg/L				3	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-279961/1-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 279961

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2194	U	0.253	0.253	1.00	0.410	pCi/L	11/18/16 11:09	12/20/16 21:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.3*		*40 - 110*	*11/18/16 11:09*	*12/20/16 21:46*	*1*

Lab Sample ID: LCS 160-279961/2-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 279961

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.1	14.27		1.87	1.00	0.469	pCi/L	129	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*69.5*		*40 - 110*

Lab Sample ID: 180-60609-D-1-A DU
Matrix: Water
Analysis Batch: 284694

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 279961

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.261	U		0.1686	U	0.229	1.00	0.385	pCi/L			0.20	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*81.8*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-279988/1-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 279988

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2629	U	0.253	0.254	1.00	0.410	pCi/L	11/18/16 11:44	12/20/16 16:37	1

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

Lab Sample ID: MB 160-279988/1-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 279988

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		40 - 110	11/18/16 11:44	12/20/16 16:37	1
Y Carrier	87.1		40 - 110	11/18/16 11:44	12/20/16 16:37	1

Lab Sample ID: LCS 160-279988/2-A
Matrix: Water
Analysis Batch: 284552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 279988

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.1	17.07		1.86	1.00	0.444	pCi/L	121	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	69.5		40 - 110
Y Carrier	87.5		40 - 110

Lab Sample ID: 180-60609-D-1-B DU
Matrix: Water
Analysis Batch: 284694

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 279988

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.394			0.4203		0.267	1.00	0.400	pCi/L			0.05	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	81.8		40 - 110
Y Carrier	81.5		40 - 110

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

Lab Sample ID: 180-60609-A-1 DU
Matrix: Water
Analysis Batch: 285157

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	0.655			0.5889		0.352	5.00	0.400	pCi/L			0.1	

HPLC/IC

Analysis Batch: 389893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total/NA	Water	9056A	
490-116214-1	MW-2 Green LF	Total/NA	Water	9056A	
490-116214-2	MW-3A Green LF	Total/NA	Water	9056A	
MB 490-389893/3	Method Blank	Total/NA	Water	9056A	
LCS 490-389893/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-389893/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-116214-1 MS	MW-2 Green LF	Total/NA	Water	9056A	
490-116214-1 MSD	MW-2 Green LF	Total/NA	Water	9056A	

Analysis Batch: 389983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-2	MW-3A Green LF	Total/NA	Water	9056A	
490-116214-2	MW-3A Green LF	Total/NA	Water	9056A	
MB 490-389983/3	Method Blank	Total/NA	Water	9056A	
LCS 490-389983/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-389983/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 194978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total Recoverable	Water	3005A	
490-116214-2	MW-3A Green LF	Total Recoverable	Water	3005A	
MB 180-194978/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-194978/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-71034-K-3-J MS	Matrix Spike	Dissolved	Water	3005A	
240-71034-L-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Prep Batch: 194979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total Recoverable	Water	3005A	
490-116214-2	MW-3A Green LF	Total Recoverable	Water	3005A	
MB 180-194979/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-194979/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-71034-K-3-I MS	Matrix Spike	Dissolved	Water	3005A	
240-71034-L-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Analysis Batch: 195186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total Recoverable	Water	6020A	194979
490-116214-2	MW-3A Green LF	Total Recoverable	Water	6020A	194979
MB 180-194979/1-A	Method Blank	Total Recoverable	Water	6020A	194979
LCS 180-194979/2-A	Lab Control Sample	Total Recoverable	Water	6020A	194979
240-71034-K-3-I MS	Matrix Spike	Dissolved	Water	6020A	194979
240-71034-L-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	194979

Analysis Batch: 195246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total Recoverable	Water	6010C	194978
490-116214-2	MW-3A Green LF	Total Recoverable	Water	6010C	194978

Metals (Continued)

Analysis Batch: 195246 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-194978/1-A	Method Blank	Total Recoverable	Water	6010C	194978
LCS 180-194978/2-A	Lab Control Sample	Total Recoverable	Water	6010C	194978
240-71034-K-3-J MS	Matrix Spike	Dissolved	Water	6010C	194978
240-71034-L-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	6010C	194978

Analysis Batch: 195262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total Recoverable	Water	6020A	194979
490-116214-2	MW-3A Green LF	Total Recoverable	Water	6020A	194979
MB 180-194979/1-A	Method Blank	Total Recoverable	Water	6020A	194979
LCS 180-194979/2-A	Lab Control Sample	Total Recoverable	Water	6020A	194979

Prep Batch: 389168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total/NA	Water	7470A	
490-116214-2	MW-3A Green LF	Total/NA	Water	7470A	
MB 490-389168/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-389168/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-389168/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-116505-F-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-116505-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 389520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total/NA	Water	7470A	389168
490-116214-2	MW-3A Green LF	Total/NA	Water	7470A	389168
MB 490-389168/1-A	Method Blank	Total/NA	Water	7470A	389168
LCS 490-389168/2-A	Lab Control Sample	Total/NA	Water	7470A	389168
LCSD 490-389168/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	389168
490-116505-F-1-B MS	Matrix Spike	Total/NA	Water	7470A	389168
490-116505-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	389168

General Chemistry

Analysis Batch: 386373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total/NA	Water	SM 2540C	
490-116214-2	MW-3A Green LF	Total/NA	Water	SM 2540C	
MB 490-386373/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-386373/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-386373/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-116036-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-116214-2 DU	MW-3A Green LF	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 279961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total/NA	Water	PrecSep-21	
490-116214-2	MW-3A Green LF	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 279961 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-279961/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-279961/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-60609-D-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 279988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-116214-1	MW-2 Green LF	Total/NA	Water	PrecSep_0	
490-116214-2	MW-3A Green LF	Total/NA	Water	PrecSep_0	
MB 160-279988/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-279988/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-60609-D-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Client Sample ID: MW-2 Green LF

Date Collected: 11/14/16 12:45
Date Received: 11/16/16 10:25

Lab Sample ID: 490-116214-1
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	10 mL	1.0 mL	389893	11/26/16 23:33	KS	TAL NSH
Total/NA	Analysis	9056A		10	10 mL	1.0 mL	389893	11/27/16 00:27	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	194978	11/21/16 06:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			195246	11/22/16 12:20	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	194979	11/21/16 06:56	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			195186	11/22/16 10:53	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	194979	11/21/16 06:56	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	195262	11/22/16 20:38	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	389168	11/23/16 10:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389520	11/23/16 13:59	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	386373	11/16/16 18:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.44 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	903.0		1			284552	12/20/16 21:46	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.44 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	904.0		1			284552	12/20/16 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285157	12/22/16 16:15	CAH	TAL SL

Client Sample ID: MW-3A Green LF

Date Collected: 11/14/16 13:45
Date Received: 11/16/16 10:25

Lab Sample ID: 490-116214-2
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	10 mL	1.0 mL	389893	11/27/16 01:03	KS	TAL NSH
Total/NA	Analysis	9056A		100			389983	11/27/16 10:04	LDC	TAL NSH
Total/NA	Analysis	9056A		200			389983	11/27/16 10:22	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	194978	11/21/16 06:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			195246	11/22/16 12:25	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	194979	11/21/16 06:56	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			195186	11/22/16 10:55	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	194979	11/21/16 06:56	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	195262	11/22/16 20:43	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	389168	11/23/16 10:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			389520	11/23/16 14:01	LCS	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	386373	11/16/16 18:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.56 mL	1.0 g	279961	11/18/16 11:09	AS	TAL SL
Total/NA	Analysis	903.0		1			284552	12/20/16 21:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.56 mL	1.0 g	279988	11/18/16 11:44	AS	TAL SL
Total/NA	Analysis	904.0		1			284552	12/20/16 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			285157	12/22/16 16:15	CAH	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

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: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16 *
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16 *
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-116214 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 11/16/2016 @ 1025 EF 11-16-16

Time Samples Removed From Cooler 1452 (Plastic 15) Time Samples Placed In Storage 1515 (2 Hour Window)

1. Tracking # 5916 (last 4 digits, FedEx) Courier: ____FedEx_____

IR Gun ID__17960353__ pH Strip Lot HC689794 Chlorine Strip Lot 08116K

2. Temperature of rep. sample or temp blank when opened: 2.2 *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) _____

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) mpm

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) mpm

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

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
116214

Chain of Custody Record

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

12/23/2016

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: 11/15/2016**
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: GL CCR Groundwater-Round 4/2nd Semi-Annual	☐ 1 week		
Site: Green Landfill (GL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-58040-18746.2
__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	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28	9060A - TOC	2540C_Calcd - TDS		Sample Specific Notes:
MW-2	11/14/16	1245	G	Water	6	N	N	x	x	x	x	x	x	1	
MW-3A	11/14/16	1345	G	Water	6	N	N	x	x	x	x	x	x	2	sample bottles labeled MW-3 are same as MW-3A
								4	4	3	7	3	7		

Greg Dick

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 Chapter 45 (Kentucky Special Waste Regulations.) See attached constituent lists for analysis. Please compile two separate reports (1 report for each attached constituent list) for the CCR and Semi-Annual data results, and include with samples indicated from 10/28/2016 Chain of Custody (COC).

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: 1130 11/15/2016	Received by:	Company: TAN	Date/Time: 11-16-16 @ 1025	2.2c
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:	

Loc: 490
116214

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

Greg Dick, BREC
11/15/2016 1130

490-116214

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

The following constituents are also requested to be analyzed in conjunction with the constituents listed above:

-Fluoride
-Sulfate
-Antimony
-Arsenic
-Barium
-Beryllium
-Boron
-Cadmium
-Calcium
-Chromium
-Cobalt
-Lead
-Lithium
-Mercury
-Molybdenum
-Selenium
-Thallium
-Temperature

Mary Dick, BREC
11/15/2016 1130



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Part # 159470-434 RIT EXP 05/17

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 16NOV16
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: S490-59995

FedEx Express

TRK# 0201 7130 7237 9310

THU - 17 NOV 10:30A
PRIORITY OVERNIGHT

EV AGCA

15238

Uncorrected temp 1.4/0.9 °C
Thermometer ID 9
CF 0.5 Initials JS

PT-WI-SR-001 effective 7/26/13

490-116214 Waybill

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

Chain of Custody Record

490-116214 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-51011.1
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 #: 490-116214-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/29/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Landfill (GL) CCR Round 4 GW	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)	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-2 Green LF (490-116214-1)	11/14/16	12:45 Central		Water			X	X	X	2	
MW-3A Green LF (490-116214-2)	11/14/16	13:45 Central		Water			X	X	X	2	

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: 11/16/16 5:30pm	Company: TAN	Received by:	Date/Time: 11.17.16 0910	Company: TAST
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

490-116214 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	010.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State of Origin: Kentucky / Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-116214-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 11/29/2016		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Green Landfill (GL) CCR Round 4 GW	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)	6020A/3006A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-2 Green LF (490-116214-1)	11/14/16	12:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-3A Green LF (490-116214-2)	11/14/16	13:45 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: 5:30pm 11/16/16	Company: TAN	Received by:
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Date/Time:	Company	Date/Time:	Company
Date/Time:	Company	Date/Time:	Company
Date/Time:	Company	Date/Time:	Company

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

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12/23/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-116214-1

Login Number: 116214
List Number: 1
Creator: McBride, Mike

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: 490-116214-1

Login Number: 116214
List Number: 2
Creator: Kovitch, Christina M

List Source: TestAmerica Pittsburgh
List Creation: 11/17/16 02:56 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: 490-116214-1

Login Number: 116214
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 11/17/16 09:51 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.	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	1.1
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: Green Landfill (GL) CCR Round 4 GW

TestAmerica Job ID: 490-116214-1

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
180-60609-D-1-A DU	Duplicate	81.8
490-116214-1	MW-2 Green LF	80.1
490-116214-2	MW-3A Green LF	71.8
LCS 160-279961/2-A	Lab Control Sample	69.5
MB 160-279961/1-A	Method Blank	84.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
180-60609-D-1-B DU	Duplicate	81.8	81.5
490-116214-1	MW-2 Green LF	80.1	87.5
490-116214-2	MW-3A Green LF	71.8	87.5
LCS 160-279988/2-A	Lab Control Sample	69.5	87.5
MB 160-279988/1-A	Method Blank	84.3	87.1

Tracer/Carrier Legend

Ba = Ba Carrier

Y = 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: 490-121298-1
TestAmerica Sample Delivery Group: Green Landfill (GL)
Client Project/Site: Green Landfill CCR Groundwater Rd 5
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
3/10/2017 4:54:33 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-121298-1	MW-1	Water	02/01/17 09:35	02/03/17 10:20
490-121298-2	MW-2	Water	02/01/17 14:10	02/03/17 10:20
490-121298-3	MW-3A	Water	02/01/17 13:25	02/03/17 10:20
490-121298-4	MW-4	Water	02/01/17 12:35	02/03/17 10:20
490-121298-5	MW-5	Water	02/01/17 11:35	02/03/17 10:20
490-121298-6	MW-6	Water	02/01/17 10:45	02/03/17 10:20
490-121298-7	DUPE	Water	02/01/17 10:55	02/03/17 10:20
490-121298-8	FIELD BLANK	Water	02/01/17 15:05	02/03/17 10:20

Job ID: 490-121298-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-121298-1

Comments
No additional comments.

Receipt
The samples were received on 2/3/2017 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.4º C, 0.5º C, 1.1º C and 1.6º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-410558 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-410832 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 method blank for analytical batch 490-410983 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 490-410983 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: Due to the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed for 490-410983. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits. (LCS 490-410983/4) and (LCSD 490-410983/5)

Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-2 (490-121298-2), MW-3A (490-121298-3), MW-4 (490-121298-4), MW-5 (490-121298-5), MW-6 (490-121298-6) and DUPE (490-121298-7). 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
Method(s) 7470A: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 490-410844 recovered outside control limits for the following analytes: Mercury. LCS/LCSD passed within acceptable limits

No additional analytical or quality issues were noted, other than those described above or 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.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-1

Date Collected: 02/01/17 09:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.56**	**B F1**	3.00	0.200	mg/L			02/28/17 03:00	1
Fluoride	**0.532**	**J F1**	1.00	0.0100	mg/L			02/28/17 03:00	1
Sulfate	**28.4**		5.00	0.0300	mg/L			02/28/17 03:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0342**	**J**	0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 09:48	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		03/07/17 14:45	03/09/17 21:32	1
Arsenic	**0.000539**	**J**	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 21:32	1
Barium	**0.0793**	**J**	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 21:32	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 21:32	1
Boron	**1.71**	**B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 21:32	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 21:32	1
Calcium	**20.8**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 21:32	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 21:32	1
Cobalt	**0.000793**	**J**	0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 21:32	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 21:32	1
Molybdenum	**0.00183**	**J**	0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 21:32	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 21:32	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 21:32	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 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.18**		0.100	0.100	SU			02/06/17 19:30	1
Temperature	**15.9**		0.100	0.100	Degrees C			02/06/17 19:30	1
Total Dissolved Solids	**605**		10.0	7.00	mg/L			02/03/17 19:49	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	**0.305**		0.154	0.157	1.00	0.178	pCi/L	02/08/17 16:03	03/02/17 05:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.8*		*40 - 110*	*02/08/17 16:03*	*03/02/17 05:59*	*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	**0.389**		0.249	0.252	1.00	0.382	pCi/L	02/08/17 15:48	02/28/17 14:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.8*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:39*	*1*

Client Sample ID: MW-1
Date Collected: 02/01/17 09:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.7		40 - 110	02/08/17 15:48	02/28/17 14:39	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	0.694		0.293	0.297	5.00	0.382	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-2

Date Collected: 02/01/17 14:10
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**142**	**B**	30.0	2.00	mg/L			02/28/17 11:16	10
Fluoride	**0.211**	**J**	1.00	0.0100	mg/L			02/28/17 04:09	1
Sulfate	**89.8**		50.0	0.300	mg/L			02/28/17 11:16	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0113**	**J**	0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 09:59	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		03/07/17 14:45	03/09/17 21:37	1
Arsenic	**0.0462**		0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 21:37	1
Barium	**0.347**		0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 21:37	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 21:37	1
Boron	**0.0448**	**J B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 21:37	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 21:37	1
Calcium	**126**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 21:37	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 21:37	1
Cobalt	**0.000622**	**J**	0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 21:37	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 21:37	1
Molybdenum	**0.00281**	**J**	0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 21:37	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 21:37	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 21:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/27/17 08:05	02/27/17 14:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.62**		0.100	0.100	SU			02/06/17 19:30	1
Temperature	**17.3**		0.100	0.100	Degrees C			02/06/17 19:30	1
Total Dissolved Solids	**862**		10.0	7.00	mg/L			02/03/17 19:49	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	**0.472**		0.179	0.184	1.00	0.187	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	**0.384**		0.228	0.231	1.00	0.345	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: MW-2
Date Collected: 02/01/17 14:10
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	02/08/17 15:48	02/28/17 14:40	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	0.856		0.290	0.295	5.00	0.345	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-3A

Date Collected: 02/01/17 13:25
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2220**	**B**	300	20.0	mg/L			02/28/17 11:50	100
Fluoride	**0.0293**	**J**	1.00	0.0100	mg/L			02/28/17 04:43	1
Sulfate	**1080**		500	3.00	mg/L			02/28/17 11:50	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.689**		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 10:04	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		03/07/17 14:45	03/09/17 21:59	1
Arsenic	**0.000569**	**J**	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 21:59	1
Barium	**0.0469**	**J**	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 21:59	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 21:59	1
Boron	**0.235**	**J B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 21:59	1
Cadmium	**0.000247**	**J**	0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 21:59	1
Calcium	**327**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 21:59	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 21:59	1
Cobalt	**0.00218**	**J**	0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 21:59	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 21:59	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 21:59	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 21:59	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 21:59	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 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.08**		0.100	0.100	SU			02/08/17 15:37	1
Temperature	**20.2**		0.100	0.100	Degrees C			02/08/17 15:37	1
Total Dissolved Solids	**4270**		100	70.0	mg/L			02/03/17 19:49	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	**0.489**		0.185	0.190	1.00	0.199	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	**0.658**		0.249	0.256	1.00	0.337	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.9*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: MW-3A
Date Collected: 02/01/17 13:25
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-3
Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*93.5*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*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	**1.15**		0.310	0.319	5.00	0.337	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-4

Date Collected: 02/01/17 12:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1420**	**B**	300	20.0	mg/L			02/28/17 12:24	100
Fluoride	**0.416**	**J**	1.00	0.0100	mg/L			02/28/17 05:17	1
Sulfate	**1620**		500	3.00	mg/L			02/28/17 12:24	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**1.35**		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 10:09	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		03/07/17 14:45	03/09/17 22:04	1
Arsenic	**0.000805**	**J**	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 22:04	1
Barium	**0.0313**	**J**	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 22:04	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 22:04	1
Boron	**1.54**	**B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 22:04	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 22:04	1
Calcium	**591**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 22:04	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 22:04	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 22:04	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 22:04	1
Molybdenum	**0.00117**	**J**	0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 22:04	1
Selenium	**0.00316**	**J**	0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 22:04	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 22:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.302**		0.200	0.100	ug/L		02/27/17 08:05	02/27/17 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.69**		0.100	0.100	SU			02/06/17 19:30	1
Temperature	**16.8**		0.100	0.100	Degrees C			02/06/17 19:30	1
Total Dissolved Solids	**4420**		40.0	28.0	mg/L			02/03/17 19:49	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	**0.282**		0.141	0.144	1.00	0.163	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	**0.938**		0.277	0.290	1.00	0.353	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: MW-4
Date Collected: 02/01/17 12:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.0		40 - 110	02/08/17 15:48	02/28/17 14:40	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	1.22		0.311	0.323	5.00	0.353	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-5

Date Collected: 02/01/17 11:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**734**	**B**	300	20.0	mg/L			02/28/17 13:15	100
Fluoride	**0.216**	**J**	5.00	0.0500	mg/L			02/28/17 12:58	5
Sulfate	**1880**		500	3.00	mg/L			02/28/17 13:15	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.368**		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 10:15	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		03/07/17 14:45	03/09/17 22:09	1
Arsenic	**0.000519**	**J**	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 22:09	1
Barium	**0.0162**	**J**	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 22:09	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 22:09	1
Boron	**0.222**	**J B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 22:09	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 22:09	1
Calcium	**335**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 22:09	1
Chromium	**0.000793**	**J**	0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 22:09	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 22:09	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 22:09	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 22:09	1
Selenium	**0.000384**	**J**	0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 22:09	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 22:09	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 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.68**		0.100	0.100	SU			02/06/17 19:30	1
Temperature	**14.8**		0.100	0.100	Degrees C			02/06/17 19:30	1
Total Dissolved Solids	**3680**		40.0	28.0	mg/L			02/03/17 19:49	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	0.177	U	0.134	0.135	1.00	0.193	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	**0.588**		0.256	0.261	1.00	0.360	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: MW-5
Date Collected: 02/01/17 11:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.9		40 - 110	02/08/17 15:48	02/28/17 14:40	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	0.765		0.289	0.294	5.00	0.360	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-6

Date Collected: 02/01/17 10:45
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**125**	**B**	30.0	2.00	mg/L			02/28/17 14:06	10
Fluoride	**0.140**	**J**	1.00	0.0100	mg/L			02/28/17 06:59	1
Sulfate	**2700**		500	3.00	mg/L			02/28/17 14:23	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0607**		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 10:31	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		03/07/17 14:45	03/09/17 22:14	1
Arsenic	**0.000553**	**J**	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 22:14	1
Barium	**0.0104**	**J**	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 22:14	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 22:14	1
Boron	**0.173**	**J B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 22:14	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 22:14	1
Calcium	**320**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 22:14	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 22:14	1
Cobalt	**0.000131**	**J**	0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 22:14	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 22:14	1
Molybdenum	**0.00212**	**J**	0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 22:14	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 22:14	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 22:14	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 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.54**		0.100	0.100	SU			02/06/17 19:30	1
Temperature	**15.2**		0.100	0.100	Degrees C			02/06/17 19:30	1
Total Dissolved Solids	**4720**		40.0	28.0	mg/L			02/03/17 19:49	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	0.0507	U	0.0983	0.0984	1.00	0.176	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	0.148	U	0.208	0.209	1.00	0.349	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: MW-6
Date Collected: 02/01/17 10:45
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-6
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*91.2*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*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	0.198	U	0.230	0.231	5.00	0.349	pCi/L		03/03/17 12:21	1

Client Sample ID: DUPE

Date Collected: 02/01/17 10:55
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**115**	**J B**	300	20.0	mg/L			02/28/17 14:40	100
Fluoride	**0.142**	**J**	1.00	0.0100	mg/L			02/28/17 07:34	1
Sulfate	**2670**		500	3.00	mg/L			02/28/17 14:40	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0599**		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 10:36	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		03/07/17 14:45	03/09/17 22:19	1
Arsenic	**0.000656**	**J**	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 22:19	1
Barium	**0.0107**	**J**	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 22:19	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 22:19	1
Boron	**0.171**	**J B**	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 22:19	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 22:19	1
Calcium	**321**		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 22:19	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 22:19	1
Cobalt	**0.0000420**	**J**	0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 22:19	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 22:19	1
Molybdenum	**0.00188**	**J**	0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 22:19	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 22:19	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 22:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/27/17 08:05	02/27/17 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.50**		0.100	0.100	SU			02/06/17 19:46	1
Temperature	**19.9**		0.100	0.100	Degrees C			02/08/17 15:37	1
Total Dissolved Solids	**4540**		40.0	28.0	mg/L			02/03/17 19:49	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	0.0929	U	0.116	0.116	1.00	0.191	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	0.149	U	0.208	0.208	1.00	0.348	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: DUPE

Date Collected: 02/01/17 10:55
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-7

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*91.6*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*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	0.242	U	0.238	0.239	5.00	0.348	pCi/L		03/03/17 12:21	1

Client Sample ID: FIELD BLANK

Date Collected: 02/01/17 15:05
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.327**	**J B**	3.00	0.200	mg/L			02/26/17 03:10	1
Fluoride	ND		1.00	0.0100	mg/L			02/26/17 03:10	1
Sulfate	ND		5.00	0.0300	mg/L			02/26/17 03:10	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		03/07/17 14:47	03/08/17 10:42	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		03/07/17 14:45	03/09/17 22:24	1
Arsenic	ND		0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 22:24	1
Barium	ND		0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 22:24	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 22:24	1
Boron	ND		1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 22:24	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 22:24	1
Calcium	ND		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 22:24	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 22:24	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 22:24	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 22:24	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 22:24	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 22:24	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 22:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/28/17 08:40	02/28/17 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.10**		0.100	0.100	SU			02/06/17 19:46	1
Temperature	**20.8**		0.100	0.100	Degrees C			02/08/17 15:37	1
Total Dissolved Solids	**7.00**	**J**	10.0	7.00	mg/L			02/03/17 19:49	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	-0.0223	U	0.0787	0.0787	1.00	0.178	pCi/L	02/08/17 16:03	03/02/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*02/08/17 16:03*	*03/02/17 06:00*	*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	0.175	U	0.198	0.199	1.00	0.325	pCi/L	02/08/17 15:48	02/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:40*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 02/01/17 15:05
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-8
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.9		40 - 110	02/08/17 15:48	02/28/17 14:40	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	0.152	U	0.213	0.214	5.00	0.325	pCi/L		03/03/17 12:21	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-410558/3
Matrix: Water
Analysis Batch: 410558

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4997	J	3.00	0.200	mg/L			02/26/17 02:16	1
Fluoride	ND		1.00	0.0100	mg/L			02/26/17 02:16	1
Sulfate	ND		5.00	0.0300	mg/L			02/26/17 02:16	1

Lab Sample ID: LCS 490-410558/4
Matrix: Water
Analysis Batch: 410558

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	9.204		mg/L		92	80 - 120
Fluoride	1.00	0.8958	J	mg/L		90	80 - 120
Sulfate	10.0	9.041		mg/L		90	80 - 120

Lab Sample ID: LCSD 490-410558/5
Matrix: Water
Analysis Batch: 410558

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	9.155		mg/L		92	80 - 120	1	20
Fluoride	1.00	0.8882	J	mg/L		89	80 - 120	1	20
Sulfate	10.0	8.965		mg/L		90	80 - 120	1	20

Lab Sample ID: 490-121298-8 MS
Matrix: Water
Analysis Batch: 410558

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	0.327	J B	2.00	2.095	J	mg/L		88	80 - 120
Fluoride	ND		0.200	0.1960	J	mg/L		98	80 - 120
Sulfate	ND		2.00	2.064	J	mg/L		103	80 - 120

Lab Sample ID: 490-121298-8 MSD
Matrix: Water
Analysis Batch: 410558

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	0.327	J B	2.00	2.155	J	mg/L		91	80 - 120	3	20
Fluoride	ND		0.200	0.2003	J	mg/L		100	80 - 120	2	20
Sulfate	ND		2.00	2.060	J	mg/L		103	80 - 120	0	20

Lab Sample ID: MB 490-410832/3
Matrix: Water
Analysis Batch: 410832

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2344	J	3.00	0.200	mg/L			02/28/17 02:09	1
Fluoride	ND		1.00	0.0100	mg/L			02/28/17 02:09	1
Sulfate	ND		5.00	0.0300	mg/L			02/28/17 02:09	1

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

Lab Sample ID: LCS 490-410832/4
Matrix: Water
Analysis Batch: 410832

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	9.620		mg/L		96	80 - 120
Fluoride	1.00	0.9885	J	mg/L		99	80 - 120
Sulfate	10.0	9.710		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-410832/5
Matrix: Water
Analysis Batch: 410832

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	9.644		mg/L		96	80 - 120	0	20
Fluoride	1.00	0.9852	J	mg/L		99	80 - 120	0	20
Sulfate	10.0	9.653		mg/L		97	80 - 120	1	20

Lab Sample ID: 490-121298-1 MS
Matrix: Water
Analysis Batch: 410832

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	5.56	B F1	2.00	6.243	F1	mg/L		34	80 - 120
Fluoride	0.532	J F1	0.200	0.6286	J F1	mg/L		49	80 - 120
Sulfate	28.4		2.00	24.63	4	mg/L		-186	80 - 120

Lab Sample ID: 490-121298-1 MSD
Matrix: Water
Analysis Batch: 410832

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	5.56	B F1	2.00	6.232	F1	mg/L		34	80 - 120	0	20
Fluoride	0.532	J F1	0.200	0.6317	J F1	mg/L		50	80 - 120	0	20
Sulfate	28.4		2.00	24.57	4	mg/L		-189	80 - 120	0	20

Lab Sample ID: MB 490-410983/3
Matrix: Water
Analysis Batch: 410983

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2194	J	3.00	0.200	mg/L			02/28/17 10:24	1
Fluoride	ND		1.00	0.0100	mg/L			02/28/17 10:24	1
Sulfate	ND		5.00	0.0300	mg/L			02/28/17 10:24	1

Lab Sample ID: LCS 490-410983/4
Matrix: Water
Analysis Batch: 410983

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	9.648		mg/L		96	80 - 120
Fluoride	1.00	0.9810	J	mg/L		98	80 - 120
Sulfate	10.0	9.701		mg/L		97	80 - 120

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

Lab Sample ID: LCSD 490-410983/5
Matrix: Water
Analysis Batch: 410983

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	9.956		mg/L		100	80 - 120	3	20
Fluoride	1.00	0.9901	J	mg/L		99	80 - 120	1	20
Sulfate	10.0	9.776		mg/L		98	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-204857/1-A
Matrix: Water
Analysis Batch: 204950

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 09:32	1

Lab Sample ID: LCS 180-204857/2-A
Matrix: Water
Analysis Batch: 204950

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 204857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.000		mg/L		100	80 - 120

Lab Sample ID: LCSD 180-204857/3-A
Matrix: Water
Analysis Batch: 204950

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 204857

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.008		mg/L		101	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-204855/1-A
Matrix: Water
Analysis Batch: 205185

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204855

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/07/17 14:45	03/09/17 21:16	1
Arsenic	ND		0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 21:16	1
Barium	ND		0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 21:16	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 21:16	1
Boron	0.009818	J	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 21:16	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 21:16	1
Calcium	ND		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 21:16	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 21:16	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 21:16	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 21:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 21:16	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 21:16	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 21:16	1

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

Lab Sample ID: LCS 180-204855/2-A
Matrix: Water
Analysis Batch: 205185

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 204855

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5256		mg/L		105	80 - 120
Arsenic	0.0400	0.03971		mg/L		99	80 - 120
Barium	2.00	1.974		mg/L		99	80 - 120
Beryllium	0.0500	0.04796		mg/L		96	80 - 120
Boron	1.00	0.9618	J	mg/L		96	80 - 120
Cadmium	0.0500	0.05485		mg/L		110	80 - 120
Calcium	50.0	56.93		mg/L		114	80 - 120
Chromium	0.200	0.1689		mg/L		84	80 - 120
Cobalt	0.500	0.4158		mg/L		83	80 - 120
Lead	0.0200	0.02118		mg/L		106	80 - 120
Molybdenum	1.00	1.089		mg/L		109	80 - 120
Selenium	0.0100	0.008404	J	mg/L		84	80 - 120
Thallium	0.0500	0.05204		mg/L		104	80 - 120

Lab Sample ID: LCSD 180-204855/3-A
Matrix: Water
Analysis Batch: 205185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 204855

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5900		mg/L		118	80 - 120	12	20
Arsenic	0.0400	0.04094		mg/L		102	80 - 120	3	20
Barium	2.00	2.029		mg/L		101	80 - 120	3	20
Beryllium	0.0500	0.04922		mg/L		98	80 - 120	3	20
Boron	1.00	0.9915	J	mg/L		99	80 - 120	3	20
Cadmium	0.0500	0.05606		mg/L		112	80 - 120	2	20
Calcium	50.0	60.13		mg/L		120	80 - 120	5	20
Chromium	0.200	0.1730		mg/L		87	80 - 120	2	20
Cobalt	0.500	0.4249		mg/L		85	80 - 120	2	20
Lead	0.0200	0.02165		mg/L		108	80 - 120	2	20
Molybdenum	1.00	1.187		mg/L		119	80 - 120	9	20
Selenium	0.0100	0.01008		mg/L		101	80 - 120	18	20
Thallium	0.0500	0.05425		mg/L		109	80 - 120	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-410568/1-A
Matrix: Water
Analysis Batch: 410819

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 410568

Analyte	MB Result	MB 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 14:09	1

Lab Sample ID: LCS 490-410568/2-A
Matrix: Water
Analysis Batch: 410819

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 410568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9520		ug/L		95	80 - 120

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

Lab Sample ID: LCSD 490-410568/24-A
Matrix: Water
Analysis Batch: 410819

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 410568

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.9592		ug/L		96	80 - 120	1	20

Lab Sample ID: 490-121298-2 MS
Matrix: Water
Analysis Batch: 410819

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 410568

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	1.030		ug/L		103	75 - 125		

Lab Sample ID: 490-121298-2 MSD
Matrix: Water
Analysis Batch: 410819

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 410568

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9392		ug/L		94	75 - 125	9	20

Method: 9040C - pH

Lab Sample ID: LCS 490-406039/12
Matrix: Water
Analysis Batch: 406039

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	6.860		SU		98	98 - 103		

Lab Sample ID: 490-121287-F-1 DU
Matrix: Water
Analysis Batch: 406039

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	1.85			1.850		SU				0	20
Temperature	15.7			15.70		Degrees C				0	20

Lab Sample ID: LCS 490-406040/4
Matrix: Water
Analysis Batch: 406040

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: 490-121298-7 DU
Matrix: Water
Analysis Batch: 406040

Client Sample ID: DUPE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.50			6.500		SU				7	20

Method: 9040C - pH (Continued)

Lab Sample ID: LCS 490-406592/1
Matrix: Water
Analysis Batch: 406592

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: 490-121480-A-1 DU
Matrix: Water
Analysis Batch: 406592

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	3.42			3.420		SU				0	20
Temperature	20.6			20.60		Degrees C				0	20

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

Lab Sample ID: MB 490-405167/1
Matrix: Water
Analysis Batch: 405167

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			02/03/17 19:49	1

Lab Sample ID: LCS 490-405167/2
Matrix: Water
Analysis Batch: 405167

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: 490-121260-B-1 DU
Matrix: Water
Analysis Batch: 405167

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	269			273.0		mg/L				1	20

Lab Sample ID: 490-121306-C-4 DU
Matrix: Water
Analysis Batch: 405167

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	955			961.0		mg/L				0.6	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-291577/1-A
Matrix: Water
Analysis Batch: 295372

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291577

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04001	U	0.101	0.101	1.00	0.185	pCi/L	02/08/17 16:03	03/02/17 05:58	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110	02/08/17 16:03	03/02/17 05:58	1

Lab Sample ID: LCS 160-291577/2-A
Matrix: Water
Analysis Batch: 295372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291577

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	10.35		1.19	1.00	0.185	pCi/L	92	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.3		40 - 110

Lab Sample ID: 490-121299-A-1-C MS
Matrix: Water
Analysis Batch: 295361

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 291577

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	2.47		11.3	13.52		1.53	1.00	0.219	pCi/L	98	75 - 138		

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	92.3		40 - 110

Lab Sample ID: 490-121299-B-1-F MSD
Matrix: Water
Analysis Batch: 295361

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 291577

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	2.47		11.3	12.90		1.46	1.00	0.218	pCi/L	93	75 - 138	0.21	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	94.1		40 - 110

Lab Sample ID: 490-121092-G-1-F DU
Matrix: Water
Analysis Batch: 295372

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 291577

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.295			0.4916		0.205	1.00	0.220	pCi/L			0.53	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	86.4		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-291569/1-A
Matrix: Water
Analysis Batch: 294970

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291569

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.01397	U	0.184	0.184	1.00	0.330	pCi/L	02/08/17 15:48	02/28/17 14:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:41*	*1*
Y Carrier	*89.7*		*40 - 110*	*02/08/17 15:48*	*02/28/17 14:41*	*1*

Lab Sample ID: LCS 160-291569/2-A
Matrix: Water
Analysis Batch: 294970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291569

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.8	13.32		1.43	1.00	0.335	pCi/L	97	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.3*		*40 - 110*
Y Carrier	*95.3*		*40 - 110*

Lab Sample ID: 490-121299-A-1-B MS
Matrix: Water
Analysis Batch: 294971

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 291569

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.962		13.8	16.79		1.79	1.00	0.422	pCi/L	115	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*92.3*		*40 - 110*
Y Carrier	*84.5*		*40 - 110*

Lab Sample ID: 490-121299-B-1-D MSD
Matrix: Water
Analysis Batch: 294971

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 291569

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	0.962		13.8	14.03		1.50	1.00	0.328	pCi/L	95	45 - 150	0.84	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.1*		*40 - 110*
Y Carrier	*94.2*		*40 - 110*

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

Lab Sample ID: 490-121092-G-1-D DU
Matrix: Water
Analysis Batch: 294971

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 291569

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.986			0.8656		0.316	1.00	0.418	pCi/L			0.19	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*86.4*		*40 - 110*
Y Carrier	*90.8*		*40 - 110*

HPLC/IC

Analysis Batch: 410558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-8	FIELD BLANK	Total/NA	Water	9056A	
MB 490-410558/3	Method Blank	Total/NA	Water	9056A	
LCS 490-410558/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-410558/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-121298-8 MS	FIELD BLANK	Total/NA	Water	9056A	
490-121298-8 MSD	FIELD BLANK	Total/NA	Water	9056A	

Analysis Batch: 410832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	9056A	
490-121298-2	MW-2	Total/NA	Water	9056A	
490-121298-3	MW-3A	Total/NA	Water	9056A	
490-121298-4	MW-4	Total/NA	Water	9056A	
490-121298-6	MW-6	Total/NA	Water	9056A	
490-121298-7	DUPE	Total/NA	Water	9056A	
MB 490-410832/3	Method Blank	Total/NA	Water	9056A	
LCS 490-410832/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-410832/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-121298-1 MS	MW-1	Total/NA	Water	9056A	
490-121298-1 MSD	MW-1	Total/NA	Water	9056A	

Analysis Batch: 410983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-2	MW-2	Total/NA	Water	9056A	
490-121298-3	MW-3A	Total/NA	Water	9056A	
490-121298-4	MW-4	Total/NA	Water	9056A	
490-121298-5	MW-5	Total/NA	Water	9056A	
490-121298-5	MW-5	Total/NA	Water	9056A	
490-121298-6	MW-6	Total/NA	Water	9056A	
490-121298-6	MW-6	Total/NA	Water	9056A	
490-121298-7	DUPE	Total/NA	Water	9056A	
MB 490-410983/3	Method Blank	Total/NA	Water	9056A	
LCS 490-410983/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-410983/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 204855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total Recoverable	Water	3005A	
490-121298-2	MW-2	Total Recoverable	Water	3005A	
490-121298-3	MW-3A	Total Recoverable	Water	3005A	
490-121298-4	MW-4	Total Recoverable	Water	3005A	
490-121298-5	MW-5	Total Recoverable	Water	3005A	
490-121298-6	MW-6	Total Recoverable	Water	3005A	
490-121298-7	DUPE	Total Recoverable	Water	3005A	
490-121298-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-204855/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-204855/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-204855/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 204857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total Recoverable	Water	3005A	
490-121298-2	MW-2	Total Recoverable	Water	3005A	
490-121298-3	MW-3A	Total Recoverable	Water	3005A	
490-121298-4	MW-4	Total Recoverable	Water	3005A	
490-121298-5	MW-5	Total Recoverable	Water	3005A	
490-121298-6	MW-6	Total Recoverable	Water	3005A	
490-121298-7	DUPE	Total Recoverable	Water	3005A	
490-121298-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-204857/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-204857/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-204857/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 204950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total Recoverable	Water	6010C	204857
490-121298-2	MW-2	Total Recoverable	Water	6010C	204857
490-121298-3	MW-3A	Total Recoverable	Water	6010C	204857
490-121298-4	MW-4	Total Recoverable	Water	6010C	204857
490-121298-5	MW-5	Total Recoverable	Water	6010C	204857
490-121298-6	MW-6	Total Recoverable	Water	6010C	204857
490-121298-7	DUPE	Total Recoverable	Water	6010C	204857
490-121298-8	FIELD BLANK	Total Recoverable	Water	6010C	204857
MB 180-204857/1-A	Method Blank	Total Recoverable	Water	6010C	204857
LCS 180-204857/2-A	Lab Control Sample	Total Recoverable	Water	6010C	204857
LCSD 180-204857/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	204857

Analysis Batch: 205185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total Recoverable	Water	6020A	204855
490-121298-2	MW-2	Total Recoverable	Water	6020A	204855
490-121298-3	MW-3A	Total Recoverable	Water	6020A	204855
490-121298-4	MW-4	Total Recoverable	Water	6020A	204855
490-121298-5	MW-5	Total Recoverable	Water	6020A	204855
490-121298-6	MW-6	Total Recoverable	Water	6020A	204855
490-121298-7	DUPE	Total Recoverable	Water	6020A	204855
490-121298-8	FIELD BLANK	Total Recoverable	Water	6020A	204855
MB 180-204855/1-A	Method Blank	Total Recoverable	Water	6020A	204855
LCS 180-204855/2-A	Lab Control Sample	Total Recoverable	Water	6020A	204855
LCSD 180-204855/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	204855

Prep Batch: 410568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	7470A	
490-121298-2	MW-2	Total/NA	Water	7470A	
490-121298-3	MW-3A	Total/NA	Water	7470A	
490-121298-4	MW-4	Total/NA	Water	7470A	
490-121298-5	MW-5	Total/NA	Water	7470A	
490-121298-6	MW-6	Total/NA	Water	7470A	
490-121298-7	DUPE	Total/NA	Water	7470A	
MB 490-410568/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-410568/2-A	Lab Control Sample	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 410568 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 490-410568/24-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-121298-2 MS	MW-2	Total/NA	Water	7470A	
490-121298-2 MSD	MW-2	Total/NA	Water	7470A	

Analysis Batch: 410819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	7470A	410568
490-121298-2	MW-2	Total/NA	Water	7470A	410568
490-121298-3	MW-3A	Total/NA	Water	7470A	410568
490-121298-4	MW-4	Total/NA	Water	7470A	410568
490-121298-5	MW-5	Total/NA	Water	7470A	410568
490-121298-6	MW-6	Total/NA	Water	7470A	410568
490-121298-7	DUPE	Total/NA	Water	7470A	410568
MB 490-410568/1-A	Method Blank	Total/NA	Water	7470A	410568
LCS 490-410568/2-A	Lab Control Sample	Total/NA	Water	7470A	410568
LCSD 490-410568/24-A	Lab Control Sample Dup	Total/NA	Water	7470A	410568
490-121298-2 MS	MW-2	Total/NA	Water	7470A	410568
490-121298-2 MSD	MW-2	Total/NA	Water	7470A	410568

Prep Batch: 410844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-8	FIELD BLANK	Total/NA	Water	7470A	

Analysis Batch: 411043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-8	FIELD BLANK	Total/NA	Water	7470A	410844

General Chemistry

Analysis Batch: 405167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	SM 2540C	
490-121298-2	MW-2	Total/NA	Water	SM 2540C	
490-121298-3	MW-3A	Total/NA	Water	SM 2540C	
490-121298-4	MW-4	Total/NA	Water	SM 2540C	
490-121298-5	MW-5	Total/NA	Water	SM 2540C	
490-121298-6	MW-6	Total/NA	Water	SM 2540C	
490-121298-7	DUPE	Total/NA	Water	SM 2540C	
490-121298-8	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-405167/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-405167/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-121260-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-121306-C-4 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 406039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	9040C	
490-121298-2	MW-2	Total/NA	Water	9040C	
490-121298-4	MW-4	Total/NA	Water	9040C	
490-121298-5	MW-5	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 406039 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-6	MW-6	Total/NA	Water	9040C	
LCS 490-406039/12	Lab Control Sample	Total/NA	Water	9040C	
490-121287-F-1 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 406040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-7	DUPE	Total/NA	Water	9040C	
490-121298-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-406040/4	Lab Control Sample	Total/NA	Water	9040C	
490-121298-7 DU	DUPE	Total/NA	Water	9040C	

Analysis Batch: 406592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-3	MW-3A	Total/NA	Water	9040C	
490-121298-7	DUPE	Total/NA	Water	9040C	
490-121298-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-406592/1	Lab Control Sample	Total/NA	Water	9040C	
490-121480-A-1 DU	Duplicate	Total/NA	Water	9040C	

Rad

Prep Batch: 291569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	PrecSep_0	
490-121298-2	MW-2	Total/NA	Water	PrecSep_0	
490-121298-3	MW-3A	Total/NA	Water	PrecSep_0	
490-121298-4	MW-4	Total/NA	Water	PrecSep_0	
490-121298-5	MW-5	Total/NA	Water	PrecSep_0	
490-121298-6	MW-6	Total/NA	Water	PrecSep_0	
490-121298-7	DUPE	Total/NA	Water	PrecSep_0	
490-121298-8	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-291569/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-291569/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
490-121299-A-1-B MS	Matrix Spike	Total/NA	Water	PrecSep_0	
490-121299-B-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	
490-121092-G-1-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 291577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121298-1	MW-1	Total/NA	Water	PrecSep-21	
490-121298-2	MW-2	Total/NA	Water	PrecSep-21	
490-121298-3	MW-3A	Total/NA	Water	PrecSep-21	
490-121298-4	MW-4	Total/NA	Water	PrecSep-21	
490-121298-5	MW-5	Total/NA	Water	PrecSep-21	
490-121298-6	MW-6	Total/NA	Water	PrecSep-21	
490-121298-7	DUPE	Total/NA	Water	PrecSep-21	
490-121298-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-291577/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-291577/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
490-121299-A-1-C MS	Matrix Spike	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 291577 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121299-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	
490-121092-G-1-F DU	Duplicate	Total/NA	Water	PrecSep-21	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Client Sample ID: MW-1

Date Collected: 02/01/17 09:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-1

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			410832	02/28/17 03:00	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 09:48	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 21:32	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 14:25	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406039	02/06/17 19:30	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.42 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 05:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.42 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 02/01/17 14:10
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-2

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			410832	02/28/17 04:09	JHS	TAL NSH
Total/NA	Analysis	9056A		10			410983	02/28/17 11:16	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 09:59	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 21:37	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 14:17	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406039	02/06/17 19:30	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.37 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.37 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 02/01/17 13:25
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-3

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			410832	02/28/17 04:43	JHS	TAL NSH

Client Sample ID: MW-3A

Date Collected: 02/01/17 13:25
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-3

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		100			410983	02/28/17 11:50	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:04	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 21:59	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 14:28	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406592	02/08/17 15:37	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.37 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.37 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 02/01/17 12:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-4

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			410832	02/28/17 05:17	JHS	TAL NSH
Total/NA	Analysis	9056A		100			410983	02/28/17 12:24	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:09	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 22:04	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 14:30	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406039	02/06/17 19:30	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.36 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.36 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 02/01/17 11:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-5

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		5			410983	02/28/17 12:58	JHS	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Client Sample ID: MW-5

Date Collected: 02/01/17 11:35
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-5

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		100			410983	02/28/17 13:15	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:15	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 22:09	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 14:33	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406039	02/06/17 19:30	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.60 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.60 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 02/01/17 10:45
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-6

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			410832	02/28/17 06:59	JHS	TAL NSH
Total/NA	Analysis	9056A		10			410983	02/28/17 14:06	JHS	TAL NSH
Total/NA	Analysis	9056A		100			410983	02/28/17 14:23	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 22:14	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 14:41	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406039	02/06/17 19:30	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.93 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.93 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Client Sample ID: DUPE

Date Collected: 02/01/17 10:55
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-7

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			410832	02/28/17 07:34	JHS	TAL NSH
Total/NA	Analysis	9056A		100	10 mL	1.0 mL	410983	02/28/17 14:40	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:36	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 22:19	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 14:44	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406040	02/06/17 19:46	MS	TAL NSH
Total/NA	Analysis	9040C		1			406592	02/08/17 15:37	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1001.14 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1001.14 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 02/01/17 15:05
Date Received: 02/03/17 10:20

Lab Sample ID: 490-121298-8

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	10 mL	1.0 mL	410558	02/26/17 03:10	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 22:24	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	410844	02/28/17 08:40	CAH	TAL NSH
Total/NA	Analysis	7470A		1			411043	02/28/17 14:37	CAH	TAL NSH
Total/NA	Analysis	9040C		1			406040	02/06/17 19:46	MS	TAL NSH
Total/NA	Analysis	9040C		1			406592	02/08/17 15:37	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	405167	02/03/17 19:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.43 mL	1.0 g	291577	02/08/17 16:03	PJM	TAL SL
Total/NA	Analysis	903.0		1			295372	03/02/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.43 mL	1.0 g	291569	02/08/17 15:48	PJM	TAL SL
Total/NA	Analysis	904.0		1			294971	02/28/17 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	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: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17 *
North Carolina (WW/SW)	State Program	4	434	12-31-17
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-121298 Chain of Custody

Cooler Received/Opened On 2/3/2017 @ 1020

Time Samples Removed From Cooler 1540 Time Samples Placed In Storage 1554 (2 Hour Window)

1. Tracking # 7208 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960353 pH Strip Lot N/A Chlorine Strip Lot 0811166

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 (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) AD

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) mam

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) mam

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

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

BIS = Broken in shipment

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

Mary Dick
BREC
2/2/2017 1230

121798

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 2/3/2017 @ 1020

Time Samples Removed From Cooler 1523 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 7297 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun 31470368 pH Strip Lot N/A Chlorine Strip Lot 08H164

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: 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) 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) AT

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 *mm 2-3-17*

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

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) mm

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

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

3/10/2017

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 2/3/2017 @ 1020

Time Samples Removed From Cooler 1536 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 7459 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun 31470368 pH Strip Lot N/A Chlorine Strip Lot 08116K

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? 2 FRONT 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 2/3/17

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

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) AJ

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) mam

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) mam

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

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
121298

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 2-2-17 (2-3-17) @ 1020

Time Samples Removed From Cooler 1528 (nam 2-3-17) Time Samples Placed In Storage 1554 (2 Hour Window)

1. Tracking # 7210 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 14740456 pH Strip Lot HC689794 Chlorine Strip Lot 081116K

2. Temperature of rep. sample or temp blank when opened: 1.6 *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: Two 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? AD 2-3-17 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) AD

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) mam

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) mam

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

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

3/10/2017

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: 2/2/2017**
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: Green Landfill CCR Groundwater-Round 5	☐ 1 week		
Site: Green Landfill (GL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-62474-18049.2
___1___ of ___1___ COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client: Loc: 490
Lab Sampling: 121298
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-1	2/1/17	935	G	Water	6	N	N	x	x	x	x	
MW-2	2/1/17	1410	G	Water	6	N	N	x	x	x	x	
MW-3A	2/1/17	1325	G	Water	6	N	N	x	x	x	x	sample bottles labeled MW-3 are same as MW-3A
MW-4	2/1/17	1235	G	Water	6	N	N	x	x	x	x	
MW-5	2/1/17	1135	G	Water	6	N	N	x	x	x	x	
MW-6	2/1/17	1045	G	Water	6	N	N	x	x	x	x	
DUPE	2/1/17	1055	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	2/1/17	1505	G	Water	6	N	N	x	x	x	x	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____ 4 4 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). See attached constituent lists 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: 2/2/2017 1230	Received by:	Company: FAN	Date/Time: 2-3-17 @ 1020
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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

Chain of Custody Record

490-121298 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-53340.1
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 #: 490-121298-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/3/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Landfill CCR Groundwater Rd 5	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)	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 (490-121298-1)	2/1/17	09:35 Central		Water			X	X	X	2	Historical Review required
MW-2 (490-121298-2)	2/1/17	14:10 Central		Water			X	X	X	2	Historical Review required
MW-3A (490-121298-3)	2/1/17	13:25 Central		Water			X	X	X	2	Historical Review required
MW-4 (490-121298-4)	2/1/17	12:35 Central		Water			X	X	X	2	Historical Review required
MW-5 (490-121298-5)	2/1/17	11:35 Central		Water			X	X	X	2	Historical Review required
MW-6 (490-121298-6)	2/1/17	10:45 Central		Water			X	X	X	2	Historical Review required
DUPE (490-121298-7)	2/1/17	10:55 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-121298-8)	2/1/17	15:05 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 *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: 2/4/17 0030	Company 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

490-121298 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	338.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamer...	of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-121298-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 2/28/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Green Landfill CCR Groundwater Rd 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/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-121298-1)	2/1/17	09:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-121298-2)	2/1/17	14:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-3A (490-121298-3)	2/1/17	13:25 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-121298-4)	2/1/17	12:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-121298-5)	2/1/17	11:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-121298-6)	2/1/17	10:45 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-121298-7)	2/1/17	10:55 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-121298-8)	2/1/17	15:05 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 compliance 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 Billy Bass	Date/Time: 2-3-17 1735	Company: TAN	Received by: D Newton
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Date/Time: 2-4-17	Company: TAP		
Date/Time: 915	Company		
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: 490-121298-1
SDG Number: Green Landfill (GL)

Login Number: 121298
List Number: 1
Creator: McBride, Mike

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.	True	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-121298-1
SDG Number: Green Landfill (GL)

Login Number: 121298
List Number: 3
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 02/04/17 05:04 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: 490-121298-1
SDG Number: Green Landfill (GL)

Login Number: 121298
List Number: 2
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 02/04/17 11:56 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.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0,3.1
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: Green Landfill CCR Groundwater Rd 5

TestAmerica Job ID: 490-121298-1
SDG: Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-121092-G-1-F DU	Duplicate	86.4
490-121298-1	MW-1	88.8
490-121298-2	MW-2	98.2
490-121298-3	MW-3A	90.9
490-121298-4	MW-4	99.4
490-121298-5	MW-5	92.0
490-121298-6	MW-6	100
490-121298-7	DUPE	100
490-121298-8	FIELD BLANK	105
490-121299-A-1-C MS	Matrix Spike	92.3
490-121299-B-1-F MSD	Matrix Spike Duplicate	94.1
LCS 160-291577/2-A	Lab Control Sample	97.3
MB 160-291577/1-A	Method Blank	99.1

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-121092-G-1-D DU	Duplicate	86.4	90.8
490-121298-1	MW-1	88.8	89.7
490-121298-2	MW-2	98.2	90.1
490-121298-3	MW-3A	90.9	93.5
490-121298-4	MW-4	99.4	89.0
490-121298-5	MW-5	92.0	87.9
490-121298-6	MW-6	100	91.2
490-121298-7	DUPE	100	91.6
490-121298-8	FIELD BLANK	105	87.9
490-121299-A-1-B MS	Matrix Spike	92.3	84.5
490-121299-B-1-D MSD	Matrix Spike Duplicate	94.1	94.2
LCS 160-291569/2-A	Lab Control Sample	97.3	95.3
MB 160-291569/1-A	Method Blank	99.1	89.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-127934-1
TestAmerica SDG: Sebree Station, Green Landfill (GL)
Client Project/Site: GL CCR Groundwater-Round 6
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
6/2/2017 2:00:26 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-127934-1	MW-1	Water	05/02/17 09:20	05/06/17 13:04
490-127934-2	MW-2	Water	05/02/17 15:00	05/06/17 13:04
490-127934-3	MW-3A	Water	05/02/17 14:10	05/06/17 13:04
490-127934-4	MW-4	Water	05/02/17 13:25	05/06/17 13:04
490-127934-5	MW-5	Water	05/02/17 12:00	05/06/17 13:04
490-127934-6	MW-6	Water	05/02/17 11:00	05/06/17 13:04
490-127934-7	DUPE	Water	05/02/17 11:30	05/06/17 13:04
490-127934-8	FIELD BLANK	Water	05/02/17 15:30	05/06/17 13:04

Job ID: 490-127934-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-127934-1

Comments
No additional comments.

Receipt
The samples were received on 5/5/2017 10:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.3º C, 0.9º C, 1.0º C and 5.1º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-430555 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 sample was diluted due to the nature of the sample matrix: MW-2 (490-127934-2) and MW-3A (490-127934-3). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-430936 were outside control limits for chloride and 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 method blank for analytical batch 490-430936 contained chloride and fluoride 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 490-431114 were outside control limits sulfate and/or chloride. 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 method blank for analytical batch 490-431114 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.

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 160-308074: 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-1 (490-127934-1), MW-2 (490-127934-2), MW-3A (490-127934-3), MW-4 (490-127934-4), MW-5 (490-127934-5), MW-6 (490-127934-6), DUPE (490-127934-7) and FIELD BLANK (490-127934-8)

Method(s) PrecSep-21: Radium 228 Prep Batch 160-308074: The following samples bubbled when sulfuric acid was added. MW-6 (490-127934-6) and DUPE (490-127934-7)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-308161: 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-1 (490-127934-1), MW-2 (490-127934-2), MW-3A (490-127934-3), MW-4 (490-127934-4), MW-5 (490-127934-5), MW-6 (490-127934-6), DUPE (490-127934-7) and FIELD BLANK (490-127934-8)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-308161: The following samples bubbled when sulfuric acid was added. MW-6 (490-127934-6) and DUPE (490-127934-7)

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

Job ID: 490-127934-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
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-1

Date Collected: 05/02/17 09:20
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.30**	**B**	3.00	0.200	mg/L			05/17/17 06:33	1
Fluoride	**0.542**	**J B**	1.00	0.0100	mg/L			05/17/17 06:33	1
Sulfate	**24.0**	**B**	10.0	0.0600	mg/L			05/18/17 16:27	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0396**	**J**	0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000163**	**J B**	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 17:30	1
Arsenic	**0.000515**	**J**	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 17:30	1
Barium	**0.0806**	**J**	0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 17:30	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 17:30	1
Boron	**1.68**		1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 17:30	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 17:30	1
Calcium	**28.1**		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 17:30	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 17:30	1
Cobalt	**0.000831**	**J**	0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 17:30	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 17:30	1
Molybdenum	**0.00130**	**J**	0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 17:30	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 17:30	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 17:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.54**		0.100	0.100	SU			05/11/17 16:05	1
Temperature	**17.5**		0.100	0.100	Degrees C			05/11/17 16:05	1
Total Dissolved Solids	**630**		10.0	7.00	mg/L			05/09/17 17:06	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	**0.309**		0.114	0.117	1.00	0.107	pCi/L	05/10/17 09:02	06/01/17 05:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:49*	*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	**0.357**		0.213	0.216	1.00	0.320	pCi/L	05/10/17 14:38	05/25/17 10:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:42*	*1*

Client Sample ID: MW-1
Date Collected: 05/02/17 09:20
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	05/10/17 14:38	05/25/17 10:42	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	0.666		0.242	0.246	5.00	0.320	pCi/L		06/02/17 12:09	1

Client Sample ID: MW-2

Date Collected: 05/02/17 15:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**129**	**B**	30.0	2.00	mg/L			05/17/17 07:09	10
Fluoride	**0.215**	**J B**	1.00	0.0100	mg/L			05/17/17 06:51	1
Sulfate	**83.2**		50.0	0.300	mg/L			05/17/17 07:09	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0122**	**J**	0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 13:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000114**	**J B**	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 17:35	1
Arsenic	**0.00755**		0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 17:35	1
Barium	**0.332**		0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 17:35	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 17:35	1
Boron	**0.0452**	**J**	1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 17:35	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 17:35	1
Calcium	**152**		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 17:35	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 17:35	1
Cobalt	**0.00274**	**J**	0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 17:35	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 17:35	1
Molybdenum	**0.00248**	**J**	0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 17:35	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 17:35	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 17:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.04**		0.100	0.100	SU			05/15/17 15:59	1
Temperature	**15.4**		0.100	0.100	Degrees C			05/15/17 15:59	1
Total Dissolved Solids	**918**		10.0	7.00	mg/L			05/09/17 17:06	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	**0.285**		0.118	0.121	1.00	0.131	pCi/L	05/10/17 09:02	06/01/17 05:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:49*	*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	**0.445**		0.242	0.246	1.00	0.364	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client Sample ID: MW-2
Date Collected: 05/02/17 15:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.4		40 - 110	05/10/17 14:38	05/25/17 10:43	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	0.730		0.269	0.274	5.00	0.364	pCi/L		06/02/17 12:09	1

Client Sample ID: MW-3A

Date Collected: 05/02/17 14:10
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2120	B	600	40.0	mg/L			05/18/17 17:21	200
Fluoride	0.294	J B	1.00	0.0100	mg/L			05/17/17 07:27	1
Sulfate	1030	B	1000	6.00	mg/L			05/18/17 17:21	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.746		0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 13:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000680	J B	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 17:40	1
Arsenic	0.000343	J	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 17:40	1
Barium	0.0473	J	0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 17:40	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 17:40	1
Boron	0.232	J	1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 17:40	1
Cadmium	0.000228	J	0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 17:40	1
Calcium	420		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 17:40	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 17:40	1
Cobalt	0.0000290	J	0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 17:40	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 17:40	1
Molybdenum	ND		0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 17:40	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 17:40	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 17:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.11		0.100	0.100	SU			05/15/17 15:59	1
Temperature	15.7		0.100	0.100	Degrees C			05/15/17 15:59	1
Total Dissolved Solids	5170		100	70.0	mg/L			05/09/17 17:06	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	0.424		0.137	0.142	1.00	0.116	pCi/L	05/10/17 09:02	06/01/17 05:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:49*	*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	0.499		0.249	0.253	1.00	0.364	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client Sample ID: MW-3A
Date Collected: 05/02/17 14:10
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.6		40 - 110	05/10/17 14:38	05/25/17 10:43	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	0.923		0.284	0.290	5.00	0.364	pCi/L		06/02/17 12:09	1

Client Sample ID: MW-4

Date Collected: 05/02/17 13:25
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1320	B	600	40.0	mg/L			05/18/17 13:40	200
Fluoride	1.06	B	1.00	0.0100	mg/L			05/17/17 01:29	1
Sulfate	1430	B	1000	6.00	mg/L			05/18/17 13:40	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.59		0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 14:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000118	J B	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 17:45	1
Arsenic	0.000449	J	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 17:45	1
Barium	0.0276	J	0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 17:45	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 17:45	1
Boron	2.09		1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 17:45	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 17:45	1
Calcium	774		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 17:45	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 17:45	1
Cobalt	ND		0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 17:45	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 17:45	1
Molybdenum	ND		0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 17:45	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 17:45	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 17:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.717		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.10		0.100	0.100	SU			05/15/17 15:59	1
Temperature	16.6		0.100	0.100	Degrees C			05/15/17 15:59	1
Total Dissolved Solids	4550		40.0	28.0	mg/L			05/09/17 17:06	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	0.198		0.0986	0.100	1.00	0.110	pCi/L	05/10/17 09:02	06/01/17 05:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:49*	*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	1.23		0.326	0.345	1.00	0.402	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client Sample ID: MW-4
Date Collected: 05/02/17 13:25
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	78.1		40 - 110	05/10/17 14:38	05/25/17 10:43	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	1.43		0.340	0.359	5.00	0.402	pCi/L		06/02/17 12:09	1

Client Sample ID: MW-5

Date Collected: 05/02/17 12:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	722	B	600	40.0	mg/L			05/18/17 13:58	200
Fluoride	0.0660	J B	1.00	0.0100	mg/L			05/17/17 02:23	1
Sulfate	1760	B	1000	6.00	mg/L			05/18/17 13:58	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.415		0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 14:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000144	J B	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 17:50	1
Arsenic	0.000356	J	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 17:50	1
Barium	0.0147	J	0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 17:50	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 17:50	1
Boron	0.241	J	1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 17:50	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 17:50	1
Calcium	464		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 17:50	1
Chromium	0.000366	J	0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 17:50	1
Cobalt	0.0000650	J	0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 17:50	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 17:50	1
Molybdenum	ND		0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 17:50	1
Selenium	0.000368	J	0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 17:50	1
Thallium	0.0000450	J	0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 17:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 17:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.05		0.100	0.100	SU			05/15/17 16:14	1
Temperature	18.2		0.100	0.100	Degrees C			05/15/17 16:14	1
Total Dissolved Solids	4250		40.0	28.0	mg/L			05/09/17 17:06	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	0.342		0.124	0.127	1.00	0.118	pCi/L	05/10/17 09:02	06/01/17 05:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:49*	*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	0.546		0.281	0.286	1.00	0.417	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client Sample ID: MW-5
Date Collected: 05/02/17 12:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	78.1		40 - 110	05/10/17 14:38	05/25/17 10:43	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	0.888		0.307	0.313	5.00	0.417	pCi/L		06/02/17 12:09	1

Client Sample ID: MW-6

Date Collected: 05/02/17 11:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**129**	**B**	60.0	4.00	mg/L			05/17/17 23:59	20
Fluoride	**0.302**	**J B**	1.00	0.0100	mg/L			05/17/17 02:41	1
Sulfate	**2600**	**B**	1000	6.00	mg/L			05/18/17 14:15	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0724**		0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000930**	**J B**	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 17:55	1
Arsenic	**0.000467**	**J**	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 17:55	1
Barium	**0.0119**	**J**	0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 17:55	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 17:55	1
Boron	**0.179**	**J**	1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 17:55	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 17:55	1
Calcium	**415**		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 17:55	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 17:55	1
Cobalt	**0.0000970**	**J**	0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 17:55	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 17:55	1
Molybdenum	**0.00189**	**J**	0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 17:55	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 17:55	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 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		05/08/17 10:34	05/08/17 17:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.95**		0.100	0.100	SU			05/15/17 16:14	1
Temperature	**17.2**		0.100	0.100	Degrees C			05/15/17 16:14	1
Total Dissolved Solids	**4700**		40.0	28.0	mg/L			05/09/17 17:06	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	0.0278	U	0.0701	0.0702	1.00	0.129	pCi/L	05/10/17 09:02	06/01/17 05:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:49*	*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	0.333	U	0.322	0.323	1.00	0.523	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client Sample ID: MW-6
Date Collected: 05/02/17 11:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-6
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	77.0		40 - 110	05/10/17 14:38	05/25/17 10:43	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	0.361	U	0.329	0.331	5.00	0.523	pCi/L		06/02/17 12:09	1

Client Sample ID: DUPE

Date Collected: 05/02/17 11:30
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	134	B	30.0	2.00	mg/L			05/18/17 00:35	10
Fluoride	0.313	J B	1.00	0.0100	mg/L			05/17/17 02:59	1
Sulfate	2520	B	1000	6.00	mg/L			05/18/17 14:40	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0733		0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 14:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000830	J B	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 18:00	1
Arsenic	0.000379	J	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 18:00	1
Barium	0.0116	J	0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 18:00	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 18:00	1
Boron	0.176	J	1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 18:00	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 18:00	1
Calcium	412		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 18:00	1
Chromium	0.000509	J	0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 18:00	1
Cobalt	0.000161	J	0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 18:00	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 18:00	1
Molybdenum	0.00249	J	0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 18:00	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 18:00	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 18:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 17:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.96		0.100	0.100	SU			05/15/17 16:14	1
Temperature	17.2		0.100	0.100	Degrees C			05/15/17 16:14	1
Total Dissolved Solids	4560		40.0	28.0	mg/L			05/09/17 17:06	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	0.0171	U	0.0563	0.0563	1.00	0.109	pCi/L	05/10/17 09:02	06/01/17 05:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:50*	*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	0.253	U	0.241	0.242	1.00	0.390	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: DUPE
Date Collected: 05/02/17 11:30
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-7
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.6		40 - 110	05/10/17 14:38	05/25/17 10:43	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	0.271	U	0.248	0.249	5.00	0.390	pCi/L		06/02/17 12:09	1

Client Sample ID: FIELD BLANK

Date Collected: 05/02/17 15:30
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.220**	**J B**	3.00	0.200	mg/L			05/17/17 03:16	1
Fluoride	ND		1.00	0.0100	mg/L			05/17/17 03:16	1
Sulfate	**0.134**	**J**	5.00	0.0300	mg/L			05/17/17 03:16	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		05/16/17 15:31	05/18/17 14:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000770**	**J B**	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 18:05	1
Arsenic	**0.000141**	**J**	0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 18:05	1
Barium	ND		0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 18:05	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 18:05	1
Boron	ND		1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 18:05	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 18:05	1
Calcium	**0.174**	**J**	1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 18:05	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 18:05	1
Cobalt	ND		0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 18:05	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 18:05	1
Molybdenum	ND		0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 18:05	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 18:05	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 18:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 17:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.73**		0.100	0.100	SU			05/15/17 16:14	1
Temperature	**17.2**		0.100	0.100	Degrees C			05/15/17 16:14	1
Total Dissolved Solids	**14.0**		10.0	7.00	mg/L			05/09/17 17:06	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	0.0628	U	0.0682	0.0684	1.00	0.108	pCi/L	05/10/17 09:02	06/01/17 05:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:50*	*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	0.209	U	0.232	0.233	1.00	0.381	pCi/L	05/10/17 14:38	05/25/17 10:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:43*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 05/02/17 15:30
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-8
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	77.8		40 - 110	05/10/17 14:38	05/25/17 10:43	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	0.272	U	0.242	0.243	5.00	0.381	pCi/L		06/02/17 12:09	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-430555/3
Matrix: Water
Analysis Batch: 430555

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3713	J	3.00	0.200	mg/L			05/17/17 00:36	1
Fluoride	0.02251	J	1.00	0.0100	mg/L			05/17/17 00:36	1
Sulfate	ND		5.00	0.0300	mg/L			05/17/17 00:36	1

Lab Sample ID: LCS 490-430555/4
Matrix: Water
Analysis Batch: 430555

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	10.58		mg/L		106	80 - 120
Fluoride	1.00	1.012		mg/L		101	80 - 120
Sulfate	10.0	10.05		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-430555/5
Matrix: Water
Analysis Batch: 430555

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	10.54		mg/L		105	80 - 120	0	20
Fluoride	1.00	1.017		mg/L		102	80 - 120	1	20
Sulfate	10.0	10.11		mg/L		101	80 - 120	1	20

Lab Sample ID: 490-127934-4 MS
Matrix: Water
Analysis Batch: 430555

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.06	B	0.200	0.8764	J 4	mg/L		-93	80 - 120

Lab Sample ID: 490-127934-4 MSD
Matrix: Water
Analysis Batch: 430555

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.06	B	0.200	0.8810	J 4	mg/L		-91	80 - 120	1	20

Lab Sample ID: MB 490-430936/3
Matrix: Water
Analysis Batch: 430936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3825	J	3.00	0.200	mg/L			05/17/17 22:30	1
Fluoride	ND		1.00	0.0100	mg/L			05/17/17 22:30	1

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

Lab Sample ID: LCS 490-430936/4
Matrix: Water
Analysis Batch: 430936

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	10.26		mg/L		103	80 - 120
Fluoride	1.00	0.9842	J	mg/L		98	80 - 120

Lab Sample ID: LCSD 490-430936/5
Matrix: Water
Analysis Batch: 430936

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	10.64		mg/L		106	80 - 120	4	20
Fluoride	1.00	1.019		mg/L		102	80 - 120	3	20

Lab Sample ID: 490-128738-B-2 MS
Matrix: Water
Analysis Batch: 430936

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	76.2	F1 B	40.0	105.0	F1	mg/L		72	80 - 120
Fluoride	0.768	J	4.00	4.428	J	mg/L		92	80 - 120

Lab Sample ID: 490-128738-B-2 MSD
Matrix: Water
Analysis Batch: 430936

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	76.2	F1 B	40.0	111.8		mg/L		89	80 - 120	6	20
Fluoride	0.768	J	4.00	4.430	J	mg/L		92	80 - 120	0	20

Lab Sample ID: MB 490-431114/3
Matrix: Water
Analysis Batch: 431114

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.5265	J	3.00	0.200	mg/L			05/18/17 11:52	1
Fluoride	ND		1.00	0.0100	mg/L			05/18/17 11:52	1
Sulfate	0.1122	J	5.00	0.0300	mg/L			05/18/17 11:52	1

Lab Sample ID: LCS 490-431114/4
Matrix: Water
Analysis Batch: 431114

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	10.00		mg/L		100	80 - 120
Fluoride	1.00	0.9469	J	mg/L		95	80 - 120
Sulfate	10.0	9.540		mg/L		95	80 - 120

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

Lab Sample ID: LCSD 490-431114/5
Matrix: Water
Analysis Batch: 431114

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	9.943		mg/L		99	80 - 120	1	20
Fluoride			1.00	0.9604	J	mg/L		96	80 - 120	1	20
Sulfate			10.0	9.645		mg/L		96	80 - 120	1	20

Lab Sample ID: 490-128738-B-2 MS
Matrix: Water
Analysis Batch: 431114

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	79.7	B F1	40.0	105.5	F1	mg/L		65	80 - 120		
Fluoride	0.766	J	4.00	4.809	J	mg/L		101	80 - 120		
Sulfate	359	B	40.0	327.9	4	mg/L		-78	80 - 120		

Lab Sample ID: 490-128738-B-2 MSD
Matrix: Water
Analysis Batch: 431114

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	79.7	B F1	40.0	114.1		mg/L		86	80 - 120	8	20
Fluoride	0.766	J	4.00	4.599	J	mg/L		96	80 - 120	4	20
Sulfate	359	B	40.0	331.6	4	mg/L		-69	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-211368/1-A
Matrix: Water
Analysis Batch: 211658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		05/16/17 15:31	05/18/17 13:19	1

Lab Sample ID: LCS 180-211368/2-A
Matrix: Water
Analysis Batch: 211658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211368

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium			1.00	1.017		mg/L		102	80 - 120		

Lab Sample ID: LCSD 180-211368/3-A
Matrix: Water
Analysis Batch: 211658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 211368

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium			1.00	1.030		mg/L		103	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-211366/1-A
Matrix: Water
Analysis Batch: 212101

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 211366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00004900	J	0.00200	0.0000213	mg/L		05/16/17 15:26	05/23/17 16:20	1
Arsenic	ND		0.00500	0.000118	mg/L		05/16/17 15:26	05/23/17 16:20	1
Barium	ND		0.200	0.000270	mg/L		05/16/17 15:26	05/23/17 16:20	1
Beryllium	ND		0.00200	0.000102	mg/L		05/16/17 15:26	05/23/17 16:20	1
Boron	ND		1.00	0.00339	mg/L		05/16/17 15:26	05/23/17 16:20	1
Cadmium	ND		0.00100	0.000152	mg/L		05/16/17 15:26	05/23/17 16:20	1
Calcium	ND		1.00	0.0412	mg/L		05/16/17 15:26	05/23/17 16:20	1
Chromium	ND		0.00300	0.000339	mg/L		05/16/17 15:26	05/23/17 16:20	1
Cobalt	ND		0.00500	0.0000218	mg/L		05/16/17 15:26	05/23/17 16:20	1
Lead	ND		0.00500	0.0000675	mg/L		05/16/17 15:26	05/23/17 16:20	1
Molybdenum	ND		0.0100	0.000873	mg/L		05/16/17 15:26	05/23/17 16:20	1
Selenium	ND		0.0100	0.000348	mg/L		05/16/17 15:26	05/23/17 16:20	1
Thallium	ND		0.00100	0.0000360	mg/L		05/16/17 15:26	05/23/17 16:20	1

Lab Sample ID: LCS 180-211366/2-A
Matrix: Water
Analysis Batch: 212101

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 211366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5012		mg/L		100	80 - 120
Arsenic	0.0400	0.04274		mg/L		107	80 - 120
Barium	2.00	1.961		mg/L		98	80 - 120
Beryllium	0.0500	0.04329		mg/L		87	80 - 120
Boron	1.00	0.9335	J	mg/L		93	80 - 120
Cadmium	0.0500	0.05439		mg/L		109	80 - 120
Calcium	50.0	50.69		mg/L		101	80 - 120
Chromium	0.200	0.1895		mg/L		95	80 - 120
Cobalt	0.500	0.4951		mg/L		99	80 - 120
Lead	0.0200	0.02055		mg/L		103	80 - 120
Molybdenum	1.00	1.032		mg/L		103	80 - 120
Selenium	0.0100	0.009315	J	mg/L		93	80 - 120
Thallium	0.0500	0.05088		mg/L		102	80 - 120

Lab Sample ID: LCSD 180-211366/3-A
Matrix: Water
Analysis Batch: 212101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 211366

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.4953		mg/L		99	80 - 120	1	20
Arsenic	0.0400	0.04015		mg/L		100	80 - 120	6	20
Barium	2.00	1.947		mg/L		97	80 - 120	1	20
Beryllium	0.0500	0.04332		mg/L		87	80 - 120	0	20
Boron	1.00	0.9336	J	mg/L		93	80 - 120	0	20
Cadmium	0.0500	0.05371		mg/L		107	80 - 120	1	20
Calcium	50.0	49.04		mg/L		98	80 - 120	3	20
Chromium	0.200	0.1894		mg/L		95	80 - 120	0	20
Cobalt	0.500	0.4830		mg/L		97	80 - 120	2	20
Lead	0.0200	0.02032		mg/L		102	80 - 120	1	20

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

Lab Sample ID: LCSD 180-211366/3-A
Matrix: Water
Analysis Batch: 212101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 211366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum			1.00	1.006		mg/L		101	80 - 120	3	20
Selenium			0.0100	0.01111		mg/L		111	80 - 120	18	20
Thallium			0.0500	0.05101		mg/L		102	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-428205/1-A
Matrix: Water
Analysis Batch: 428390

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428205

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:01	1

Lab Sample ID: LCS 490-428205/2-A
Matrix: Water
Analysis Batch: 428390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428205

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	1.200		ug/L		120	80 - 120		

Lab Sample ID: 490-127756-E-1-B MS
Matrix: Water
Analysis Batch: 428390

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 428205

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND	F1	1.00	1.277	F1	ug/L		128	75 - 125		

Lab Sample ID: 490-127756-E-1-C MSD
Matrix: Water
Analysis Batch: 428390

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 428205

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	1.00	1.226		ug/L		123	75 - 125	4	20

Method: 9040C - pH

Lab Sample ID: LCS 490-429336/12
Matrix: Water
Analysis Batch: 429336

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: 490-127934-1 DU
Matrix: Water
Analysis Batch: 429336

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.54			7.540		SU				0	20

Method: 9040C - pH (Continued)

Lab Sample ID: 490-127934-1 DU
Matrix: Water
Analysis Batch: 429336

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Temperature	17.5			17.50		Degrees C				0	20

Lab Sample ID: LCS 490-430100/12
Matrix: Water
Analysis Batch: 430100

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: 490-127913-A-1 DU
Matrix: Water
Analysis Batch: 430100

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.67			7.830		SU				2	20
Temperature	22.3			22.20		Degrees C				0.4	20

Lab Sample ID: LCS 490-430108/10
Matrix: Water
Analysis Batch: 430108

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	7.060		SU		101	98 - 103		

Lab Sample ID: 490-127934-5 DU
Matrix: Water
Analysis Batch: 430108

Client Sample ID: MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.05			7.110		SU				0.8	20
Temperature	18.2			17.80		Degrees C				2	20

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

Lab Sample ID: MB 490-427893/1
Matrix: Water
Analysis Batch: 427893

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			05/09/17 17:06	1

Lab Sample ID: LCS 490-427893/2
Matrix: Water
Analysis Batch: 427893

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		

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

Lab Sample ID: 490-127790-I-1 DU
Matrix: Water
Analysis Batch: 427893

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	5270			4864		mg/L				8	20

Lab Sample ID: 490-127868-C-1 DU
Matrix: Water
Analysis Batch: 427893

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	111			122.0		mg/L				9	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-308074/1-A
Matrix: Water
Analysis Batch: 311519

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308074

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02324	U	0.0584	0.0584	1.00	0.131	pCi/L	05/10/17 09:02	06/01/17 05:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*05/10/17 09:02*	*06/01/17 05:48*	*1*

Lab Sample ID: LCS 160-308074/2-A
Matrix: Water
Analysis Batch: 311519

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308074

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	10.97		1.16	1.00	0.117	pCi/L	97	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.8*		*40 - 110*

Lab Sample ID: LCSD 160-308074/3-A
Matrix: Water
Analysis Batch: 311519

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308074

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	10.48		1.11	1.00	0.123	pCi/L	92	68 - 137	0.21	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-308161/1-A
Matrix: Water
Analysis Batch: 310444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308161

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1995	U	0.211	0.212	1.00	0.344	pCi/L	05/10/17 14:38	05/25/17 10:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:42*	*1*
Y Carrier	*82.6*		*40 - 110*	*05/10/17 14:38*	*05/25/17 10:42*	*1*

Lab Sample ID: LCS 160-308161/2-A
Matrix: Water
Analysis Batch: 310444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308161

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.4	15.76		1.69	1.00	0.381	pCi/L	118	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.8*		*40 - 110*
Y Carrier	*74.0*		*40 - 110*

Lab Sample ID: LCSD 160-308161/3-A
Matrix: Water
Analysis Batch: 310444

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308161

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.4	14.33		1.53	1.00	0.402	pCi/L	107	56 - 140	0.44	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*86.7*		*40 - 110*

HPLC/IC

Analysis Batch: 430555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	9056A	
490-127934-2	MW-2	Total/NA	Water	9056A	
490-127934-2	MW-2	Total/NA	Water	9056A	
490-127934-3	MW-3A	Total/NA	Water	9056A	
490-127934-4	MW-4	Total/NA	Water	9056A	
490-127934-5	MW-5	Total/NA	Water	9056A	
490-127934-6	MW-6	Total/NA	Water	9056A	
490-127934-7	DUPE	Total/NA	Water	9056A	
490-127934-8	FIELD BLANK	Total/NA	Water	9056A	
MB 490-430555/3	Method Blank	Total/NA	Water	9056A	
LCS 490-430555/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-430555/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-127934-4 MS	MW-4	Total/NA	Water	9056A	
490-127934-4 MSD	MW-4	Total/NA	Water	9056A	

Analysis Batch: 430936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-6	MW-6	Total/NA	Water	9056A	
490-127934-7	DUPE	Total/NA	Water	9056A	
MB 490-430936/3	Method Blank	Total/NA	Water	9056A	
LCS 490-430936/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-430936/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-128738-B-2 MS	Matrix Spike	Total/NA	Water	9056A	
490-128738-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 431114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	9056A	
490-127934-3	MW-3A	Total/NA	Water	9056A	
490-127934-4	MW-4	Total/NA	Water	9056A	
490-127934-5	MW-5	Total/NA	Water	9056A	
490-127934-6	MW-6	Total/NA	Water	9056A	
490-127934-7	DUPE	Total/NA	Water	9056A	
MB 490-431114/3	Method Blank	Total/NA	Water	9056A	
LCS 490-431114/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-431114/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-128738-B-2 MS	Matrix Spike	Total/NA	Water	9056A	
490-128738-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 211366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total Recoverable	Water	3005A	
490-127934-2	MW-2	Total Recoverable	Water	3005A	
490-127934-3	MW-3A	Total Recoverable	Water	3005A	
490-127934-4	MW-4	Total Recoverable	Water	3005A	
490-127934-5	MW-5	Total Recoverable	Water	3005A	
490-127934-6	MW-6	Total Recoverable	Water	3005A	
490-127934-7	DUPE	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 211366 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-211366/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-211366/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-211366/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 211368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total Recoverable	Water	3005A	
490-127934-2	MW-2	Total Recoverable	Water	3005A	
490-127934-3	MW-3A	Total Recoverable	Water	3005A	
490-127934-4	MW-4	Total Recoverable	Water	3005A	
490-127934-5	MW-5	Total Recoverable	Water	3005A	
490-127934-6	MW-6	Total Recoverable	Water	3005A	
490-127934-7	DUPE	Total Recoverable	Water	3005A	
490-127934-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-211368/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-211368/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-211368/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 211658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total Recoverable	Water	6010C	211368
490-127934-2	MW-2	Total Recoverable	Water	6010C	211368
490-127934-3	MW-3A	Total Recoverable	Water	6010C	211368
490-127934-4	MW-4	Total Recoverable	Water	6010C	211368
490-127934-5	MW-5	Total Recoverable	Water	6010C	211368
490-127934-6	MW-6	Total Recoverable	Water	6010C	211368
490-127934-7	DUPE	Total Recoverable	Water	6010C	211368
490-127934-8	FIELD BLANK	Total Recoverable	Water	6010C	211368
MB 180-211368/1-A	Method Blank	Total Recoverable	Water	6010C	211368
LCS 180-211368/2-A	Lab Control Sample	Total Recoverable	Water	6010C	211368
LCSD 180-211368/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	211368

Analysis Batch: 212101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total Recoverable	Water	6020A	211366
490-127934-2	MW-2	Total Recoverable	Water	6020A	211366
490-127934-3	MW-3A	Total Recoverable	Water	6020A	211366
490-127934-4	MW-4	Total Recoverable	Water	6020A	211366
490-127934-5	MW-5	Total Recoverable	Water	6020A	211366
490-127934-6	MW-6	Total Recoverable	Water	6020A	211366
490-127934-7	DUPE	Total Recoverable	Water	6020A	211366
490-127934-8	FIELD BLANK	Total Recoverable	Water	6020A	211366
MB 180-211366/1-A	Method Blank	Total Recoverable	Water	6020A	211366
LCS 180-211366/2-A	Lab Control Sample	Total Recoverable	Water	6020A	211366
LCSD 180-211366/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	211366

Prep Batch: 428205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	7470A	
490-127934-2	MW-2	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 428205 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-3	MW-3A	Total/NA	Water	7470A	
490-127934-4	MW-4	Total/NA	Water	7470A	
490-127934-5	MW-5	Total/NA	Water	7470A	
490-127934-6	MW-6	Total/NA	Water	7470A	
490-127934-7	DUPE	Total/NA	Water	7470A	
490-127934-8	FIELD BLANK	Total/NA	Water	7470A	
MB 490-428205/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-428205/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-127756-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-127756-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 428390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	7470A	428205
490-127934-2	MW-2	Total/NA	Water	7470A	428205
490-127934-3	MW-3A	Total/NA	Water	7470A	428205
490-127934-4	MW-4	Total/NA	Water	7470A	428205
490-127934-5	MW-5	Total/NA	Water	7470A	428205
490-127934-6	MW-6	Total/NA	Water	7470A	428205
490-127934-7	DUPE	Total/NA	Water	7470A	428205
490-127934-8	FIELD BLANK	Total/NA	Water	7470A	428205
MB 490-428205/1-A	Method Blank	Total/NA	Water	7470A	428205
LCS 490-428205/2-A	Lab Control Sample	Total/NA	Water	7470A	428205
490-127756-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	428205
490-127756-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	428205

General Chemistry

Analysis Batch: 427893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	SM 2540C	
490-127934-2	MW-2	Total/NA	Water	SM 2540C	
490-127934-3	MW-3A	Total/NA	Water	SM 2540C	
490-127934-4	MW-4	Total/NA	Water	SM 2540C	
490-127934-5	MW-5	Total/NA	Water	SM 2540C	
490-127934-6	MW-6	Total/NA	Water	SM 2540C	
490-127934-7	DUPE	Total/NA	Water	SM 2540C	
490-127934-8	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-427893/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-427893/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-127790-I-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-127868-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 429336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	9040C	
LCS 490-429336/12	Lab Control Sample	Total/NA	Water	9040C	
490-127934-1 DU	MW-1	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 430100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-2	MW-2	Total/NA	Water	9040C	
490-127934-3	MW-3A	Total/NA	Water	9040C	
490-127934-4	MW-4	Total/NA	Water	9040C	
LCS 490-430100/12	Lab Control Sample	Total/NA	Water	9040C	
490-127913-A-1 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 430108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-5	MW-5	Total/NA	Water	9040C	
490-127934-6	MW-6	Total/NA	Water	9040C	
490-127934-7	DUPE	Total/NA	Water	9040C	
490-127934-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-430108/10	Lab Control Sample	Total/NA	Water	9040C	
490-127934-5 DU	MW-5	Total/NA	Water	9040C	

Rad

Prep Batch: 308074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	PrecSep-21	
490-127934-2	MW-2	Total/NA	Water	PrecSep-21	
490-127934-3	MW-3A	Total/NA	Water	PrecSep-21	
490-127934-4	MW-4	Total/NA	Water	PrecSep-21	
490-127934-5	MW-5	Total/NA	Water	PrecSep-21	
490-127934-6	MW-6	Total/NA	Water	PrecSep-21	
490-127934-7	DUPE	Total/NA	Water	PrecSep-21	
490-127934-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-308074/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-308074/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-308074/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 308161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127934-1	MW-1	Total/NA	Water	PrecSep_0	
490-127934-2	MW-2	Total/NA	Water	PrecSep_0	
490-127934-3	MW-3A	Total/NA	Water	PrecSep_0	
490-127934-4	MW-4	Total/NA	Water	PrecSep_0	
490-127934-5	MW-5	Total/NA	Water	PrecSep_0	
490-127934-6	MW-6	Total/NA	Water	PrecSep_0	
490-127934-7	DUPE	Total/NA	Water	PrecSep_0	
490-127934-8	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-308161/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-308161/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-308161/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: MW-1

Date Collected: 05/02/17 09:20
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-1

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			430555	05/17/17 06:33	JHS	TAL NSH
Total/NA	Analysis	9056A		2			431114	05/18/17 16:27	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 13:33	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 17:30	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:50	CAH	TAL NSH
Total/NA	Analysis	9040C		1			429336	05/11/17 16:05	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.42 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.42 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:42	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 05/02/17 15:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-2

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			430555	05/17/17 06:51	JHS	TAL NSH
Total/NA	Analysis	9056A		10			430555	05/17/17 07:09	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 13:39	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 17:35	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:53	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430100	05/15/17 15:59	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.01 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.01 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 05/02/17 14:10
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-3

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			430555	05/17/17 07:27	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 17:21	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 13:59	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 17:40	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:56	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430100	05/15/17 15:59	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.41 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.41 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 05/02/17 13:25
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-4

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			430555	05/17/17 01:29	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 13:40	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 14:04	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 17:45	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:59	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430100	05/15/17 15:59	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.19 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.19 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: MW-5

Date Collected: 05/02/17 12:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-5

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			430555	05/17/17 02:23	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 13:58	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 14:10	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 17:50	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 17:03	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430108	05/15/17 16:14	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.75 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.75 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 05/02/17 11:00
Date Received: 05/06/17 13:04

Lab Sample ID: 490-127934-6

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			430555	05/17/17 02:41	JHS	TAL NSH
Total/NA	Analysis	9056A		20			430936	05/17/17 23:59	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 14:15	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 14:15	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 17:55	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 17:06	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430108	05/15/17 16:14	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.69 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.69 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-127934-7

Date Collected: 05/02/17 11:30
Matrix: Water
Date Received: 05/06/17 13:04

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			430555	05/17/17 02:59	JHS	TAL NSH
Total/NA	Analysis	9056A		10			430936	05/18/17 00:35	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 14:40	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 14:20	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 18:00	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 17:09	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430108	05/15/17 16:14	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.79 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:50	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.79 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	RTM	TAL SL

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-127934-8

Date Collected: 05/02/17 15:30
Matrix: Water
Date Received: 05/06/17 13:04

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			430555	05/17/17 03:16	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	211368	05/16/17 15:31	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			211658	05/18/17 14:26	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	211366	05/16/17 15:26	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	212101	05/23/17 18:05	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 17:12	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430108	05/15/17 16:14	KR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427893	05/09/17 17:06	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.38 mL	1.0 g	308074	05/10/17 09:02	LDE	TAL SL
Total/NA	Analysis	903.0		1			311519	06/01/17 05:50	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.38 mL	1.0 g	308161	05/10/17 14:38	BME	TAL SL
Total/NA	Analysis	904.0		1			310444	05/25/17 10:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311762	06/02/17 12:09	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: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

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: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

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	06-30-17

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
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	06-30-17
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-17
Pennsylvania	NELAP	3	02-00416	04-30-18
South Carolina	State Program	4	89014	04-30-17 *
Texas	NELAP	6	T104704528-15-2	03-31-18
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17 *
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

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	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-17 *
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17

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

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

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
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17 *
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-17 *
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-127934 Chain of Custody

Cooler Received/Opened On 5/5/2017 @ 1005

Time Samples Removed From Cooler 1134 Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 6069 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_160406069_ pH Strip Lot HC695560 Chlorine Strip Lot 01/2017

2. Temperature of rep. sample or temp blank when opened: 0.9 *Degrees Celsius*

3. If Item #2 temperatures 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) _____

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) AS

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) _____

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) _____

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

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
127934

COOLER RECEIPT FORM

Cooler Received/Opened On 05-05-2017 @ 10:05

Time Samples Removed From Cooler 1146 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 6075 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 14740456 pH Strip Lot HC695560 Chlorine Strip Lot 611217

2. Temperature of rep. sample or temp blank when opened: 5.1 *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 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) _____

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) AJ

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) _____

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) _____

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

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

6/2/2017

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
127934

COOLER RECEIPT FORM

Cooler Received/Opened On 05-05-2017 @ 10:05

Time Samples Removed From Cooler 1152 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 6140 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 97310166 pH Strip Lot HC495640 Chlorine Strip Lot 01/2017

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: 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) _____

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) AS

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) _____

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) _____

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

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
127934

COOLER RECEIPT FORM

Cooler Received/Opened On 05-05-2017 @ 10:05

Time Samples Removed From Cooler 1138 Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 6106 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 31470366 pH Strip Lot HC695566 Chlorine Strip Lot 011217

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 (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) AO

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) _____

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) _____

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

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

6/2/2017

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: 05/04/2017**	COC No:
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: GL CCR Groundwater-Round 6/1st Semi-Annual	☐ 1 week			
Site: Sebree Station, Green Landfill (GL)	☐ 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, 9056A_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
MW-1	5/2/17	920	G	Water	8	N	N	x	x	x	x	x	x	
MW-2	5/2/17	1500	G	Water	8	N	N	x	x	x	x	x	x	
MW-3A	5/2/17	1410	G	Water	8	N	N	x	x	x	x	x	x	sample bottles labeled as MW-3 are same as MW-3A
MW-4	5/2/17	1325	G	Water	8	N	N	x	x	x	x	x	x	
MW-5	5/2/17	1200	G	Water	8	N	N	x	x	x	x	x	x	
MW-6	5/2/17	1100	G	Water	8	N	N	x	x	x	x	x	x	
DUPE	5/2/17	1130	G	Water	8	N	N	x	x	x	x	x	x	
FIELD BLANK	5/2/17	1530	G	Water	8	N	N	x	x	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____								4	4	3	7	3	7	

Loc: 490
127934

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 Chapter 45 (Kentucky Special Waste Regulations.) See attached constituent lists for analysis. Please compile two separate reports (1 report for each attached constituent list) for the CCR and Semi-Annual data results.

0.9

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: 5/4/2017 1430	Received by:	Company: TAN	Date/Time: 5-5-17 1005
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:



Ref: S490-68259
Dep:
Date: 08May17
Wgt: 10.00 LBS
DV:
0.00
SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00
Svcs: PRIORITY OVERNIGHT Master 7346 1352 0422
TRCK: 7346 1352 0422
IF THIS
IS
TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Part # 159470-434 RIT2 EXP 02/18
Signed
Date
ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US
SHIP DATE: 08MAY17
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: S490-68259
FedEx Express
1 of 4
TRK# 0201 7346 1352 0422
MASTER
EV AGCA
TUE - 09 MAY 10:30A
PRIORITY OVERNIGHT
15238
PA-US PIT
Uncorrected temp 2.4 °C
Thermometer ID 12
CF 0 Initials TB
PT-WI-SR-001 effective 7/26/13
490-127934 Waybill



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Part # 138-0434 RIT2 EXP 02/18

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 08MAY17
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: S490-68259

FedEx Express

2 of 4
MPS# 0263 7346 1352 0433
Mstr# 7346 1352 0422
0201

TUE - 09 MAY 10:30A
PRIORITY OVERNIGHT

EV AGCA

15238
PA-US PIT

Uncorrected temp 12.0 °C
Thermometer ID 12
CF 0 Initials TJ

No Ice

PT-WI-SR-001 effective 7/26/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Date 5-8-17
Signed



ORIGIN ID:RNCA (615) 726-0177
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REF: S490-68259

FedEx Express

3 of 4
MPS# 0263 7346 1352 0444
Mstr# 7346 1352 0422

TUE - 09 MAY 10:30A
PRIORITY OVERNIGHT

0201

EV AGCA

15238
PA US PIT

Uncorrected temp 1.5 °C
Thermometer ID 12
CF 0 Initials TJ

PT-WI-SR-001 effective 7/26/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Signed
Date 5/9/17

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

Chain of Custody Record

490-127934 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		No: 37096.1
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 #: 490-127934-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/17/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: GL CCR Groundwater-Round 6	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

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)	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 (490-127934-1)	5/2/17	09:20 Eastern		Water			X	X	X	2	Historical Review required
MW-2 (490-127934-2)	5/2/17	15:00 Eastern		Water			X	X	X	2	Historical Review required
MW-3A (490-127934-3)	5/2/17	14:10 Eastern		Water			X	X	X	2	Historical Review required
MW-4 (490-127934-4)	5/2/17	13:25 Eastern		Water			X	X	X	2	Historical Review required
MW-5 (490-127934-5)	5/2/17	12:00 Eastern		Water			X	X	X	2	Historical Review required
MW-6 (490-127934-6)	5/2/17	11:00 Eastern		Water			X	X	X	2	Historical Review required
DUPE (490-127934-7)	5/2/17	11:30 Eastern		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-127934-8)	5/2/17	15:30 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 *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: 5.8.17	Company: AW	Received by:	Date/Time: 5/9/17 0905	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:

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

Chain of Custody Record

490-127934 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	COC No: 490-57098.1
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 #: 490-127934-2
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 5/17/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: GL CCR Groundwater 1st SemiAnnual 2017	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 (490-127934-1)	5/2/17	09:20 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-127934-2)	5/2/17	15:00 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-3A (490-127934-3)	5/2/17	14:10 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-127934-4)	5/2/17	13:25 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-127934-5)	5/2/17	12:00 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-127934-6)	5/2/17	11:00 Eastern		Water			X	X	1	Metals - run once, upload together.
DUPE (490-127934-7)	5/2/17	11:30 Eastern		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-127934-8)	5/2/17	15:30 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 *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
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/9/17 900	Company TAN
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:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-127934-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 127934
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: 490-127934-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 127934
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 05/09/17 10:51 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.	False	
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: 490-127934-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 127934
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 05/09/17 12:34 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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0,18.0
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?	N/A	
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: GL CCR Groundwater-Round 6

TestAmerica Job ID: 490-127934-1
SDG: Sebree Station, Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-127934-1	MW-1	92.3
490-127934-2	MW-2	95.9
490-127934-3	MW-3A	89.4
490-127934-4	MW-4	89.7
490-127934-5	MW-5	89.4
490-127934-6	MW-6	92.0
490-127934-7	DUPE	92.0
490-127934-8	FIELD BLANK	98.8
LCS 160-308074/2-A	Lab Control Sample	96.8
LCSD 160-308074/3-A	Lab Control Sample Dup	99.4
MB 160-308074/1-A	Method Blank	95.6

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-127934-1	MW-1	92.3	87.1
490-127934-2	MW-2	95.9	86.4
490-127934-3	MW-3A	89.4	85.6
490-127934-4	MW-4	89.7	78.1
490-127934-5	MW-5	89.4	78.1
490-127934-6	MW-6	92.0	77.0
490-127934-7	DUPE	92.0	85.6
490-127934-8	FIELD BLANK	98.8	77.8
LCS 160-308161/2-A	Lab Control Sample	96.8	74.0
LCSD 160-308161/3-A	Lab Control Sample Dup	99.4	86.7
MB 160-308161/1-A	Method Blank	95.6	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-134486-1
TestAmerica SDG: Sebree Station, Green Landfill (GL)
Client Project/Site: GL CCR Groundwater-Round 7
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
9/12/2017 2:17:39 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-134486-1	MW-1	Water	08/07/17 10:50	08/10/17 18:07
490-134486-2	MW-2	Water	08/08/17 14:00	08/10/17 18:07
490-134486-3	MW-3A	Water	08/08/17 12:30	08/10/17 18:07
490-134486-4	MW-4	Water	08/08/17 11:00	08/10/17 18:07
490-134486-5	MW-5	Water	08/07/17 14:10	08/10/17 18:07
490-134486-6	MW-6	Water	08/07/17 12:20	08/10/17 18:07
490-134486-7	DUPE	Water	08/08/17 12:52	08/10/17 18:07
490-134486-8	BLANK	Water	08/08/17 14:30	08/10/17 18:07

Job ID: 490-134486-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-134486-1

Comments
No additional comments.

Receipt
The samples were received on 8/10/2017 9:56 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.3º C, 0.7º C and 2.8º C.

HPLC/IC
Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-1 (490-134486-1), MW-2 (490-134486-2), MW-3A (490-134486-3), MW-4 (490-134486-4), MW-5 (490-134486-5), MW-6 (490-134486-6) and DUPE (490-134486-7). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-452900 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 490-452900 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 490-453511 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.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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-1

Date Collected: 08/07/17 10:50
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.12	B F1	3.00	0.200	mg/L			08/15/17 19:44	1
Fluoride	0.553	J F1	1.00	0.0100	mg/L			08/15/17 19:44	1
Sulfate	25.3	B	25.0	0.150	mg/L			08/17/17 18:01	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0314	J	0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00297	B	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:08	1
Arsenic	0.000635	J	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:08	1
Barium	0.0698	J	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:08	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:08	1
Boron	1.85	B	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:08	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:08	1
Calcium	27.1		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:08	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:08	1
Cobalt	0.000759	J	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:08	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:08	1
Molybdenum	0.00148	J	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:08	1
Selenium	0.000652	J	0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:08	1
Thallium	0.0000830	J	0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.45		0.100	0.100	SU			08/14/17 12:32	1
Temperature	22.7		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	614		10.0	7.00	mg/L			08/10/17 21:40	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	0.214		0.0845	0.0867	1.00	0.0841	pCi/L	08/15/17 12:16	09/06/17 06:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:13*	*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	0.277	U	0.209	0.211	1.00	0.327	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Client Sample ID: MW-1
Date Collected: 08/07/17 10:50
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.5		40 - 110	08/15/17 12:46	08/24/17 13:21	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	0.491		0.226	0.228	5.00	0.327	pCi/L		09/08/17 11:51	1

Client Sample ID: MW-2

Date Collected: 08/08/17 14:00
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**145**	**B**	60.0	4.00	mg/L			08/15/17 20:27	20
Fluoride	**0.505**	**J**	1.00	0.0100	mg/L			08/15/17 20:16	1
Sulfate	**92.0**	**J**	100	0.600	mg/L			08/15/17 20:27	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.00992**	**J**	0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00255**	**B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:13	1
Arsenic	**0.0381**		0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:13	1
Barium	**0.308**		0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:13	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:13	1
Boron	**0.113**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:13	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:13	1
Calcium	**154**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:13	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:13	1
Cobalt	**0.000672**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:13	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:13	1
Molybdenum	**0.00282**	**J**	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:13	1
Selenium	**0.000447**	**J**	0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:13	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.77**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.6**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	**913**		10.0	7.00	mg/L			08/10/17 21:40	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	**0.481**		0.120	0.127	1.00	0.0810	pCi/L	08/15/17 12:16	09/06/17 06:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:13*	*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	**0.487**		0.237	0.241	1.00	0.348	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Client Sample ID: MW-2
Date Collected: 08/08/17 14:00
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.0		40 - 110	08/15/17 12:46	08/24/17 13:21	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	0.968		0.266	0.273	5.00	0.348	pCi/L		09/08/17 11:51	1

Client Sample ID: MW-3A

Date Collected: 08/08/17 12:30
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1790**	**B**	600	40.0	mg/L			08/17/17 18:11	200
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 20:38	1
Sulfate	**942**		500	3.00	mg/L			08/15/17 20:59	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.767**		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00154**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:17	1
Arsenic	**0.000298**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:17	1
Barium	**0.0429**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:17	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:17	1
Boron	**0.304**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:17	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:17	1
Calcium	**421**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:17	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:17	1
Cobalt	**0.00334**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:17	1
Lead	**0.000118**	**J**	0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:17	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:17	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:17	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.81**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	**5010**		100	70.0	mg/L			08/10/17 21:40	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	**0.357**		0.0997	0.105	1.00	0.0712	pCi/L	08/15/17 12:16	09/06/17 06:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:14*	*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	**1.17**		0.282	0.302	1.00	0.335	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Client Sample ID: MW-3A
Date Collected: 08/08/17 12:30
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	08/15/17 12:46	08/24/17 13:21	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	1.53		0.300	0.320	5.00	0.335	pCi/L		09/08/17 11:51	1

Client Sample ID: MW-4

Date Collected: 08/08/17 11:00
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1360**	**B**	300	20.0	mg/L			08/17/17 18:20	100
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 21:10	1
Sulfate	**1600**	**B**	500	3.00	mg/L			08/17/17 18:20	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**1.77**		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00111**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:22	1
Arsenic	**0.000318**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:22	1
Barium	**0.0251**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:22	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:22	1
Boron	**2.51**	**B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:22	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:22	1
Calcium	**743**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:22	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:22	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:22	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:22	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:22	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:22	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.825**		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.84**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	**4890**		40.0	28.0	mg/L			08/10/17 21:40	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	**0.363**		0.108	0.113	1.00	0.0892	pCi/L	08/15/17 12:16	09/06/17 06:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:14*	*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	**1.57**		0.308	0.340	1.00	0.309	pCi/L	08/15/17 12:46	08/24/17 13:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:22*	*1*

Client Sample ID: MW-4
Date Collected: 08/08/17 11:00
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	08/15/17 12:46	08/24/17 13:22	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	1.94		0.326	0.358	5.00	0.309	pCi/L		09/08/17 11:51	1

Client Sample ID: MW-5

Date Collected: 08/07/17 14:10
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**945**	**B**	150	10.0	mg/L			08/15/17 21:42	50
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 21:32	1
Sulfate	**2060**	**B**	1000	6.00	mg/L			08/17/17 18:30	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.405**		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000834**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:27	1
Arsenic	**0.000141**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:27	1
Barium	**0.0149**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:27	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:27	1
Boron	**0.257**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:27	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:27	1
Calcium	**423**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:27	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:27	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:27	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:27	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:27	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:27	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**3.51**		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.87**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.5**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	**4130**		40.0	28.0	mg/L			08/10/17 21:40	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	**0.112**		0.0679	0.0686	1.00	0.0876	pCi/L	08/15/17 12:16	09/06/17 06:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:14*	*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	**1.43**		0.310	0.337	1.00	0.361	pCi/L	08/15/17 12:46	08/24/17 13:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:22*	*1*

Client Sample ID: MW-5
Date Collected: 08/07/17 14:10
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.7		40 - 110	08/15/17 12:46	08/24/17 13:22	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	1.54		0.317	0.344	5.00	0.361	pCi/L		09/08/17 11:51	1

Client Sample ID: MW-6

Date Collected: 08/07/17 12:20
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**128**	**B**	60.0	4.00	mg/L			08/15/17 22:36	20
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 22:25	1
Sulfate	**2820**	**B**	1000	6.00	mg/L			08/17/17 18:40	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0589**		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000815**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:44	1
Arsenic	**0.000357**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:44	1
Barium	**0.00840**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:44	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:44	1
Boron	**0.167**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:44	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:44	1
Calcium	**365**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:44	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:44	1
Cobalt	**0.000189**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:44	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:44	1
Molybdenum	**0.00162**	**J**	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:44	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:44	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:44	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.76**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.5**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	**4830**		40.0	28.0	mg/L			08/10/17 21:40	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	0.0215	U	0.0503	0.0503	1.00	0.0928	pCi/L	08/15/17 12:16	09/06/17 06:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:14*	*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	**0.441**		0.229	0.232	1.00	0.336	pCi/L	08/15/17 12:46	08/24/17 13:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:22*	*1*

Client Sample ID: MW-6
Date Collected: 08/07/17 12:20
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-6
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.5		40 - 110	08/15/17 12:46	08/24/17 13:22	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	0.462		0.234	0.238	5.00	0.336	pCi/L		09/08/17 11:51	1

Client Sample ID: DUPE

Date Collected: 08/08/17 12:52
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2310**	**B**	600	40.0	mg/L			08/17/17 18:50	200
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 22:58	1
Sulfate	**1300**		500	3.00	mg/L			08/15/17 23:19	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.768**		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 16:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000713**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:49	1
Arsenic	**0.000301**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:49	1
Barium	**0.0465**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:49	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:49	1
Boron	**0.293**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:49	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:49	1
Calcium	**438**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:49	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:49	1
Cobalt	**0.00290**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:49	1
Lead	**0.0000720**	**J**	0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:49	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:49	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:49	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 16:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.81**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.5**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	**5170**		100	70.0	mg/L			08/10/17 21:40	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	**0.399**		0.105	0.111	1.00	0.0736	pCi/L	08/15/17 12:16	09/06/17 06:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:15*	*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	**0.896**		0.247	0.261	1.00	0.295	pCi/L	08/15/17 12:46	08/24/17 13:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:22*	*1*

Client Sample ID: DUPE
Date Collected: 08/08/17 12:52
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-7
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	08/15/17 12:46	08/24/17 13:22	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	1.29		0.269	0.283	5.00	0.295	pCi/L		09/08/17 11:51	1

Client Sample ID: BLANK

Date Collected: 08/08/17 14:30
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.408**	**J B**	3.00	0.200	mg/L			08/15/17 23:30	1
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 23:30	1
Sulfate	ND		5.00	0.0300	mg/L			08/15/17 23:30	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		09/01/17 08:07	09/05/17 16:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000565**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 00:54	1
Arsenic	ND		0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 00:54	1
Barium	ND		0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 00:54	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 00:54	1
Boron	**0.0202**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 00:54	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 00:54	1
Calcium	**0.0464**	**J**	1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 00:54	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 00:54	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 00:54	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 00:54	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 00:54	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 00:54	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 00:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.45**		0.100	0.100	SU			08/14/17 12:32	1
Temperature	**22.7**		0.100	0.100	Degrees C			08/14/17 12:32	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/10/17 21:40	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	-0.0130	U	0.0365	0.0365	1.00	0.0866	pCi/L	08/15/17 12:16	09/06/17 06:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:15*	*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	0.231	U	0.180	0.182	1.00	0.282	pCi/L	08/15/17 12:46	08/24/17 13:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:22*	*1*

Client Sample ID: BLANK
Date Collected: 08/08/17 14:30
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-8
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*90.1*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:22*	*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	0.218	U	0.184	0.185	5.00	0.282	pCi/L		09/08/17 11:51	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-452900/3
Matrix: Water
Analysis Batch: 452900

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3894	J	3.00	0.200	mg/L			08/15/17 19:12	1
Fluoride	ND		1.00	0.0100	mg/L			08/15/17 19:12	1
Sulfate	ND		5.00	0.0300	mg/L			08/15/17 19:12	1

Lab Sample ID: LCS 490-452900/4
Matrix: Water
Analysis Batch: 452900

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	9.017		mg/L		90	80 - 120
Fluoride	1.00	0.9339	J	mg/L		93	80 - 120
Sulfate	10.0	8.851		mg/L		88	80 - 120

Lab Sample ID: LCSD 490-452900/5
Matrix: Water
Analysis Batch: 452900

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	9.023		mg/L		90	80 - 120	0	20
Fluoride	1.00	0.9453	J	mg/L		94	80 - 120	1	20
Sulfate	10.0	8.865		mg/L		89	80 - 120	0	20

Lab Sample ID: 490-134486-1 MS
Matrix: Water
Analysis Batch: 452900

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	5.12	B F1	2.00	5.918	F1	mg/L		40	80 - 120
Fluoride	0.553	J F1	0.200	0.6284	J F1	mg/L		38	80 - 120
Sulfate	28.6	E	2.00	24.66	E 4	mg/L		-197	80 - 120

Lab Sample ID: 490-134486-1 MSD
Matrix: Water
Analysis Batch: 452900

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	5.12	B F1	2.00	6.117	F1	mg/L		50	80 - 120	3	20
Fluoride	0.553	J F1	0.200	0.6495	J F1	mg/L		48	80 - 120	3	20
Sulfate	28.6	E	2.00	24.47	E 4	mg/L		-207	80 - 120	1	20

Lab Sample ID: MB 490-453511/3
Matrix: Water
Analysis Batch: 453511

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4508	J	3.00	0.200	mg/L			08/17/17 17:31	1
Fluoride	ND		1.00	0.0100	mg/L			08/17/17 17:31	1
Sulfate	0.4023	J	5.00	0.0300	mg/L			08/17/17 17:31	1

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

Lab Sample ID: LCS 490-453511/4
Matrix: Water
Analysis Batch: 453511

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	9.519		mg/L		95	80 - 120
Fluoride	1.00	0.9127	J	mg/L		91	80 - 120
Sulfate	10.0	9.788		mg/L		98	80 - 120

Lab Sample ID: LCSD 490-453511/5
Matrix: Water
Analysis Batch: 453511

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	9.660		mg/L		96	80 - 120	1	20
Fluoride	1.00	0.9188	J	mg/L		92	80 - 120	1	20
Sulfate	10.0	9.958		mg/L		99	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-221801/1-A
Matrix: Water
Analysis Batch: 222099

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 14:24	1

Lab Sample ID: LCS 180-221801/2-A
Matrix: Water
Analysis Batch: 222099

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.041		mg/L		104	80 - 120

Lab Sample ID: 490-134486-8 MS
Matrix: Water
Analysis Batch: 222099

Client Sample ID: BLANK
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	1.028		mg/L		103	75 - 125

Lab Sample ID: 490-134486-8 MSD
Matrix: Water
Analysis Batch: 222099

Client Sample ID: BLANK
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	1.037		mg/L		104	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-222124/1-A
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00006300	J	0.00200	0.0000213	mg/L		09/06/17 08:26	09/06/17 23:59	1
Arsenic	ND		0.00500	0.000118	mg/L		09/06/17 08:26	09/06/17 23:59	1
Barium	ND		0.200	0.000270	mg/L		09/06/17 08:26	09/06/17 23:59	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/06/17 23:59	1
Boron	0.04428	J	1.00	0.00339	mg/L		09/06/17 08:26	09/06/17 23:59	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/06/17 23:59	1
Calcium	ND		1.00	0.0412	mg/L		09/06/17 08:26	09/06/17 23:59	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/06/17 23:59	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/06/17 08:26	09/06/17 23:59	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/06/17 23:59	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/06/17 23:59	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/06/17 23:59	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/06/17 23:59	1

Lab Sample ID: LCS 180-222124/2-A
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5099		mg/L		102	80 - 120
Arsenic	0.0400	0.03868		mg/L		97	80 - 120
Barium	2.00	1.838		mg/L		92	80 - 120
Beryllium	0.0500	0.05233		mg/L		105	80 - 120
Boron	1.00	1.048		mg/L		105	80 - 120
Cadmium	0.0500	0.05266		mg/L		105	80 - 120
Calcium	50.0	47.86		mg/L		96	80 - 120
Chromium	0.200	0.1715		mg/L		86	80 - 120
Cobalt	0.500	0.4590		mg/L		92	80 - 120
Lead	0.0200	0.02033		mg/L		102	80 - 120
Molybdenum	1.00	1.037		mg/L		104	80 - 120
Selenium	0.0100	0.009554	J	mg/L		96	80 - 120
Thallium	0.0500	0.04884		mg/L		98	80 - 120

Lab Sample ID: 180-69810-C-7-B MS
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000796	J B	0.500	0.4879		mg/L		97	75 - 125
Arsenic	0.0260	F1	0.0400	0.05337	F1	mg/L		68	75 - 125
Barium	1.04		2.00	2.890		mg/L		93	75 - 125
Beryllium	0.00508		0.0500	0.05662		mg/L		103	75 - 125
Boron	0.0885	J B	1.00	0.9851	J	mg/L		90	75 - 125
Cadmium	0.00359		0.0500	0.05297		mg/L		99	75 - 125
Calcium	119		50.0	163.0		mg/L		89	75 - 125
Chromium	0.0136		0.200	0.1739		mg/L		80	75 - 125
Cobalt	0.0525	F1	0.500	0.4192	F1	mg/L		73	75 - 125
Lead	0.193		0.0200	0.2390	4	mg/L		230	75 - 125

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

Lab Sample ID: 180-69810-C-7-B MS
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	ND		1.00	0.9267		mg/L		93	75 - 125
Selenium	0.00197	J F1	0.0100	0.009186	J F1	mg/L		72	75 - 125
Thallium	0.000196	J	0.0500	0.04906		mg/L		98	75 - 125

Lab Sample ID: 180-69810-C-7-C MSD
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000796	J B	0.500	0.4895		mg/L		98	75 - 125	0	20
Arsenic	0.0260	F1	0.0400	0.05272	F1	mg/L		67	75 - 125	1	20
Barium	1.04		2.00	2.901		mg/L		93	75 - 125	0	20
Beryllium	0.00508		0.0500	0.05768		mg/L		105	75 - 125	2	20
Boron	0.0885	J B	1.00	1.013		mg/L		92	75 - 125	3	20
Cadmium	0.00359		0.0500	0.05332		mg/L		99	75 - 125	1	20
Calcium	119		50.0	164.2		mg/L		91	75 - 125	1	20
Chromium	0.0136		0.200	0.1740		mg/L		80	75 - 125	0	20
Cobalt	0.0525	F1	0.500	0.4232	F1	mg/L		74	75 - 125	1	20
Lead	0.193		0.0200	0.2369	4	mg/L		220	75 - 125	1	20
Molybdenum	ND		1.00	0.9295		mg/L		93	75 - 125	0	20
Selenium	0.00197	J F1	0.0100	0.009346	J F1	mg/L		74	75 - 125	2	20
Thallium	0.000196	J	0.0500	0.04874		mg/L		97	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-452586/1-A
Matrix: Water
Analysis Batch: 453207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452586

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 15:57	1

Lab Sample ID: LCS 490-452586/2-A
Matrix: Water
Analysis Batch: 453207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452586

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.027		ug/L		103	80 - 120

Lab Sample ID: 490-134486-1 MS
Matrix: Water
Analysis Batch: 453207

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 452586

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.051		ug/L		105	75 - 125

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

Lab Sample ID: 490-134486-1 MSD
Matrix: Water
Analysis Batch: 453207

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 452586

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9890		ug/L		99	75 - 125	6	20

Method: 9040C - pH

Lab Sample ID: LCS 490-452536/1
Matrix: Water
Analysis Batch: 452536

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	6.970		SU		100	98 - 103

Lab Sample ID: 490-134428-M-1 DU
Matrix: Water
Analysis Batch: 452536

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.00		7.040		SU		0.6	20
Temperature	22.9		22.90		Degrees C		0	20

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

Lab Sample ID: MB 490-450140/1
Matrix: Water
Analysis Batch: 450140

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			08/10/17 21:40	1

Lab Sample ID: LCS 490-450140/2
Matrix: Water
Analysis Batch: 450140

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: 490-134420-B-1 DU
Matrix: Water
Analysis Batch: 450140

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	106		108.0		mg/L		2	20

Lab Sample ID: 490-134472-C-1 DU
Matrix: Water
Analysis Batch: 450140

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	4750		4660		mg/L		2	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-322286/1-A
Matrix: Water
Analysis Batch: 325781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322286

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06065	U	0.0521	0.0524	1.00	0.0753	pCi/L	08/15/17 12:16	09/06/17 06:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:11*	*1*

Lab Sample ID: LCS 160-322286/2-A
Matrix: Water
Analysis Batch: 325781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322286

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.156		0.956	1.00	0.0864	pCi/L	95	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: 400-141718-C-4-B MS
Matrix: Water
Analysis Batch: 325781

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 322286

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0920		9.60	9.918		1.03	1.00	0.0769	pCi/L	102	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*92.3*		*40 - 110*

Lab Sample ID: 400-141718-C-4-C MSD
Matrix: Water
Analysis Batch: 325781

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 322286

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	0.0920		9.61	10.51		1.08	1.00	0.0772	pCi/L	108	75 - 138	0.28	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.1*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-322289/1-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322289

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.06060	U	0.174	0.174	1.00	0.303	pCi/L	08/15/17 12:46	08/24/17 13:20	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*
Y Carrier	*86.7*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*

Lab Sample ID: LCS 160-322289/2-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322289

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.0	13.49		1.43	1.00	0.256	pCi/L	104	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*90.1*		*40 - 110*

Lab Sample ID: 400-141718-C-4-E MS
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 322289

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.435		13.0	16.11		1.71	1.00	0.370	pCi/L	121	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*92.3*		*40 - 110*
Y Carrier	*83.0*		*40 - 110*

Lab Sample ID: 400-141718-C-4-F MSD
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 322289

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	0.435		13.0	14.19		1.53	1.00	0.359	pCi/L	106	45 - 150	0.59	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.1*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

HPLC/IC

Analysis Batch: 452900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	9056A	
490-134486-2	MW-2	Total/NA	Water	9056A	
490-134486-2	MW-2	Total/NA	Water	9056A	
490-134486-3	MW-3A	Total/NA	Water	9056A	
490-134486-3	MW-3A	Total/NA	Water	9056A	
490-134486-4	MW-4	Total/NA	Water	9056A	
490-134486-5	MW-5	Total/NA	Water	9056A	
490-134486-5	MW-5	Total/NA	Water	9056A	
490-134486-6	MW-6	Total/NA	Water	9056A	
490-134486-6	MW-6	Total/NA	Water	9056A	
490-134486-7	DUPE	Total/NA	Water	9056A	
490-134486-7	DUPE	Total/NA	Water	9056A	
490-134486-8	BLANK	Total/NA	Water	9056A	
MB 490-452900/3	Method Blank	Total/NA	Water	9056A	
LCS 490-452900/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-452900/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-134486-1 MS	MW-1	Total/NA	Water	9056A	
490-134486-1 MSD	MW-1	Total/NA	Water	9056A	

Analysis Batch: 453511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	9056A	
490-134486-3	MW-3A	Total/NA	Water	9056A	
490-134486-4	MW-4	Total/NA	Water	9056A	
490-134486-5	MW-5	Total/NA	Water	9056A	
490-134486-6	MW-6	Total/NA	Water	9056A	
490-134486-7	DUPE	Total/NA	Water	9056A	
MB 490-453511/3	Method Blank	Total/NA	Water	9056A	
LCS 490-453511/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-453511/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 221801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total Recoverable	Water	3005A	
490-134486-2	MW-2	Total Recoverable	Water	3005A	
490-134486-3	MW-3A	Total Recoverable	Water	3005A	
490-134486-4	MW-4	Total Recoverable	Water	3005A	
490-134486-5	MW-5	Total Recoverable	Water	3005A	
490-134486-6	MW-6	Total Recoverable	Water	3005A	
490-134486-7	DUPE	Total Recoverable	Water	3005A	
490-134486-8	BLANK	Total Recoverable	Water	3005A	
MB 180-221801/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-221801/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-134486-8 MS	BLANK	Total Recoverable	Water	3005A	
490-134486-8 MSD	BLANK	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 222099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total Recoverable	Water	6010C	221801
490-134486-2	MW-2	Total Recoverable	Water	6010C	221801
490-134486-3	MW-3A	Total Recoverable	Water	6010C	221801
490-134486-4	MW-4	Total Recoverable	Water	6010C	221801
490-134486-5	MW-5	Total Recoverable	Water	6010C	221801
490-134486-6	MW-6	Total Recoverable	Water	6010C	221801
490-134486-7	DUPE	Total Recoverable	Water	6010C	221801
490-134486-8	BLANK	Total Recoverable	Water	6010C	221801
MB 180-221801/1-A	Method Blank	Total Recoverable	Water	6010C	221801
LCS 180-221801/2-A	Lab Control Sample	Total Recoverable	Water	6010C	221801
490-134486-8 MS	BLANK	Total Recoverable	Water	6010C	221801
490-134486-8 MSD	BLANK	Total Recoverable	Water	6010C	221801

Prep Batch: 222124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total Recoverable	Water	3005A	
490-134486-2	MW-2	Total Recoverable	Water	3005A	
490-134486-3	MW-3A	Total Recoverable	Water	3005A	
490-134486-4	MW-4	Total Recoverable	Water	3005A	
490-134486-5	MW-5	Total Recoverable	Water	3005A	
490-134486-6	MW-6	Total Recoverable	Water	3005A	
490-134486-7	DUPE	Total Recoverable	Water	3005A	
490-134486-8	BLANK	Total Recoverable	Water	3005A	
MB 180-222124/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-222124/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-69810-C-7-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-69810-C-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 222307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total Recoverable	Water	6020A	222124
490-134486-2	MW-2	Total Recoverable	Water	6020A	222124
490-134486-3	MW-3A	Total Recoverable	Water	6020A	222124
490-134486-4	MW-4	Total Recoverable	Water	6020A	222124
490-134486-5	MW-5	Total Recoverable	Water	6020A	222124
490-134486-6	MW-6	Total Recoverable	Water	6020A	222124
490-134486-7	DUPE	Total Recoverable	Water	6020A	222124
490-134486-8	BLANK	Total Recoverable	Water	6020A	222124
MB 180-222124/1-A	Method Blank	Total Recoverable	Water	6020A	222124
LCS 180-222124/2-A	Lab Control Sample	Total Recoverable	Water	6020A	222124
180-69810-C-7-B MS	Matrix Spike	Total Recoverable	Water	6020A	222124
180-69810-C-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	222124

Prep Batch: 452586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	7470A	
490-134486-2	MW-2	Total/NA	Water	7470A	
490-134486-3	MW-3A	Total/NA	Water	7470A	
490-134486-4	MW-4	Total/NA	Water	7470A	
490-134486-5	MW-5	Total/NA	Water	7470A	
490-134486-6	MW-6	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 452586 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-7	DUPE	Total/NA	Water	7470A	
490-134486-8	BLANK	Total/NA	Water	7470A	
MB 490-452586/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-452586/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-134486-1 MS	MW-1	Total/NA	Water	7470A	
490-134486-1 MSD	MW-1	Total/NA	Water	7470A	

Analysis Batch: 453207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	7470A	452586
490-134486-2	MW-2	Total/NA	Water	7470A	452586
490-134486-3	MW-3A	Total/NA	Water	7470A	452586
490-134486-4	MW-4	Total/NA	Water	7470A	452586
490-134486-5	MW-5	Total/NA	Water	7470A	452586
490-134486-6	MW-6	Total/NA	Water	7470A	452586
490-134486-7	DUPE	Total/NA	Water	7470A	452586
490-134486-8	BLANK	Total/NA	Water	7470A	452586
MB 490-452586/1-A	Method Blank	Total/NA	Water	7470A	452586
LCS 490-452586/2-A	Lab Control Sample	Total/NA	Water	7470A	452586
490-134486-1 MS	MW-1	Total/NA	Water	7470A	452586
490-134486-1 MSD	MW-1	Total/NA	Water	7470A	452586

General Chemistry

Analysis Batch: 450140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	SM 2540C	
490-134486-2	MW-2	Total/NA	Water	SM 2540C	
490-134486-3	MW-3A	Total/NA	Water	SM 2540C	
490-134486-4	MW-4	Total/NA	Water	SM 2540C	
490-134486-5	MW-5	Total/NA	Water	SM 2540C	
490-134486-6	MW-6	Total/NA	Water	SM 2540C	
490-134486-7	DUPE	Total/NA	Water	SM 2540C	
490-134486-8	BLANK	Total/NA	Water	SM 2540C	
MB 490-450140/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-450140/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-134420-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-134472-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 452536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	9040C	
490-134486-2	MW-2	Total/NA	Water	9040C	
490-134486-3	MW-3A	Total/NA	Water	9040C	
490-134486-4	MW-4	Total/NA	Water	9040C	
490-134486-5	MW-5	Total/NA	Water	9040C	
490-134486-6	MW-6	Total/NA	Water	9040C	
490-134486-7	DUPE	Total/NA	Water	9040C	
490-134486-8	BLANK	Total/NA	Water	9040C	
LCS 490-452536/1	Lab Control Sample	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 452536 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134428-M-1 DU	Duplicate	Total/NA	Water	9040C	

Rad

Prep Batch: 322286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	PrecSep-21	
490-134486-2	MW-2	Total/NA	Water	PrecSep-21	
490-134486-3	MW-3A	Total/NA	Water	PrecSep-21	
490-134486-4	MW-4	Total/NA	Water	PrecSep-21	
490-134486-5	MW-5	Total/NA	Water	PrecSep-21	
490-134486-6	MW-6	Total/NA	Water	PrecSep-21	
490-134486-7	DUPE	Total/NA	Water	PrecSep-21	
490-134486-8	BLANK	Total/NA	Water	PrecSep-21	
MB 160-322286/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-322286/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-141718-C-4-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
400-141718-C-4-C MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 322289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134486-1	MW-1	Total/NA	Water	PrecSep_0	
490-134486-2	MW-2	Total/NA	Water	PrecSep_0	
490-134486-3	MW-3A	Total/NA	Water	PrecSep_0	
490-134486-4	MW-4	Total/NA	Water	PrecSep_0	
490-134486-5	MW-5	Total/NA	Water	PrecSep_0	
490-134486-6	MW-6	Total/NA	Water	PrecSep_0	
490-134486-7	DUPE	Total/NA	Water	PrecSep_0	
490-134486-8	BLANK	Total/NA	Water	PrecSep_0	
MB 160-322289/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-322289/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-141718-C-4-E MS	Matrix Spike	Total/NA	Water	PrecSep_0	
400-141718-C-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-1

Date Collected: 08/07/17 10:50
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-1

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		5			453511	08/17/17 18:01	JML	TAL NSH
Total/NA	Analysis	9056A		1			452900	08/15/17 19:44	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:20	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:08	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:02	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.04 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325781	09/06/17 06:13	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.04 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 08/08/17 14:00
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-2

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			452900	08/15/17 20:16	T1C	TAL NSH
Total/NA	Analysis	9056A		20			452900	08/15/17 20:27	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:26	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:13	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:21	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325781	09/06/17 06:13	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: MW-3A

Date Collected: 08/08/17 12:30
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-3

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		200			453511	08/17/17 18:11	JML	TAL NSH
Total/NA	Analysis	9056A		1			452900	08/15/17 20:38	T1C	TAL NSH
Total/NA	Analysis	9056A		100			452900	08/15/17 20:59	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:17	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:24	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.78 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325782	09/06/17 06:14	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.78 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 08/08/17 11:00
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-4

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		100			453511	08/17/17 18:20	JML	TAL NSH
Total/NA	Analysis	9056A		1			452900	08/15/17 21:10	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:36	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:22	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:26	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.33 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325782	09/06/17 06:14	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.33 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: MW-5

Date Collected: 08/07/17 14:10
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-5

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		200			453511	08/17/17 18:30	JML	TAL NSH
Total/NA	Analysis	9056A		1			452900	08/15/17 21:32	T1C	TAL NSH
Total/NA	Analysis	9056A		50			452900	08/15/17 21:42	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:27	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:28	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.63 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325782	09/06/17 06:14	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.63 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 08/07/17 12:20
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-6

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		200			453511	08/17/17 18:40	JML	TAL NSH
Total/NA	Analysis	9056A		1			452900	08/15/17 22:25	T1C	TAL NSH
Total/NA	Analysis	9056A		20			452900	08/15/17 22:36	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:47	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:44	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:31	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.72 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325782	09/06/17 06:14	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.72 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: DUPE

Date Collected: 08/08/17 12:52
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-7

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		200			453511	08/17/17 18:50	JML	TAL NSH
Total/NA	Analysis	9056A		1			452900	08/15/17 22:58	T1C	TAL NSH
Total/NA	Analysis	9056A		100			452900	08/15/17 23:19	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 16:02	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:49	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 16:57	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.46 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325782	09/06/17 06:15	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.46 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	RTM	TAL SL

Client Sample ID: BLANK

Date Collected: 08/08/17 14:30
Date Received: 08/10/17 18:07

Lab Sample ID: 490-134486-8

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			452900	08/15/17 23:30	T1C	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 16:08	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 00:54	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:00	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452536	08/14/17 12:32	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	450140	08/10/17 21:40	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.54 mL	1.0 g	322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	325782	09/06/17 06:15	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.54 mL	1.0 g	322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326387	09/08/17 11:51	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: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

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: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

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	12-31-17
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	09-14-17 *
West Virginia DEP	State Program	3	142	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
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: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

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	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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	06-30-17 *
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	06-30-17 *
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
Washington	State Program	10	C592	08-30-17 *
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

490-134486 Chain of Custody

Cooler Received/Opened On 8/10/2017 @ 09:55

Time Samples Removed From Cooler 18:04 Time Samples Placed In Storage 18:27 (2 Hour Window)

1. Tracking # 7067 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 31470368 pH Strip Lot HC693124 Chlorine Strip Lot 011217

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: 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) VR

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) AS

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) KD

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) KD

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

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

Cooler Received/Opened On 8/10/2017 @ 09:55

Time Samples Removed From Cooler 18:04 Time Samples Placed In Storage 18:27 (2 Hour Window)

1. Tracking # 7034 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 31470368 pH Strip Lot HC693124 Chlorine Strip Lot 011217

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: 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 (initial) MR

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) AS

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) KD

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) KD

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

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

Cooler Received/Opened On 8/10/2017 @ 09:55

Time Samples Removed From Cooler 18:04 Time Samples Placed In Storage 18:27 (2 Hour Window)

1. Tracking # 7090 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 31470368 pH Strip Lot HC693124 Chlorine Strip Lot 011217

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: 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) MK CM2

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) AD

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) KD

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) KD

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

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

9/12/2017

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: 08/09/2017**
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: GL CCR Groundwater-Round 7	☐ 1 week		
Site: Sebree Station, Green Landfill (GL)	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-68817-21291.1
___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	9040C, 9056A_ORGFM_28D	2540C_Calcd - TDS	Sample Specific Notes:
MW-1	8/7/17	1050	G	Water	6	N	N	x	x	x	x	
MW-2	8/8/17	1400	G	Water	6	N	N	x	x	x	x	
MW-3A	8/8/17	1230	G	Water	6	N	N	x	x	x	x	sample bottles labeled as MW-3 are same as MW-3A
MW-4	8/8/17	1100	G	Water	6	N	N	x	x	x	x	
MW-5	8/7/17	1410	G	Water	6	N	N	x	x	x	x	
MW-6	8/7/17	1220	G	Water	6	N	N	x	x	x	x	
DUPE	8/8/17	1252	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	8/8/17	1430	G	Water	6	N	N	x	x	x	x	
								4	4	7	7	

Loc: 490
134486

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 lists 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: 8/9/2017 1530	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: 08-10-2017 09:55

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

0.7, 0.3, 2.8

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

Greg Dick
BREC
8/9/2017
1530

Loc: 490
13486

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 11AUG17
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: S490-71874

FedEx Express

TRK# 0201 7449 8096 3797

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO AGCA

15238
PA-US PIT

Uncorrected temp 0.6 °C
Thermometer ID 12

CF 02 Initials TS

PT-WI-SR-001 effective 7/26/13

490-134486 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: 490-61251.1
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 #: 490-134486-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 9/8/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 49010431			
Project Name: GL CCR Groundwater-Round 7	SSOW#:			
Site: Big Rivers CCR				

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 (490-134486-1)	8/7/17	10:50 Central		Water			X	X	X	2	Historical Review required
MW-2 (490-134486-2)	8/8/17	14:00 Central		Water			X	X	X	2	Historical Review required
MW-3A (490-134486-3)	8/8/17	12:30 Central		Water			X	X	X	2	Historical Review required
MW-4 (490-134486-4)	8/8/17	11:00 Central		Water			X	X	X	2	Historical Review required
MW-5 (490-134486-5)	8/7/17	14:10 Central		Water			X	X	X	2	Historical Review required
MW-6 (490-134486-6)	8/7/17	12:20 Central		Water			X	X	X	2	Historical Review required
DUPE (490-134486-7)	8/8/17	12:52 Central		Water			X	X	X	2	Historical Review required
BLANK (490-134486-8)	8/8/17	14:30 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	Billy Barnes	9-11-17 1130	TAN	Jill Clark	8.12.17 1100	TASR
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:

Met IDD

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

Chain of Custody Record

490-134486 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		No: 61269.1
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 #: 490-134486-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 9/5/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GL CCR Groundwater-Round 7	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)	6010C/3005A (MOD) Lithium	6020A/3006A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-134486-1)	8/7/17	10:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-2 (490-134486-2)	8/8/17	14:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-3A (490-134486-3)	8/8/17	12:30 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-134486-4)	8/8/17	11:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-134486-5)	8/7/17	14:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-134486-6)	8/7/17	12:20 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-134486-7)	8/8/17	12:52 Central		Water			X	X	1	Metals - run once, upload together.
BLANK (490-134486-8)	8/8/17	14:30 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: 9-11-17 1300	Company: TAN	Received by: Shawn Bf	Date/Time: 8/12/17 900	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:

9/12/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-134486-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 134486
List Number: 1
Creator: Dawson, Keith M

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").	N/A	
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: 490-134486-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 134486
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 08/12/17 09:28 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: 490-134486-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 134486
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 08/12/17 12:46 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	18.0
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: GL CCR Groundwater-Round 7

TestAmerica Job ID: 490-134486-1
SDG: Sebree Station, Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
400-141718-C-4-B MS	Matrix Spike	92.3
400-141718-C-4-C MSD	Matrix Spike Duplicate	94.1
490-134486-1	MW-1	95.9
490-134486-2	MW-2	96.5
490-134486-3	MW-3A	96.8
490-134486-4	MW-4	90.6
490-134486-5	MW-5	96.2
490-134486-6	MW-6	92.6
490-134486-7	DUPE	96.2
490-134486-8	BLANK	92.9
LCS 160-322286/2-A	Lab Control Sample	101
MB 160-322286/1-A	Method Blank	101

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
400-141718-C-4-E MS	Matrix Spike	92.3	83.0
400-141718-C-4-F MSD	Matrix Spike Duplicate	94.1	84.1
490-134486-1	MW-1	95.9	87.5
490-134486-2	MW-2	96.5	89.0
490-134486-3	MW-3A	96.8	88.2
490-134486-4	MW-4	90.6	88.2
490-134486-5	MW-5	96.2	89.7
490-134486-6	MW-6	92.6	87.5
490-134486-7	DUPE	96.2	88.2
490-134486-8	BLANK	92.9	90.1
LCS 160-322289/2-A	Lab Control Sample	101	90.1
MB 160-322289/1-A	Method Blank	101	86.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-136269-1
TestAmerica SDG: Sebree Station, Green Landfill (GL)
Client Project/Site: GL CCR Groundwater-Round 8
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
10/6/2017 4:40:50 PM

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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136269-1
SDG: Sebree Station, Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-136269-1	MW-1	Water	09/05/17 11:04	09/08/17 10:00
490-136269-2	MW-3A	Water	09/06/17 14:36	09/08/17 10:00
490-136269-3	MW-5	Water	09/06/17 10:45	09/08/17 10:00
490-136269-4	MW-6	Water	09/05/17 14:10	09/08/17 10:00
490-136269-5	DUPE	Water	09/05/17 15:13	09/08/17 10:00

Job ID: 490-136269-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-136269-1

Comments
No additional comments.

Receipt
The samples were received on 9/8/2017 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 1.2º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-459104 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 490-459314 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-1 (490-136269-1), MW-3A (490-136269-2), MW-5 (490-136269-3), MW-6 (490-136269-4) and DUPE (490-136269-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-459104 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
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method(s) 6020A: The continuing calibration verification (CCV) associated with batch 180-223669 recovered above the upper control limit for Chromium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-1 (490-136269-1), MW-3A (490-136269-2), MW-5 (490-136269-3), MW-6 (490-136269-4), DUPE (490-136269-5) and (CCV 180-223669/86).

No additional analytical or quality issues were noted, other than those described above or 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.
F1	MS and/or MSD Recovery is outside acceptance limits.

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.

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-1

Date Collected: 09/05/17 11:04
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.71	B	3.00	0.200	mg/L			09/11/17 16:21	1
Fluoride	0.523	J	1.00	0.0100	mg/L			09/11/17 16:21	1
Sulfate	23.4		10.0	0.0600	mg/L			09/12/17 12:01	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0315	J	0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 20:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000346	J B	0.00200	0.0000213	mg/L		09/19/17 09:03	09/21/17 17:10	1
Arsenic	0.000650	J B	0.00500	0.000118	mg/L		09/19/17 09:03	09/21/17 17:10	1
Barium	0.0752	J	0.200	0.000270	mg/L		09/19/17 09:03	09/21/17 17:10	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/21/17 17:10	1
Boron	1.79		1.00	0.00339	mg/L		09/19/17 09:03	09/27/17 06:15	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/21/17 17:10	1
Calcium	29.9	B	1.00	0.0412	mg/L		09/19/17 09:03	09/21/17 17:10	1
Chromium	0.000382	J	0.00300	0.000339	mg/L		09/19/17 09:03	09/21/17 17:10	1
Cobalt	0.000840	J	0.00500	0.0000218	mg/L		09/19/17 09:03	09/21/17 17:10	1
Lead	0.0000830	J	0.00500	0.0000675	mg/L		09/19/17 09:03	09/21/17 17:10	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/19/17 09:03	09/21/17 17:10	1
Selenium	ND		0.0100	0.000348	mg/L		09/19/17 09:03	09/21/17 17:10	1
Thallium	ND		0.00100	0.0000360	mg/L		09/19/17 09:03	09/21/17 17:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/11/17 13:00	09/12/17 13:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.48		0.100	0.100	SU			09/17/17 16:12	1
Temperature	22.7		0.100	0.100	Degrees C			09/17/17 16:12	1
Total Dissolved Solids	627		10.0	7.00	mg/L			09/12/17 12:37	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	0.295		0.100	0.104	1.00	0.0985	pCi/L	09/13/17 08:06	10/05/17 06:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*09/13/17 08:06*	*10/05/17 06:14*	*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		0.193	0.195	1.00	0.291	pCi/L	09/13/17 13:23	09/19/17 10:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*09/13/17 13:23*	*09/19/17 10:15*	*1*

Client Sample ID: MW-1
Date Collected: 09/05/17 11:04
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	91.2		40 - 110	09/13/17 13:23	09/19/17 10:15	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	0.601		0.217	0.221	5.00	0.291	pCi/L		10/05/17 16:36	1

Client Sample ID: MW-3A

Date Collected: 09/06/17 14:36
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2270	B	600	40.0	mg/L			09/11/17 17:15	200
Fluoride	3.16		2.00	0.0200	mg/L			09/12/17 12:12	2
Sulfate	1130		1000	6.00	mg/L			09/11/17 17:15	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.762		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 20:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000546	J B	0.00200	0.0000213	mg/L		09/19/17 09:03	09/21/17 17:13	1
Arsenic	0.000574	J B	0.00500	0.000118	mg/L		09/19/17 09:03	09/21/17 17:13	1
Barium	0.0458	J	0.200	0.000270	mg/L		09/19/17 09:03	09/21/17 17:13	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/21/17 17:13	1
Boron	0.376	J	1.00	0.00339	mg/L		09/19/17 09:03	09/27/17 06:20	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/21/17 17:13	1
Calcium	438	B	1.00	0.0412	mg/L		09/19/17 09:03	09/21/17 17:13	1
Chromium	0.000529	J	0.00300	0.000339	mg/L		09/19/17 09:03	09/21/17 17:13	1
Cobalt	0.000672	J	0.00500	0.0000218	mg/L		09/19/17 09:03	09/21/17 17:13	1
Lead	0.0000920	J	0.00500	0.0000675	mg/L		09/19/17 09:03	09/21/17 17:13	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/19/17 09:03	09/21/17 17:13	1
Selenium	ND		0.0100	0.000348	mg/L		09/19/17 09:03	09/21/17 17:13	1
Thallium	0.0000370	J	0.00100	0.0000360	mg/L		09/19/17 09:03	09/21/17 17:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/11/17 13:00	09/12/17 13:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.90		0.100	0.100	SU			09/17/17 16:12	1
Temperature	22.7		0.100	0.100	Degrees C			09/17/17 16:12	1
Total Dissolved Solids	5020		100	70.0	mg/L			09/12/17 12:37	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	0.278		0.0907	0.0941	1.00	0.0777	pCi/L	09/13/17 08:06	10/05/17 12:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*09/13/17 08:06*	*10/05/17 12:31*	*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	0.751		0.252	0.261	1.00	0.336	pCi/L	09/13/17 13:23	09/19/17 10:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*09/13/17 13:23*	*09/19/17 10:15*	*1*

Client Sample ID: MW-3A
Date Collected: 09/06/17 14:36
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.5		40 - 110	09/13/17 13:23	09/19/17 10:15	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	1.03		0.268	0.278	5.00	0.336	pCi/L		10/05/17 16:36	1

Client Sample ID: MW-5

Date Collected: 09/06/17 10:45
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	779	B	300	20.0	mg/L			09/11/17 17:37	100
Fluoride	3.69		1.00	0.0100	mg/L			09/11/17 17:26	1
Sulfate	1920		1000	6.00	mg/L			09/12/17 12:34	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.353		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 20:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000519	J B	0.00200	0.0000213	mg/L		09/19/17 09:03	09/21/17 17:16	1
Arsenic	0.000562	J B	0.00500	0.000118	mg/L		09/19/17 09:03	09/21/17 17:16	1
Barium	0.0118	J	0.200	0.000270	mg/L		09/19/17 09:03	09/21/17 17:16	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/21/17 17:16	1
Boron	0.276	J	1.00	0.00339	mg/L		09/19/17 09:03	09/27/17 06:25	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/21/17 17:16	1
Calcium	407	B	1.00	0.0412	mg/L		09/19/17 09:03	09/21/17 17:16	1
Chromium	0.000699	J	0.00300	0.000339	mg/L		09/19/17 09:03	09/21/17 17:16	1
Cobalt	0.0000590	J	0.00500	0.0000218	mg/L		09/19/17 09:03	09/21/17 17:16	1
Lead	ND		0.00500	0.0000675	mg/L		09/19/17 09:03	09/21/17 17:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/19/17 09:03	09/21/17 17:16	1
Selenium	ND		0.0100	0.000348	mg/L		09/19/17 09:03	09/21/17 17:16	1
Thallium	0.0000420	J	0.00100	0.0000360	mg/L		09/19/17 09:03	09/21/17 17:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/11/17 13:00	09/12/17 13:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.13		0.100	0.100	SU			09/17/17 16:12	1
Temperature	22.7		0.100	0.100	Degrees C			09/17/17 16:12	1
Total Dissolved Solids	4120		40.0	28.0	mg/L			09/12/17 12:37	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	0.202		0.0775	0.0796	1.00	0.0729	pCi/L	09/13/17 08:06	10/05/17 12:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*09/13/17 08:06*	*10/05/17 12:31*	*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	0.571		0.242	0.247	1.00	0.343	pCi/L	09/13/17 13:23	09/19/17 10:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*09/13/17 13:23*	*09/19/17 10:15*	*1*

Client Sample ID: MW-5
Date Collected: 09/06/17 10:45
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.0		40 - 110	09/13/17 13:23	09/19/17 10:15	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	0.773		0.254	0.260	5.00	0.343	pCi/L		10/05/17 16:36	1

Client Sample ID: MW-6

Date Collected: 09/05/17 14:10
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	123	B	30.0	2.00	mg/L			09/12/17 12:55	10
Fluoride	1.97	J	2.00	0.0200	mg/L			09/12/17 12:44	2
Sulfate	2490		1000	6.00	mg/L			09/12/17 13:06	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0554		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 20:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000444	J B	0.00200	0.0000213	mg/L		09/19/17 09:03	09/21/17 17:18	1
Arsenic	0.000692	J B	0.00500	0.000118	mg/L		09/19/17 09:03	09/21/17 17:18	1
Barium	0.00987	J	0.200	0.000270	mg/L		09/19/17 09:03	09/21/17 17:18	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/21/17 17:18	1
Boron	0.199	J	1.00	0.00339	mg/L		09/19/17 09:03	09/27/17 06:29	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/21/17 17:18	1
Calcium	382	B	1.00	0.0412	mg/L		09/19/17 09:03	09/21/17 17:18	1
Chromium	0.000597	J	0.00300	0.000339	mg/L		09/19/17 09:03	09/21/17 17:18	1
Cobalt	0.0000890	J	0.00500	0.0000218	mg/L		09/19/17 09:03	09/21/17 17:18	1
Lead	ND		0.00500	0.0000675	mg/L		09/19/17 09:03	09/21/17 17:18	1
Molybdenum	0.00147	J	0.0100	0.000873	mg/L		09/19/17 09:03	09/21/17 17:18	1
Selenium	ND		0.0100	0.000348	mg/L		09/19/17 09:03	09/21/17 17:18	1
Thallium	ND		0.00100	0.0000360	mg/L		09/19/17 09:03	09/21/17 17:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/11/17 13:00	09/12/17 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.95		0.100	0.100	SU			09/17/17 16:12	1
Temperature	22.7		0.100	0.100	Degrees C			09/17/17 16:12	1
Total Dissolved Solids	4890		40.0	28.0	mg/L			09/12/17 12:37	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	0.0768		0.0528	0.0533	1.00	0.0643	pCi/L	09/13/17 08:06	10/05/17 06:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*09/13/17 08:06*	*10/05/17 06:14*	*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	0.221	U	0.386	0.386	1.00	0.654	pCi/L	09/13/17 13:23	09/19/17 16:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*09/13/17 13:23*	*09/19/17 16:11*	*1*

Client Sample ID: MW-6
Date Collected: 09/05/17 14:10
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.3		40 - 110	09/13/17 13:23	09/19/17 16:11	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	0.297	U	0.390	0.390	5.00	0.654	pCi/L		10/05/17 16:36	1

Client Sample ID: DUPE

Date Collected: 09/05/17 15:13
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	126	B	30.0	2.00	mg/L			09/12/17 13:27	10
Fluoride	1.94	J	2.00	0.0200	mg/L			09/12/17 13:17	2
Sulfate	2520		1000	6.00	mg/L			09/12/17 13:58	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0547		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 20:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000494	J B	0.00200	0.0000213	mg/L		09/19/17 09:03	09/21/17 17:21	1
Arsenic	0.000654	J B	0.00500	0.000118	mg/L		09/19/17 09:03	09/21/17 17:21	1
Barium	0.00941	J	0.200	0.000270	mg/L		09/19/17 09:03	09/21/17 17:21	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/21/17 17:21	1
Boron	0.189	J	1.00	0.00339	mg/L		09/19/17 09:03	09/27/17 06:34	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/21/17 17:21	1
Calcium	378	B	1.00	0.0412	mg/L		09/19/17 09:03	09/21/17 17:21	1
Chromium	0.000971	J	0.00300	0.000339	mg/L		09/19/17 09:03	09/21/17 17:21	1
Cobalt	0.0000630	J	0.00500	0.0000218	mg/L		09/19/17 09:03	09/21/17 17:21	1
Lead	ND		0.00500	0.0000675	mg/L		09/19/17 09:03	09/21/17 17:21	1
Molybdenum	0.00219	J	0.0100	0.000873	mg/L		09/19/17 09:03	09/21/17 17:21	1
Selenium	ND		0.0100	0.000348	mg/L		09/19/17 09:03	09/21/17 17:21	1
Thallium	ND		0.00100	0.0000360	mg/L		09/19/17 09:03	09/21/17 17:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/11/17 13:00	09/12/17 13:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.98		0.100	0.100	SU			09/17/17 16:12	1
Temperature	20.7		0.100	0.100	Degrees C			09/17/17 16:12	1
Total Dissolved Solids	4680		40.0	28.0	mg/L			09/12/17 12:37	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	0.0486	U	0.0470	0.0472	1.00	0.0708	pCi/L	09/13/17 08:06	10/05/17 08:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*09/13/17 08:06*	*10/05/17 08:37*	*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	0.212	U	0.208	0.209	1.00	0.337	pCi/L	09/13/17 13:23	09/19/17 10:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*09/13/17 13:23*	*09/19/17 10:15*	*1*

Client Sample ID: DUPE
Date Collected: 09/05/17 15:13
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.0		40 - 110	09/13/17 13:23	09/19/17 10:15	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	0.260	U	0.214	0.214	5.00	0.337	pCi/L		10/05/17 16:36	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-459104/3
Matrix: Water
Analysis Batch: 459104

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3856	J	3.00	0.200	mg/L			09/11/17 15:49	1
Fluoride	ND		1.00	0.0100	mg/L			09/11/17 15:49	1
Sulfate	ND		5.00	0.0300	mg/L			09/11/17 15:49	1

Lab Sample ID: LCS 490-459104/4
Matrix: Water
Analysis Batch: 459104

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	9.831		mg/L		98	80 - 120
Fluoride	1.00	0.9647	J	mg/L		96	80 - 120
Sulfate	10.0	9.512		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-459104/5
Matrix: Water
Analysis Batch: 459104

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	9.847		mg/L		98	80 - 120	0	20
Fluoride	1.00	0.9541	J	mg/L		95	80 - 120	1	20
Sulfate	10.0	9.509		mg/L		95	80 - 120	0	20

Lab Sample ID: 490-136269-1 MS
Matrix: Water
Analysis Batch: 459104

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	5.71	B	10.0	15.06		mg/L		93	80 - 120
Fluoride	0.523	J	1.00	1.506		mg/L		98	80 - 120

Lab Sample ID: 490-136269-1 MSD
Matrix: Water
Analysis Batch: 459104

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	5.71	B	10.0	16.46		mg/L		107	80 - 120	9	20
Fluoride	0.523	J	1.00	1.607		mg/L		108	80 - 120	7	20

Lab Sample ID: MB 490-459314/3
Matrix: Water
Analysis Batch: 459314

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3748	J	3.00	0.200	mg/L			09/12/17 11:29	1
Fluoride	ND		1.00	0.0100	mg/L			09/12/17 11:29	1
Sulfate	ND		5.00	0.0300	mg/L			09/12/17 11:29	1

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

Lab Sample ID: LCS 490-459314/4
Matrix: Water
Analysis Batch: 459314

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	9.702		mg/L		97	80 - 120
Fluoride	1.00	0.9169	J	mg/L		92	80 - 120
Sulfate	10.0	9.409		mg/L		94	80 - 120

Lab Sample ID: LCSD 490-459314/5
Matrix: Water
Analysis Batch: 459314

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	9.787		mg/L		98	80 - 120	1	20
Fluoride	1.00	0.9654	J	mg/L		96	80 - 120	5	20
Sulfate	10.0	9.418		mg/L		94	80 - 120	0	20

Lab Sample ID: 490-136369-B-1 MS
Matrix: Water
Analysis Batch: 459314

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	2.99	J B F1	10.0	13.00		mg/L		100	80 - 120
Fluoride	0.0810	J	1.00	0.9552	J	mg/L		87	80 - 120
Sulfate	5.54	F1	10.0	15.59		mg/L		100	80 - 120

Lab Sample ID: 490-136369-B-1 MSD
Matrix: Water
Analysis Batch: 459314

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	2.99	J B F1	10.0	15.32	F1	mg/L		123	80 - 120	16	20
Fluoride	0.0810	J	1.00	1.144		mg/L		106	80 - 120	18	20
Sulfate	5.54	F1	10.0	19.06	F1	mg/L		135	80 - 120	20	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-223052/1-A
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 19:37	1

Lab Sample ID: LCS 180-223052/2-A
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9691		mg/L		97	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 180-70177-C-2-B MS
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0675		1.00	1.075		mg/L		101	75 - 125

Lab Sample ID: 180-70177-C-2-C MSD
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0675		1.00	1.064		mg/L		100	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-223292/1-A
Matrix: Water
Analysis Batch: 223669

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0004420	J	0.00200	0.0000213	mg/L		09/19/17 09:03	09/21/17 16:05	1
Arsenic	0.0002400	J	0.00500	0.000118	mg/L		09/19/17 09:03	09/21/17 16:05	1
Barium	ND		0.200	0.000270	mg/L		09/19/17 09:03	09/21/17 16:05	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/21/17 16:05	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/21/17 16:05	1
Calcium	0.05138	J	1.00	0.0412	mg/L		09/19/17 09:03	09/21/17 16:05	1
Chromium	ND		0.00300	0.000339	mg/L		09/19/17 09:03	09/21/17 16:05	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/19/17 09:03	09/21/17 16:05	1
Lead	ND		0.00500	0.0000675	mg/L		09/19/17 09:03	09/21/17 16:05	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/19/17 09:03	09/21/17 16:05	1
Selenium	0.0005080	J	0.0100	0.000348	mg/L		09/19/17 09:03	09/21/17 16:05	1
Thallium	ND		0.00100	0.0000360	mg/L		09/19/17 09:03	09/21/17 16:05	1

Lab Sample ID: MB 180-223292/1-A
Matrix: Water
Analysis Batch: 223775

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.001158	J	0.00200	0.0000213	mg/L		09/19/17 09:03	09/22/17 13:50	1
Arsenic	ND		0.00500	0.000118	mg/L		09/19/17 09:03	09/22/17 13:50	1
Barium	ND		0.200	0.000270	mg/L		09/19/17 09:03	09/22/17 13:50	1
Beryllium	ND		0.00200	0.000102	mg/L		09/19/17 09:03	09/22/17 13:50	1
Cadmium	ND		0.00100	0.000152	mg/L		09/19/17 09:03	09/22/17 13:50	1
Calcium	ND		1.00	0.0412	mg/L		09/19/17 09:03	09/22/17 13:50	1
Chromium	ND		0.00300	0.000339	mg/L		09/19/17 09:03	09/22/17 13:50	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/19/17 09:03	09/22/17 13:50	1
Lead	ND		0.00500	0.0000675	mg/L		09/19/17 09:03	09/22/17 13:50	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/19/17 09:03	09/22/17 13:50	1
Selenium	ND		0.0100	0.000348	mg/L		09/19/17 09:03	09/22/17 13:50	1
Thallium	0.00005800	J	0.00100	0.0000360	mg/L		09/19/17 09:03	09/22/17 13:50	1

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

Lab Sample ID: MB 180-223292/1-A
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		09/19/17 09:03	09/27/17 04:22	1

Lab Sample ID: LCS 180-223292/2-A
Matrix: Water
Analysis Batch: 223669

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5193		mg/L		104	80 - 120
Arsenic	0.0400	0.04041		mg/L		101	80 - 120
Barium	2.00	1.882		mg/L		94	80 - 120
Beryllium	0.0500	0.04959		mg/L		99	80 - 120
Cadmium	0.0500	0.05566		mg/L		111	80 - 120
Calcium	50.0	52.46		mg/L		105	80 - 120
Chromium	0.200	0.2241		mg/L		112	80 - 120
Cobalt	0.500	0.5263		mg/L		105	80 - 120
Lead	0.0200	0.02144		mg/L		107	80 - 120
Molybdenum	1.00	0.9969		mg/L		100	80 - 120
Selenium	0.0100	0.01087		mg/L		109	80 - 120
Thallium	0.0500	0.05344		mg/L		107	80 - 120

Lab Sample ID: LCS 180-223292/2-A
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.9919	J	mg/L		99	80 - 120

Lab Sample ID: 180-70405-A-6-A MS
Matrix: Water
Analysis Batch: 223669

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000567	J B	0.500	0.5198		mg/L		104	75 - 125
Arsenic	0.000498	J B	0.0400	0.04054		mg/L		100	75 - 125
Barium	0.0155	J	2.00	1.867		mg/L		93	75 - 125
Beryllium	ND		0.0500	0.05104		mg/L		102	75 - 125
Cadmium	ND		0.0500	0.05602		mg/L		112	75 - 125
Calcium	34.1	B	50.0	87.71		mg/L		107	75 - 125
Chromium	0.000923	J	0.200	0.2238		mg/L		111	75 - 125
Cobalt	0.0000520	J	0.500	0.5236		mg/L		105	75 - 125
Lead	0.000118	J	0.0200	0.02206		mg/L		110	75 - 125
Molybdenum	0.00210	J	1.00	1.018		mg/L		102	75 - 125
Selenium	0.000967	J B	0.0100	0.01144		mg/L		105	75 - 125
Thallium	0.0000610	J	0.0500	0.05364		mg/L		107	75 - 125

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

Lab Sample ID: 180-70405-A-6-A MS
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.00818	J	1.00	0.9372	J	mg/L		93	75 - 125

Lab Sample ID: 180-70405-A-6-B MSD
Matrix: Water
Analysis Batch: 223669

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000567	J B	0.500	0.5218		mg/L		104	75 - 125	0	20
Arsenic	0.000498	J B	0.0400	0.04122		mg/L		102	75 - 125	2	20
Barium	0.0155	J	2.00	1.861		mg/L		92	75 - 125	0	20
Beryllium	ND		0.0500	0.05224		mg/L		104	75 - 125	2	20
Cadmium	ND		0.0500	0.05706		mg/L		114	75 - 125	2	20
Calcium	34.1	B	50.0	85.82		mg/L		103	75 - 125	2	20
Chromium	0.000923	J	0.200	0.2259		mg/L		112	75 - 125	1	20
Cobalt	0.0000520	J	0.500	0.5252		mg/L		105	75 - 125	0	20
Lead	0.000118	J	0.0200	0.02161		mg/L		107	75 - 125	2	20
Molybdenum	0.00210	J	1.00	0.9874		mg/L		99	75 - 125	3	20
Selenium	0.000967	J B	0.0100	0.01197		mg/L		110	75 - 125	5	20
Thallium	0.0000610	J	0.0500	0.05385		mg/L		108	75 - 125	0	20

Lab Sample ID: 180-70405-A-6-B MSD
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 223292

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.00818	J	1.00	0.9975	J	mg/L		99	75 - 125	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-459093/1-A
Matrix: Water
Analysis Batch: 459397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 459093

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/11/17 13:00	09/12/17 12:30	1

Lab Sample ID: LCS 490-459093/2-A
Matrix: Water
Analysis Batch: 459397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 459093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.069		ug/L		107	80 - 120

Lab Sample ID: 490-136245-D-1-B MS
Matrix: Water
Analysis Batch: 459397

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 459093

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.025		ug/L		102	75 - 125

Lab Sample ID: 490-136245-D-1-C MSD
Matrix: Water
Analysis Batch: 459397

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 459093

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.039		ug/L		104	75 - 125	1	20

Method: 9040C - pH

Lab Sample ID: LCS 490-460540/1
Matrix: Water
Analysis Batch: 460540

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	7.060		SU		101	98 - 103		

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

Lab Sample ID: MB 490-458709/1
Matrix: Water
Analysis Batch: 458709

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			09/12/17 12:37	1

Lab Sample ID: LCS 490-458709/2
Matrix: Water
Analysis Batch: 458709

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 490-458709/3
Matrix: Water
Analysis Batch: 458709

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

Lab Sample ID: 490-136209-H-1 DU
Matrix: Water
Analysis Batch: 458709

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	191000			193100		mg/L				1	20

Lab Sample ID: 490-136363-C-4 DU
Matrix: Water
Analysis Batch: 458709

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	8.00	J		9.000	J	mg/L				12	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-327003/1-A
Matrix: Water
Analysis Batch: 330402

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 327003

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03547	U	0.0449	0.0450	1.00	0.0744	pCi/L	09/13/17 08:06	10/05/17 06:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*09/13/17 08:06*	*10/05/17 06:10*	*1*

Lab Sample ID: LCS 160-327003/2-A
Matrix: Water
Analysis Batch: 330402

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 327003

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.789		1.00	1.00	0.0760	pCi/L	102	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: 400-142993-A-1-B DU
Matrix: Water
Analysis Batch: 330513

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 327003

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0524	U		0.02505	U	0.0338	1.00	0.0562	pCi/L			0.35	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-327098/1-A
Matrix: Water
Analysis Batch: 327826

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 327098

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1750	U	0.205	0.206	1.00	0.338	pCi/L	09/13/17 13:23	09/19/17 10:13	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*09/13/17 13:23*	*09/19/17 10:13*	*1*
Y Carrier	*91.2*		*40 - 110*	*09/13/17 13:23*	*09/19/17 10:13*	*1*

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

Lab Sample ID: LCS 160-327098/2-A
Matrix: Water
Analysis Batch: 327826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 327098

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.9	11.42		1.24	1.00	0.313	pCi/L	89	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*92.3*		*40 - 110*

Lab Sample ID: 400-142993-A-1-D DU
Matrix: Water
Analysis Batch: 327827

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 327098

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.223	U		0.2477	U	0.195	1.00	0.305	pCi/L			0.06	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*
Y Carrier	*91.2*		*40 - 110*

HPLC/IC

Analysis Batch: 459104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	9056A	
490-136269-2	MW-3A	Total/NA	Water	9056A	
490-136269-3	MW-5	Total/NA	Water	9056A	
490-136269-3	MW-5	Total/NA	Water	9056A	
MB 490-459104/3	Method Blank	Total/NA	Water	9056A	
LCS 490-459104/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-459104/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-136269-1 MS	MW-1	Total/NA	Water	9056A	
490-136269-1 MSD	MW-1	Total/NA	Water	9056A	

Analysis Batch: 459314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	9056A	
490-136269-2	MW-3A	Total/NA	Water	9056A	
490-136269-3	MW-5	Total/NA	Water	9056A	
490-136269-4	MW-6	Total/NA	Water	9056A	
490-136269-4	MW-6	Total/NA	Water	9056A	
490-136269-4	MW-6	Total/NA	Water	9056A	
490-136269-5	DUPE	Total/NA	Water	9056A	
490-136269-5	DUPE	Total/NA	Water	9056A	
490-136269-5	DUPE	Total/NA	Water	9056A	
MB 490-459314/3	Method Blank	Total/NA	Water	9056A	
LCS 490-459314/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-459314/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-136369-B-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-136369-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 223052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total Recoverable	Water	3005A	
490-136269-2	MW-3A	Total Recoverable	Water	3005A	
490-136269-3	MW-5	Total Recoverable	Water	3005A	
490-136269-4	MW-6	Total Recoverable	Water	3005A	
490-136269-5	DUPE	Total Recoverable	Water	3005A	
MB 180-223052/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-223052/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70177-C-2-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70177-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 223267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total Recoverable	Water	6010C	223052
490-136269-2	MW-3A	Total Recoverable	Water	6010C	223052
490-136269-3	MW-5	Total Recoverable	Water	6010C	223052
490-136269-4	MW-6	Total Recoverable	Water	6010C	223052
490-136269-5	DUPE	Total Recoverable	Water	6010C	223052
MB 180-223052/1-A	Method Blank	Total Recoverable	Water	6010C	223052
LCS 180-223052/2-A	Lab Control Sample	Total Recoverable	Water	6010C	223052

Metals (Continued)

Analysis Batch: 223267 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-70177-C-2-B MS	Matrix Spike	Total Recoverable	Water	6010C	223052
180-70177-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	223052

Prep Batch: 223292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total Recoverable	Water	3005A	
490-136269-2	MW-3A	Total Recoverable	Water	3005A	
490-136269-3	MW-5	Total Recoverable	Water	3005A	
490-136269-4	MW-6	Total Recoverable	Water	3005A	
490-136269-5	DUPE	Total Recoverable	Water	3005A	
MB 180-223292/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-223292/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70405-A-6-A MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70405-A-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 223669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total Recoverable	Water	6020A	223292
490-136269-2	MW-3A	Total Recoverable	Water	6020A	223292
490-136269-3	MW-5	Total Recoverable	Water	6020A	223292
490-136269-4	MW-6	Total Recoverable	Water	6020A	223292
490-136269-5	DUPE	Total Recoverable	Water	6020A	223292
MB 180-223292/1-A	Method Blank	Total Recoverable	Water	6020A	223292
LCS 180-223292/2-A	Lab Control Sample	Total Recoverable	Water	6020A	223292
180-70405-A-6-A MS	Matrix Spike	Total Recoverable	Water	6020A	223292
180-70405-A-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	223292

Analysis Batch: 223775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-223292/1-A	Method Blank	Total Recoverable	Water	6020A	223292

Analysis Batch: 224217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total Recoverable	Water	6020A	223292
490-136269-2	MW-3A	Total Recoverable	Water	6020A	223292
490-136269-3	MW-5	Total Recoverable	Water	6020A	223292
490-136269-4	MW-6	Total Recoverable	Water	6020A	223292
490-136269-5	DUPE	Total Recoverable	Water	6020A	223292
MB 180-223292/1-A	Method Blank	Total Recoverable	Water	6020A	223292
LCS 180-223292/2-A	Lab Control Sample	Total Recoverable	Water	6020A	223292
180-70405-A-6-A MS	Matrix Spike	Total Recoverable	Water	6020A	223292
180-70405-A-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	223292

Prep Batch: 459093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	7470A	
490-136269-2	MW-3A	Total/NA	Water	7470A	
490-136269-3	MW-5	Total/NA	Water	7470A	
490-136269-4	MW-6	Total/NA	Water	7470A	
490-136269-5	DUPE	Total/NA	Water	7470A	
MB 490-459093/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 459093 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-459093/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-136245-D-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-136245-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 459397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	7470A	459093
490-136269-2	MW-3A	Total/NA	Water	7470A	459093
490-136269-3	MW-5	Total/NA	Water	7470A	459093
490-136269-4	MW-6	Total/NA	Water	7470A	459093
490-136269-5	DUPE	Total/NA	Water	7470A	459093
MB 490-459093/1-A	Method Blank	Total/NA	Water	7470A	459093
LCS 490-459093/2-A	Lab Control Sample	Total/NA	Water	7470A	459093
490-136245-D-1-B MS	Matrix Spike	Total/NA	Water	7470A	459093
490-136245-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	459093

General Chemistry

Analysis Batch: 458709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	SM 2540C	
490-136269-2	MW-3A	Total/NA	Water	SM 2540C	
490-136269-3	MW-5	Total/NA	Water	SM 2540C	
490-136269-4	MW-6	Total/NA	Water	SM 2540C	
490-136269-5	DUPE	Total/NA	Water	SM 2540C	
MB 490-458709/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-458709/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-458709/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-136209-H-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-136363-C-4 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 460540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	9040C	
490-136269-2	MW-3A	Total/NA	Water	9040C	
490-136269-3	MW-5	Total/NA	Water	9040C	
490-136269-4	MW-6	Total/NA	Water	9040C	
490-136269-5	DUPE	Total/NA	Water	9040C	
LCS 490-460540/1	Lab Control Sample	Total/NA	Water	9040C	

Rad

Prep Batch: 327003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	PrecSep-21	
490-136269-2	MW-3A	Total/NA	Water	PrecSep-21	
490-136269-3	MW-5	Total/NA	Water	PrecSep-21	
490-136269-4	MW-6	Total/NA	Water	PrecSep-21	
490-136269-5	DUPE	Total/NA	Water	PrecSep-21	
MB 160-327003/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 327003 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-327003/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-142993-A-1-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 327098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136269-1	MW-1	Total/NA	Water	PrecSep_0	
490-136269-2	MW-3A	Total/NA	Water	PrecSep_0	
490-136269-3	MW-5	Total/NA	Water	PrecSep_0	
490-136269-4	MW-6	Total/NA	Water	PrecSep_0	
490-136269-5	DUPE	Total/NA	Water	PrecSep_0	
MB 160-327098/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-327098/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-142993-A-1-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-1

Date Collected: 09/05/17 11:04
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-1

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			459104	09/11/17 16:21	SW1	TAL NSH
Total/NA	Analysis	9056A		2			459314	09/12/17 12:01	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:02	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			223669	09/21/17 17:10	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/27/17 06:15	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	459093	09/11/17 13:00	RDF	TAL NSH
Total/NA	Analysis	7470A		1			459397	09/12/17 13:10	RDF	TAL NSH
Total/NA	Analysis	9040C		1			460540	09/17/17 16:12	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	458709	09/12/17 12:37	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.14 mL	1.0 g	327003	09/13/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	330513	10/05/17 06:14	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.14 mL	1.0 g	327098	09/13/17 13:23	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	327826	09/19/17 10:15	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			330560	10/05/17 16:36	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 09/06/17 14:36
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-2

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		200			459104	09/11/17 17:15	SW1	TAL NSH
Total/NA	Analysis	9056A		2			459314	09/12/17 12:12	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:08	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			223669	09/21/17 17:13	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/27/17 06:20	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	459093	09/11/17 13:00	RDF	TAL NSH
Total/NA	Analysis	7470A		1			459397	09/12/17 13:12	RDF	TAL NSH
Total/NA	Analysis	9040C		1			460540	09/17/17 16:12	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	458709	09/12/17 12:37	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.67 mL	1.0 g	327003	09/13/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1			330402	10/05/17 12:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.67 mL	1.0 g	327098	09/13/17 13:23	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	327826	09/19/17 10:15	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			330560	10/05/17 16:36	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 09/06/17 10:45
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-3

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			459104	09/11/17 17:26	SW1	TAL NSH
Total/NA	Analysis	9056A		100			459104	09/11/17 17:37	SW1	TAL NSH
Total/NA	Analysis	9056A		200			459314	09/12/17 12:34	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:13	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			223669	09/21/17 17:16	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/27/17 06:25	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	459093	09/11/17 13:00	RDF	TAL NSH
Total/NA	Analysis	7470A		1			459397	09/12/17 13:15	RDF	TAL NSH
Total/NA	Analysis	9040C		1			460540	09/17/17 16:12	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	458709	09/12/17 12:37	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.84 mL	1.0 g	327003	09/13/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1			330402	10/05/17 12:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.84 mL	1.0 g	327098	09/13/17 13:23	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	327826	09/19/17 10:15	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			330560	10/05/17 16:36	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 09/05/17 14:10
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-4

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		2			459314	09/12/17 12:44	JHS	TAL NSH
Total/NA	Analysis	9056A		10			459314	09/12/17 12:55	JHS	TAL NSH
Total/NA	Analysis	9056A		200			459314	09/12/17 13:06	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:28	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			223669	09/21/17 17:18	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/27/17 06:29	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	459093	09/11/17 13:00	RDF	TAL NSH
Total/NA	Analysis	7470A		1			459397	09/12/17 13:17	RDF	TAL NSH
Total/NA	Analysis	9040C		1			460540	09/17/17 16:12	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	458709	09/12/17 12:37	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.39 mL	1.0 g	327003	09/13/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	330513	10/05/17 06:14	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.39 mL	1.0 g	327098	09/13/17 13:23	LDE	TAL SL
Total/NA	Analysis	904.0		1			327826	09/19/17 16:11	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			330560	10/05/17 16:36	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136269-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: DUPE

Date Collected: 09/05/17 15:13
Date Received: 09/08/17 10:00

Lab Sample ID: 490-136269-5

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		2			459314	09/12/17 13:17	JHS	TAL NSH
Total/NA	Analysis	9056A		10			459314	09/12/17 13:27	JHS	TAL NSH
Total/NA	Analysis	9056A		200			459314	09/12/17 13:58	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:34	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			223669	09/21/17 17:21	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223292	09/19/17 09:03	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/27/17 06:34	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	459093	09/11/17 13:00	RDF	TAL NSH
Total/NA	Analysis	7470A		1			459397	09/12/17 13:19	RDF	TAL NSH
Total/NA	Analysis	9040C		1			460540	09/17/17 16:12	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	458709	09/12/17 12:37	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.50 mL	1.0 g	327003	09/13/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1			330513	10/05/17 08:37	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.50 mL	1.0 g	327098	09/13/17 13:23	LDE	TAL SL
Total/NA	Analysis	904.0		1			327826	09/19/17 10:15	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			330560	10/05/17 16:36	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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136269-1
SDG: Sebree Station, Green Landfill (GL)

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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136269-1
SDG: Sebree Station, Green Landfill (GL)

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	12-31-17
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	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136269-1
SDG: Sebree Station, Green Landfill (GL)

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	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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	06-30-17 *
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
Washington	State Program	10	C592	08-30-18
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

490-136269 Chain of Custody

Cooler Received/Opened On 9/8/17 1000

Time Samples Removed From Cooler 16.50 Time Samples Placed In Storage 1840 (2 Hour Window)

1. Tracking # 6417 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470366 pH Strip Lot HC697954 Chlorine Strip Lot 081116K

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) HZG

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) J.C.

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

Loc: 490
136269

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 9/8/17 1000

Time Samples Removed From Cooler 16:50 Time Samples Placed In Storage 1840 (2 Hour Window)

1. Tracking # 6439 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470366 pH Strip Lot HC697754 Chlorine Strip Lot 0811G12

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 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) HKG

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) 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
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

10/6/2017

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
-Fluoride
-Sulfate
-Antimony
-Arsenic
-Barium
-Beryllium
-Boron
-Cadmium
-Calcium
-Chromium
-Cobalt
-Lead
-Lithium
-Mercury
-Molybdenum
-Selenium
-Thallium
-Temperature
-Nickel
-Zinc
-Iron
-Sodium
-Radium 226 + 228 Combined

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 37204-3719
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: 09/07/2017**
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: GL CCR Groundwater-Round 8/2nd Semi-Annual	☐ 1 week		
Site: Sebree Station, Green Landfill (GL)	☐ 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)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
MW-1	9/5/17	1104	G	Water	8	N	N	x	x	x	x	x	x	
MW-3A	9/6/17	1436	G	Water	8	N	N	x	x	x	x	x	x	sample bottles labeled as MW-3 are same as MW-3A
MW-5	9/6/17	1045	G	Water	8	N	N	x	x	x	x	x	x	
MW-6	9/5/17	1410	G	Water	8	N	N	x	x	x	x	x	x	
DUPE	9/5/17	1513	G	Water	8	N	N	x	x	x	x	x	x	
														Loc: 490 136269
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 samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations) and 401 Chapter 45 (Kentucky Special Waste Regulations.) See attached constituent lists for analysis. Please compile two separate reports (1 report for each attached constituent list) for the CCR and Semi-Annual data results.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____	
Relinquished by:	Company: BREC	Date/Time: 9/7/17 1200	Received by:	Company: TAN	1.2	Date/Time: 9/8/17 1000
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

10/6/2017

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: 490-62490.1
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 #: 490-136269-1
Address: 13715 Rider Trail North,	Due Date Requested: 9/20/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: GL CCR Groundwater-Round 8/2nd 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)	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 (490-136269-1)	9/5/17	11:04 Central		Water			X	X	X	2	Historical Review required
MW-3A (490-136269-2)	9/6/17	14:36 Central		Water			X	X	X	2	Historical Review required
MW-5 (490-136269-3)	9/6/17	10:45 Central		Water			X	X	X	2	Historical Review required
MW-6 (490-136269-4)	9/5/17	14:10 Central		Water			X	X	X	2	Historical Review required
DUPE (490-136269-5)	9/5/17	15:13 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: 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
	9/1/17	TAN		9/1/17 0900	TAS
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:

10/6/2017

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

Chain of Custody Record

490-136269 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	o: 2489.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testame...	Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-136269-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 9/20/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: GL CCR Groundwater-Round 8/2nd 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)	6020A/3006A (MOD) ICP/MS Metals	6010C/3006A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (490-136269-1)	9/5/17	11:04 Central		Water			X	X	1	Metals - run once, upload together.
MW-3A (490-136269-2)	9/6/17	14:36 Central		Water			X	X	1	Metals - run once, upload together.
MW-5 (490-136269-3)	9/6/17	10:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-6 (490-136269-4)	9/5/17	14:10 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-136269-5)	9/5/17	15:13 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: 9/1/17	Company: TAN	Received by:	Date/Time: 9/2/17 0905	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: 490-136269-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 136269
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: 490-136269-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 136269
List Number: 2
Creator: Neri, Tom

List Source: TestAmerica Pittsburgh
List Creation: 09/12/17 04:23 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	19.2
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: 490-136269-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 136269
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 09/12/17 03:42 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	18.0,0.1,18.0
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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136269-1
SDG: Sebree Station, Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
400-142993-A-1-B DU	Duplicate	102
490-136269-1	MW-1	96.2
490-136269-2	MW-3A	96.5
490-136269-3	MW-5	97.6
490-136269-4	MW-6	99.7
490-136269-5	DUPE	97.3
LCS 160-327003/2-A	Lab Control Sample	101
MB 160-327003/1-A	Method Blank	100

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
400-142993-A-1-D DU	Duplicate	102	91.2
490-136269-1	MW-1	96.2	91.2
490-136269-2	MW-3A	96.5	90.5
490-136269-3	MW-5	97.6	89.0
490-136269-4	MW-6	99.7	89.3
490-136269-5	DUPE	97.3	83.0
LCS 160-327098/2-A	Lab Control Sample	101	92.3
MB 160-327098/1-A	Method Blank	100	91.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-136398-1
TestAmerica SDG: Sebree Station, Green Landfill (GL)
Client Project/Site: GL CCR Groundwater-Round 8
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
10/12/2017 3:42:26 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-136398-1	MW-2	Water	09/07/17 13:51	09/12/17 08:55
490-136398-2	MW-4	Water	09/07/17 10:50	09/12/17 08:55
490-136398-3	FIELD BLANK	Water	09/07/17 15:28	09/12/17 08:55

Job ID: 490-136398-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-136398-1

Comments
No additional comments.

Receipt
The samples were received on 9/12/2017 8:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-459940 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 490-459940 contained Chloride and Fluoride 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 490-459940 contained Fluoride and Chloride 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 following samples was diluted due to the nature of the sample matrix: MW-2 (490-136398-1) and MW-4 (490-136398-2). 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
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 490-460103 and analytical batch 490-460684 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.

General Chemistry
Method(s) SM 2540C: Reanalysis of the following sample was performed outside of the analytical holding time due to the reference method specifying that no more than 200mg of weight be recovered for a chosen sample analysis volume in order to produce the best data precision: MW-4 (490-136398-2).

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.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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.
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
F3	Duplicate RPD exceeds the control limit

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-2

Date Collected: 09/07/17 13:51
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**136**	**B**	30.0	2.00	mg/L			09/14/17 13:37	10
Fluoride	**0.231**	**J B F1**	1.00	0.0100	mg/L			09/14/17 12:41	1
Sulfate	**90.8**		50.0	0.300	mg/L			09/14/17 13:37	10

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		09/15/17 08:26	09/18/17 20:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000425**	**J B**	0.00200	0.0000213	mg/L		09/22/17 08:53	09/26/17 23:04	1
Arsenic	**0.00527**		0.00500	0.000118	mg/L		09/22/17 08:53	09/26/17 23:04	1
Barium	**0.181**	**J**	0.200	0.000270	mg/L		09/22/17 08:53	09/26/17 23:04	1
Beryllium	ND		0.00200	0.000102	mg/L		09/22/17 08:53	09/26/17 23:04	1
Boron	**0.0402**	**J B**	1.00	0.00339	mg/L		09/22/17 08:53	09/26/17 23:04	1
Cadmium	ND		0.00100	0.000152	mg/L		09/22/17 08:53	09/26/17 23:04	1
Calcium	**121**		1.00	0.0412	mg/L		09/22/17 08:53	09/26/17 23:04	1
Chromium	ND		0.00300	0.000339	mg/L		09/22/17 08:53	09/26/17 23:04	1
Cobalt	**0.000791**	**J**	0.00500	0.0000218	mg/L		09/22/17 08:53	09/26/17 23:04	1
Lead	ND		0.00500	0.0000675	mg/L		09/22/17 08:53	09/26/17 23:04	1
Molybdenum	**0.00321**	**J B**	0.0100	0.000873	mg/L		09/22/17 08:53	09/26/17 23:04	1
Selenium	ND		0.0100	0.000348	mg/L		09/22/17 08:53	09/26/17 23:04	1
Thallium	ND		0.00100	0.0000360	mg/L		09/22/17 08:53	09/26/17 23:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/15/17 09:01	09/15/17 18:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.69**		0.100	0.100	SU			09/14/17 11:23	1
Temperature	**22.3**		0.100	0.100	Degrees C			09/14/17 11:23	1
Total Dissolved Solids	**818**		10.0	7.00	mg/L			09/13/17 19:32	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	**0.319**		0.109	0.112	1.00	0.111	pCi/L	09/15/17 09:45	10/10/17 10:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*09/15/17 09:45*	*10/10/17 10:59*	*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	0.218	U	0.213	0.214	1.00	0.345	pCi/L	09/15/17 10:27	09/25/17 16:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*09/15/17 10:27*	*09/25/17 16:21*	*1*

Client Sample ID: MW-2
Date Collected: 09/07/17 13:51
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	92.3		40 - 110	09/15/17 10:27	09/25/17 16:21	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	0.537		0.239	0.242	5.00	0.345	pCi/L		10/11/17 08:56	1

Client Sample ID: MW-4

Date Collected: 09/07/17 10:50
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1880	B	150	10.0	mg/L			09/14/17 15:47	50
Fluoride	0.112	J B	1.00	0.0100	mg/L			09/14/17 13:55	1
Sulfate	2020		500	3.00	mg/L			09/14/17 16:43	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.66		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 20:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000531	J B	0.00200	0.0000213	mg/L		09/22/17 08:53	09/26/17 23:09	1
Arsenic	0.000277	J	0.00500	0.000118	mg/L		09/22/17 08:53	09/26/17 23:09	1
Barium	0.0277	J	0.200	0.000270	mg/L		09/22/17 08:53	09/26/17 23:09	1
Beryllium	ND		0.00200	0.000102	mg/L		09/22/17 08:53	09/26/17 23:09	1
Boron	2.87	B	1.00	0.00339	mg/L		09/22/17 08:53	09/26/17 23:09	1
Cadmium	ND		0.00100	0.000152	mg/L		09/22/17 08:53	09/26/17 23:09	1
Calcium	739		1.00	0.0412	mg/L		09/22/17 08:53	09/26/17 23:09	1
Chromium	ND		0.00300	0.000339	mg/L		09/22/17 08:53	09/26/17 23:09	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/22/17 08:53	09/26/17 23:09	1
Lead	ND		0.00500	0.0000675	mg/L		09/22/17 08:53	09/26/17 23:09	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/22/17 08:53	09/26/17 23:09	1
Selenium	0.000399	J	0.0100	0.000348	mg/L		09/22/17 08:53	09/26/17 23:09	1
Thallium	ND		0.00100	0.0000360	mg/L		09/22/17 08:53	09/26/17 23:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.485		0.200	0.100	ug/L		09/15/17 09:01	09/15/17 18:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.64		0.100	0.100	SU			09/14/17 11:23	1
Temperature	22.3		0.100	0.100	Degrees C			09/14/17 11:23	1
Total Dissolved Solids	4700	H	40.0	28.0	mg/L			09/16/17 13:09	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	0.357		0.107	0.112	1.00	0.0803	pCi/L	09/15/17 09:45	10/10/17 10:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*09/15/17 09:45*	*10/10/17 10:59*	*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	0.836		0.266	0.277	1.00	0.346	pCi/L	09/15/17 10:27	09/25/17 16:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*09/15/17 10:27*	*09/25/17 16:21*	*1*

Client Sample ID: MW-4
Date Collected: 09/07/17 10:50
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	09/15/17 10:27	09/25/17 16:21	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	1.19		0.287	0.299	5.00	0.346	pCi/L		10/11/17 08:56	1

Client Sample ID: FIELD BLANK

Date Collected: 09/07/17 15:28
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.239**	**J B**	3.00	0.200	mg/L			09/14/17 14:33	1
Fluoride	**0.0333**	**J B**	1.00	0.0100	mg/L			09/14/17 14:33	1
Sulfate	**0.378**	**J**	5.00	0.0300	mg/L			09/14/17 14:33	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		09/15/17 08:26	09/18/17 20:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000454**	**J B**	0.00200	0.0000213	mg/L		09/22/17 08:53	09/26/17 23:14	1
Arsenic	**0.000126**	**J**	0.00500	0.000118	mg/L		09/22/17 08:53	09/26/17 23:14	1
Barium	ND		0.200	0.000270	mg/L		09/22/17 08:53	09/26/17 23:14	1
Beryllium	ND		0.00200	0.000102	mg/L		09/22/17 08:53	09/26/17 23:14	1
Boron	**0.0276**	**J B**	1.00	0.00339	mg/L		09/22/17 08:53	09/26/17 23:14	1
Cadmium	ND		0.00100	0.000152	mg/L		09/22/17 08:53	09/26/17 23:14	1
Calcium	**0.116**	**J**	1.00	0.0412	mg/L		09/22/17 08:53	09/26/17 23:14	1
Chromium	ND		0.00300	0.000339	mg/L		09/22/17 08:53	09/26/17 23:14	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/22/17 08:53	09/26/17 23:14	1
Lead	ND		0.00500	0.0000675	mg/L		09/22/17 08:53	09/26/17 23:14	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/22/17 08:53	09/26/17 23:14	1
Selenium	ND		0.0100	0.000348	mg/L		09/22/17 08:53	09/26/17 23:14	1
Thallium	ND		0.00100	0.0000360	mg/L		09/22/17 08:53	09/26/17 23:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/15/17 09:01	09/15/17 18:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.98**		0.100	0.100	SU			09/14/17 11:23	1
Temperature	**22.4**		0.100	0.100	Degrees C			09/14/17 11:23	1
Total Dissolved Solids	**12.0**		10.0	7.00	mg/L			09/13/17 19:32	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	0.0285	U	0.0566	0.0567	1.00	0.101	pCi/L	09/15/17 09:45	10/10/17 10:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*09/15/17 09:45*	*10/10/17 10:59*	*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	0.00541	U	0.175	0.175	1.00	0.315	pCi/L	09/15/17 10:27	09/25/17 16:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*09/15/17 10:27*	*09/25/17 16:21*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 09/07/17 15:28
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.5		40 - 110	09/15/17 10:27	09/25/17 16:21	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	0.0339	U	0.184	0.184	5.00	0.315	pCi/L		10/11/17 08:56	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-459940/3
Matrix: Water
Analysis Batch: 459940

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2333	J	3.00	0.200	mg/L			09/14/17 11:46	1
Fluoride	0.03278	J	1.00	0.0100	mg/L			09/14/17 11:46	1
Sulfate	ND		5.00	0.0300	mg/L			09/14/17 11:46	1

Lab Sample ID: LCS 490-459940/4
Matrix: Water
Analysis Batch: 459940

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	9.868		mg/L		99	80 - 120
Fluoride	1.00	0.9540	J	mg/L		95	80 - 120
Sulfate	10.0	9.520		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-459940/5
Matrix: Water
Analysis Batch: 459940

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	10.04		mg/L		100	80 - 120	2	20
Fluoride	1.00	0.9598	J	mg/L		96	80 - 120	1	20
Sulfate	10.0	9.500		mg/L		95	80 - 120	0	20

Lab Sample ID: 490-136398-1 MS
Matrix: Water
Analysis Batch: 459940

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	120	E B	2.00	103.1	E 4	mg/L		-821	80 - 120
Fluoride	0.231	J B F1	0.200	0.3465	J F1	mg/L		57	80 - 120
Sulfate	90.1	E	2.00	76.00	E 4	mg/L		-703	80 - 120

Lab Sample ID: 490-136398-1 MSD
Matrix: Water
Analysis Batch: 459940

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	120	E B	2.00	102.7	E 4	mg/L		-840	80 - 120	0	20
Fluoride	0.231	J B F1	0.200	0.3505	J F1	mg/L		59	80 - 120	1	20
Sulfate	90.1	E	2.00	75.45	E 4	mg/L		-731	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-223052/1-A
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/15/17 08:26	09/18/17 19:37	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-223052/2-A
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9691		mg/L		97	80 - 120

Lab Sample ID: 180-70177-C-2-B MS
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0675		1.00	1.075		mg/L		101	75 - 125

Lab Sample ID: 180-70177-C-2-C MSD
Matrix: Water
Analysis Batch: 223267

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 223052

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0675		1.00	1.064		mg/L		100	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-223684/1-A
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 223684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001430	J	0.00200	0.0000213	mg/L		09/22/17 08:53	09/26/17 21:52	1
Arsenic	ND		0.00500	0.000118	mg/L		09/22/17 08:53	09/26/17 21:52	1
Barium	ND		0.200	0.000270	mg/L		09/22/17 08:53	09/26/17 21:52	1
Beryllium	ND		0.00200	0.000102	mg/L		09/22/17 08:53	09/26/17 21:52	1
Boron	0.01852	J	1.00	0.00339	mg/L		09/22/17 08:53	09/26/17 21:52	1
Cadmium	ND		0.00100	0.000152	mg/L		09/22/17 08:53	09/26/17 21:52	1
Calcium	ND		1.00	0.0412	mg/L		09/22/17 08:53	09/26/17 21:52	1
Chromium	ND		0.00300	0.000339	mg/L		09/22/17 08:53	09/26/17 21:52	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/22/17 08:53	09/26/17 21:52	1
Lead	ND		0.00500	0.0000675	mg/L		09/22/17 08:53	09/26/17 21:52	1
Molybdenum	0.001139	J	0.0100	0.000873	mg/L		09/22/17 08:53	09/26/17 21:52	1
Selenium	ND		0.0100	0.000348	mg/L		09/22/17 08:53	09/26/17 21:52	1
Thallium	0.00004500	J	0.00100	0.0000360	mg/L		09/22/17 08:53	09/26/17 21:52	1

Lab Sample ID: LCS 180-223684/2-A
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4951		mg/L		99	80 - 120
Arsenic	0.0400	0.03592		mg/L		90	80 - 120
Barium	2.00	1.850		mg/L		93	80 - 120
Beryllium	0.0500	0.04404		mg/L		88	80 - 120
Boron	1.00	0.8748	J	mg/L		87	80 - 120
Cadmium	0.0500	0.05186		mg/L		104	80 - 120
Calcium	50.0	48.01		mg/L		96	80 - 120

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

Lab Sample ID: LCS 180-223684/2-A
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 223684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.1772		mg/L		89	80 - 120
Cobalt	0.500	0.4507		mg/L		90	80 - 120
Lead	0.0200	0.02008		mg/L		100	80 - 120
Molybdenum	1.00	1.018		mg/L		102	80 - 120
Selenium	0.0100	0.008532	J	mg/L		85	80 - 120
Thallium	0.0500	0.04860		mg/L		97	80 - 120

Lab Sample ID: 180-70255-K-1-B MS
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 223684

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000677	J B	0.500	0.5081		mg/L		101	75 - 125
Arsenic	ND		0.0400	0.03467		mg/L		87	75 - 125
Barium	ND		2.00	1.816		mg/L		91	75 - 125
Beryllium	ND		0.0500	0.04350		mg/L		87	75 - 125
Boron	0.00756	J B	1.00	0.8956	J	mg/L		89	75 - 125
Cadmium	ND		0.0500	0.05286		mg/L		106	75 - 125
Calcium	ND		50.0	46.60		mg/L		93	75 - 125
Chromium	ND		0.200	0.1824		mg/L		91	75 - 125
Cobalt	ND		0.500	0.4655		mg/L		93	75 - 125
Lead	ND		0.0200	0.02047		mg/L		102	75 - 125
Molybdenum	ND		1.00	1.048		mg/L		105	75 - 125
Selenium	ND		0.0100	0.008810	J	mg/L		88	75 - 125
Thallium	ND		0.0500	0.05051		mg/L		101	75 - 125

Lab Sample ID: 180-70255-K-1-C MSD
Matrix: Water
Analysis Batch: 224217

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 223684

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000677	J B	0.500	0.5049		mg/L		101	75 - 125	1	20
Arsenic	ND		0.0400	0.03522		mg/L		88	75 - 125	2	20
Barium	ND		2.00	1.847		mg/L		92	75 - 125	2	20
Beryllium	ND		0.0500	0.04553		mg/L		91	75 - 125	5	20
Boron	0.00756	J B	1.00	0.9258	J	mg/L		92	75 - 125	3	20
Cadmium	ND		0.0500	0.05418		mg/L		108	75 - 125	2	20
Calcium	ND		50.0	46.97		mg/L		94	75 - 125	1	20
Chromium	ND		0.200	0.2031		mg/L		102	75 - 125	11	20
Cobalt	ND		0.500	0.5139		mg/L		103	75 - 125	10	20
Lead	ND		0.0200	0.02088		mg/L		104	75 - 125	2	20
Molybdenum	ND		1.00	1.052		mg/L		105	75 - 125	0	20
Selenium	ND		0.0100	0.008263	J	mg/L		83	75 - 125	6	20
Thallium	ND		0.0500	0.05145		mg/L		103	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-460103/1-A
Matrix: Water
Analysis Batch: 460684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 460103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/15/17 09:01	09/15/17 18:01	1

Lab Sample ID: LCS 490-460103/2-A
Matrix: Water
Analysis Batch: 460684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 460103

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9144		ug/L		91	80 - 120		

Lab Sample ID: LCSD 490-460103/3-A
Matrix: Water
Analysis Batch: 460684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 460103

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.8759		ug/L		88	80 - 120	4	20

Lab Sample ID: 490-136391-F-6-H MS
Matrix: Water
Analysis Batch: 460684

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 460103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND	F2	1.00	1.170		ug/L		117	75 - 125		

Lab Sample ID: 490-136391-F-6-I MSD
Matrix: Water
Analysis Batch: 460684

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 460103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F2	1.00	0.9244	F2	ug/L		92	75 - 125	23	20

Method: 9040C - pH

Lab Sample ID: LCS 490-459912/1
Matrix: Water
Analysis Batch: 459912

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: 490-136142-A-1 DU
Matrix: Water
Analysis Batch: 459912

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	5.01			4.990		SU				0.4	20
Temperature	22.2			22.20		Degrees C				0	20

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

Lab Sample ID: MB 490-459777/1
Matrix: Water
Analysis Batch: 459777

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			09/13/17 19:32	1

Lab Sample ID: LCS 490-459777/2
Matrix: Water
Analysis Batch: 459777

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	101.0		mg/L		101	90 - 110

Lab Sample ID: 490-136475-D-5 DU
Matrix: Water
Analysis Batch: 459777

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	406		581.0	F3	mg/L		35	20

Lab Sample ID: MB 490-460199/1
Matrix: Water
Analysis Batch: 460199

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			09/16/17 13:09	1

Lab Sample ID: LCS 490-460199/2
Matrix: Water
Analysis Batch: 460199

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: 490-136398-2 DU
Matrix: Water
Analysis Batch: 460199

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	4700	H	4892		mg/L		4	20

Lab Sample ID: 490-136644-A-6 DU
Matrix: Water
Analysis Batch: 460199

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	3050		2956		mg/L		3	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-327430/1-A
Matrix: Water
Analysis Batch: 331120

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 327430

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02552	U	0.0486	0.0486	1.00	0.0878	pCi/L	09/15/17 09:45	10/10/17 08:34	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*09/15/17 09:45*	*10/10/17 08:34*	*1*

Lab Sample ID: LCS 160-327430/2-A
Matrix: Water
Analysis Batch: 331120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 327430

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	11.30		1.16	1.00	0.0824	pCi/L	118	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*

Lab Sample ID: 500-133917-Y-1-A MSD
Matrix: Water
Analysis Batch: 331119

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 327430

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	1.71		9.61	11.11		1.14	1.00	0.0657	pCi/L	98	75 - 138	0.15	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*89.4*		*40 - 110*

Lab Sample ID: 500-133917-Z-1-B MS
Matrix: Water
Analysis Batch: 331119

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 327430

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	1.71		9.61	11.45		1.17	1.00	0.0676	pCi/L	101	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*86.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-327435/1-A
Matrix: Water
Analysis Batch: 328875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 327435

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4412	U	0.286	0.289	1.00	0.443	pCi/L	09/15/17 10:27	09/25/17 16:16	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*09/15/17 10:27*	*09/25/17 16:16*	*1*
Y Carrier	*77.8*		*40 - 110*	*09/15/17 10:27*	*09/25/17 16:16*	*1*

Lab Sample ID: LCS 160-327435/2-A
Matrix: Water
Analysis Batch: 328875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 327435

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.9	15.82		1.69	1.00	0.410	pCi/L	123	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*
Y Carrier	*78.9*		*40 - 110*

Lab Sample ID: 500-133917-Y-1-B MSD
Matrix: Water
Analysis Batch: 328858

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 327435

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	2.03		12.9	16.28		1.72	1.00	0.377	pCi/L	111	45 - 150	0.24	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*89.4*		*40 - 110*
Y Carrier	*91.2*		*40 - 110*

Lab Sample ID: 500-133917-Z-1-D MS
Matrix: Water
Analysis Batch: 328858

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 327435

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	2.03		12.9	15.48		1.65	1.00	0.354	pCi/L	105	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*86.4*		*40 - 110*
Y Carrier	*92.0*		*40 - 110*

HPLC/IC

Analysis Batch: 459940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	9056A	
490-136398-1	MW-2	Total/NA	Water	9056A	
490-136398-2	MW-4	Total/NA	Water	9056A	
490-136398-2	MW-4	Total/NA	Water	9056A	
490-136398-2	MW-4	Total/NA	Water	9056A	
490-136398-3	FIELD BLANK	Total/NA	Water	9056A	
MB 490-459940/3	Method Blank	Total/NA	Water	9056A	
LCS 490-459940/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-459940/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-136398-1 MS	MW-2	Total/NA	Water	9056A	
490-136398-1 MSD	MW-2	Total/NA	Water	9056A	

Metals

Prep Batch: 223052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total Recoverable	Water	3005A	
490-136398-2	MW-4	Total Recoverable	Water	3005A	
490-136398-3	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-223052/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-223052/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70177-C-2-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70177-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 223267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total Recoverable	Water	6010C	223052
490-136398-2	MW-4	Total Recoverable	Water	6010C	223052
490-136398-3	FIELD BLANK	Total Recoverable	Water	6010C	223052
MB 180-223052/1-A	Method Blank	Total Recoverable	Water	6010C	223052
LCS 180-223052/2-A	Lab Control Sample	Total Recoverable	Water	6010C	223052
180-70177-C-2-B MS	Matrix Spike	Total Recoverable	Water	6010C	223052
180-70177-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	223052

Prep Batch: 223684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total Recoverable	Water	3005A	
490-136398-2	MW-4	Total Recoverable	Water	3005A	
490-136398-3	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-223684/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-223684/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70255-K-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70255-K-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 224217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total Recoverable	Water	6020A	223684
490-136398-2	MW-4	Total Recoverable	Water	6020A	223684
490-136398-3	FIELD BLANK	Total Recoverable	Water	6020A	223684
MB 180-223684/1-A	Method Blank	Total Recoverable	Water	6020A	223684

Metals (Continued)

Analysis Batch: 224217 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-223684/2-A	Lab Control Sample	Total Recoverable	Water	6020A	223684
180-70255-K-1-B MS	Matrix Spike	Total Recoverable	Water	6020A	223684
180-70255-K-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	223684

Prep Batch: 460103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	7470A	
490-136398-2	MW-4	Total/NA	Water	7470A	
490-136398-3	FIELD BLANK	Total/NA	Water	7470A	
MB 490-460103/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-460103/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-460103/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-136391-F-6-H MS	Matrix Spike	Total/NA	Water	7470A	
490-136391-F-6-I MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 460684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	7470A	460103
490-136398-2	MW-4	Total/NA	Water	7470A	460103
490-136398-3	FIELD BLANK	Total/NA	Water	7470A	460103
MB 490-460103/1-A	Method Blank	Total/NA	Water	7470A	460103
LCS 490-460103/2-A	Lab Control Sample	Total/NA	Water	7470A	460103
LCSD 490-460103/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	460103
490-136391-F-6-H MS	Matrix Spike	Total/NA	Water	7470A	460103
490-136391-F-6-I MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	460103

General Chemistry

Analysis Batch: 459777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	SM 2540C	
490-136398-3	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-459777/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-459777/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-136475-D-5 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 459912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	9040C	
490-136398-2	MW-4	Total/NA	Water	9040C	
490-136398-3	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-459912/1	Lab Control Sample	Total/NA	Water	9040C	
490-136142-A-1 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 460199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-2	MW-4	Total/NA	Water	SM 2540C	
MB 490-460199/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-460199/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-136398-2 DU	MW-4	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 460199 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136644-A-6 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 327430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	PrecSep-21	
490-136398-2	MW-4	Total/NA	Water	PrecSep-21	
490-136398-3	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-327430/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-327430/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-133917-Y-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	
500-133917-Z-1-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	

Prep Batch: 327435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-136398-1	MW-2	Total/NA	Water	PrecSep_0	
490-136398-2	MW-4	Total/NA	Water	PrecSep_0	
490-136398-3	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-327435/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-327435/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
500-133917-Y-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	
500-133917-Z-1-D MS	Matrix Spike	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: MW-2

Date Collected: 09/07/17 13:51
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-1

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			459940	09/14/17 12:41	LDC	TAL NSH
Total/NA	Analysis	9056A		10			459940	09/14/17 13:37	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:39	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223684	09/22/17 08:53	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/26/17 23:04	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	460103	09/15/17 09:01	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			460684	09/15/17 18:17	RDF	TAL NSH
Total/NA	Analysis	9040C		1			459912	09/14/17 11:23	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	459777	09/13/17 19:32	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.62 mL	1.0 g	327430	09/15/17 09:45	LDE	TAL SL
Total/NA	Analysis	903.0		1			331120	10/10/17 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.62 mL	1.0 g	327435	09/15/17 10:27	LDE	TAL SL
Total/NA	Analysis	904.0		1			328858	09/25/17 16:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			331265	10/11/17 08:56	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 09/07/17 10:50
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-2

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			459940	09/14/17 13:55	LDC	TAL NSH
Total/NA	Analysis	9056A		50			459940	09/14/17 15:47	LDC	TAL NSH
Total/NA	Analysis	9056A		100			459940	09/14/17 16:43	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:44	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223684	09/22/17 08:53	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/26/17 23:09	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	460103	09/15/17 09:01	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			460684	09/15/17 18:20	RDF	TAL NSH
Total/NA	Analysis	9040C		1			459912	09/14/17 11:23	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	460199	09/16/17 13:09	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.32 mL	1.0 g	327430	09/15/17 09:45	LDE	TAL SL
Total/NA	Analysis	903.0		1			331120	10/10/17 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.32 mL	1.0 g	327435	09/15/17 10:27	LDE	TAL SL
Total/NA	Analysis	904.0		1			328858	09/25/17 16:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			331265	10/11/17 08:56	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

Client Sample ID: FIELD BLANK

Date Collected: 09/07/17 15:28
Date Received: 09/12/17 08:55

Lab Sample ID: 490-136398-3

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			459940	09/14/17 14:33	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	223052	09/15/17 08:26	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			223267	09/18/17 20:50	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	223684	09/22/17 08:53	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224217	09/26/17 23:14	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	460103	09/15/17 09:01	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			460684	09/15/17 18:22	RDF	TAL NSH
Total/NA	Analysis	9040C		1			459912	09/14/17 11:23	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	459777	09/13/17 19:32	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.74 mL	1.0 g	327430	09/15/17 09:45	LDE	TAL SL
Total/NA	Analysis	903.0		1			331120	10/10/17 10:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.74 mL	1.0 g	327435	09/15/17 10:27	LDE	TAL SL
Total/NA	Analysis	904.0		1			328858	09/25/17 16:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			331265	10/11/17 08:56	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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

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	12-31-17
A2LA	ISO/IEC 17025		0453.07	12-31-17
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	12-31-17
Florida	NELAP	4	E87358	06-30-18
Georgia	State Program	4	E87358(FL)/453.07(A2LA)	12-31-17
Illinois	NELAP	5	200010	12-09-17
Iowa	State Program	7	131	04-01-18
Kansas	NELAP	7	E-10229	10-31-17
Kentucky (UST)	State Program	4	19	06-30-18
Kentucky (WW)	State Program	4	90038	12-31-17
Louisiana	NELAP	6	30613	06-30-18
Maine	State Program	1	TN00032	11-03-17
Maryland	State Program	3	316	03-31-18
Massachusetts	State Program	1	M-TN032	06-30-18
Minnesota	NELAP	5	047-999-345	12-31-17
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	10-09-17 *
New Jersey	NELAP	2	TN965	06-30-18
New York	NELAP	2	11342	03-31-18
North Carolina (WW/SW)	State Program	4	387	12-31-17
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	12-31-17

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.

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	12-31-17
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	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

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
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-136398 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 9/12/2017 @ 0855

Time Samples Removed From Cooler 1428 Time Samples Placed In Storage 1441 (2 Hour Window)

1. Tracking # 0540 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID Raynger pH Strip Lot HC697954 Chlorine Strip Lot 081116K

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: 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) AJH

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) JG

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) AJH

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) AJH

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

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

BIS = Broken in shipment

Loc: 490
136398

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 9/12/2017 @ 0855

Time Samples Removed From Cooler 16:24 Time Samples Placed In Storage 1643 (2 Hour Window)

1. Tracking # 0020 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 97310166 pH Strip Lot HC697956 Chlorine Strip Lot 0811161K

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: 1 (Back) 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) J.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) J.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) ADT

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) ADT

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

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

10/12/2017

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: 09/11/2017**
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: GL CCR Groundwater-Round 8/2nd Semi-Annual	☐ 1 week		
Site: Sebree Station, Green Landfill (GL)	☐ 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)	903.0, 904.0	6010C, 6020A, 7470A	410.4 - COD	9040C, 9050A, 9056A_ORGFM_28D	9060A - TOC	2540C_Calcd - TDS	Sample Specific Notes:
MW-2	9/7/17	1351	G	Water	8	N	N	x	x	x	x	x	x	
MW-4	9/7/17	1050	G	Water	8	N	N	x	x	x	x	x	x	
FIELD BLANK	9/7/17	1528	G	Water	8	N	N	x	x	x	x	x	x	
								4	4	3	7	3	7	

Loc: 490
136398

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 Chapter 45 (Kentucky Special Waste Regulations.) See attached constituent lists for analysis. Please compile two separate reports (1 report for each attached constituent list) for the CCR and Semi-Annual data results.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: 0.3	Corr'd: _____	Therm ID No.: _____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 9/11/2017 1200	Received by:	Company: TAN	Date/Time: 9/12/17 0955
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

10/12/2017

CCR Groundwater (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

Mary Quick
BREC
9/11/2017
1200

Loc: 490
136398

Semi-Annual Groundwater (401 KAR Chapter 45) 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

The following constituents are also requested to be analyzed in conjunction with the constituents listed above:

-Fluoride
-Sulfate
-Antimony
-Arsenic
-Barium
-Beryllium
-Boron
-Cadmium
-Calcium
-Chromium
-Cobalt
-Lead
-Iron
-Lithium
-Mercury
-Molybdenum
-Selenium
-Sodium
-Thallium
-Temperature
-Radium 226 & 228 combined

Greg Quick
BREC
9/11/2017
1200


SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
490-136398 Waybill
TRK#
0201
4055 2582 9023
EV AGCA
THU - 14 SEP 10:30A
PRIORITY OVERNIGHT
15238
PA-US
PIT
Uncorrected temp
Thermometer ID
CF 0
Initials
PT-WI-SR-001 effective 7/26/13
°C

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: 490-62563.1
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):		Job #: 490-136398-1
Address: 13715 Rider Trail North,	Due Date Requested: 10/10/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: GL CCR Groundwater-Round 8	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)	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-2 (490-136398-1)	9/7/17	13:51 Central		Water			X	X	X	2	Historical Review required
MW-4 (490-136398-2)	9/7/17	10:50 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-136398-3)	9/7/17	15:28 Central		Water			X	X	X	2	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
1	Rafferty	9.13.17 11:00am	TAN		9/14/17 0915	TAN
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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-62563.1
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):		Job #: 490-136398-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/10/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: GL 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=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:		X	X				X	
MW-2 (490-136398-1)	9/7/17	13:51 Central		Water			X	X	X	2	Historical Review required
MW-4 (490-136398-2)	9/7/17	10:50 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-136398-3)	9/7/17	15:28 Central		Water			X	X	X	2	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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	9/13/17 11:00am	TAN		9/14/17 0915 0930	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:

10/12/2017

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

Chain of Custody Record

490-136398 Chain of Custody

TestAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		No: 62562.1
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):		Job #: 490-136398-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/5/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GL 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)	6020A/3005A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-2 (490-136398-1)	9/7/17	13:51 Central		Water			X	X	1	Metals - run once, upload together.
MW-4 (490-136398-2)	9/7/17	10:50 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-136398-3)	9/7/17	15:28 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 compliance 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: 9/13/17 11:00am	Company: TAN	Received by:	Date/Time: 9/14/17 0910	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:

10/12/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-136398-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 136398
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: 490-136398-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 136398
List Number: 2
Creator: Neri, Tom

List Source: TestAmerica Pittsburgh
List Creation: 09/14/17 01:09 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	0.2
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: 490-136398-1
SDG Number: Sebree Station, Green Landfill (GL)

Login Number: 136398
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 09/14/17 02:44 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	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: GL CCR Groundwater-Round 8

TestAmerica Job ID: 490-136398-1
SDG: Sebree Station, Green Landfill (GL)

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-136398-1	MW-2	93.5
490-136398-2	MW-4	94.7
490-136398-3	FIELD BLANK	106
500-133917-Y-1-A MSD	Matrix Spike Duplicate	89.4
500-133917-Z-1-B MS	Matrix Spike	86.4
LCS 160-327430/2-A	Lab Control Sample	95.3
MB 160-327430/1-A	Method Blank	92.9

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-136398-1	MW-2	93.5	92.3
490-136398-2	MW-4	94.7	87.1
490-136398-3	FIELD BLANK	106	87.5
500-133917-Y-1-B MSD	Matrix Spike Duplicate	89.4	91.2
500-133917-Z-1-D MS	Matrix Spike	86.4	92.0
LCS 160-327435/2-A	Lab Control Sample	95.3	78.9
MB 160-327435/1-A	Method Blank	92.9	77.8

Tracer/Carrier Legend

Ba = Ba Carrier

Y = 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: 490-138297-1
Client Project/Site: GL CCR Groundwater-Round9
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
10/16/2017 12:08:00 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-138297-1	MW-1	Water	10/05/17 11:50	10/07/17 09:40
490-138297-2	MW-2	Water	10/06/17 13:40	10/07/17 09:40
490-138297-3	MW-3A	Water	10/06/17 13:05	10/07/17 09:40
490-138297-4	MW-4	Water	10/06/17 12:15	10/07/17 09:40
490-138297-5	MW-5	Water	10/06/17 10:55	10/07/17 09:40
490-138297-6	MW-6	Water	10/05/17 13:10	10/07/17 09:40
490-138297-7	DUPE	Water	10/05/17 13:18	10/07/17 09:40
490-138297-8	Field Blank	Water	10/06/17 13:50	10/07/17 09:40

Job ID: 490-138297-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-138297-1

Comments
No additional comments.

Receipt
The samples were received on 10/7/2017 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 0.6° C.

HPLC/IC
Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-1 (490-138297-1), MW-2 (490-138297-2), MW-3A (490-138297-3), MW-4 (490-138297-4), MW-5 (490-138297-5), MW-6 (490-138297-6) and DUPE (490-138297-7). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-466496 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 490-466960 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 490-467069 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-466496 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: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-466960 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.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
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: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-1
Date Collected: 10/05/17 11:50
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	24.9	J B	50.0	0.300	mg/L			10/10/17 07:53	10
Chloride	4.07	F1 B	3.00	0.200	mg/L			10/10/17 06:58	1
Fluoride	0.475	J F1	1.00	0.0100	mg/L			10/10/17 06:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.92		1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:16	1
Calcium	26.4		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.63		0.100	0.100	SU			10/09/17 11:06	1
Temperature	24.4		0.100	0.100	Degrees C			10/09/17 11:06	1
Total Dissolved Solids	636		10.0	7.00	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-2
Date Collected: 10/06/17 13:40
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-2
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	88.6	J B	100	0.600	mg/L			10/10/17 08:29	20
Chloride	129	B	60.0	4.00	mg/L			10/10/17 08:29	20
Fluoride	0.261	J	1.00	0.0100	mg/L			10/10/17 08:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0436	J	1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:21	1
Calcium	150		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.86		0.100	0.100	SU			10/09/17 11:06	1
Temperature	24.2		0.100	0.100	Degrees C			10/09/17 11:06	1
Total Dissolved Solids	970		10.0	7.00	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-3A
Date Collected: 10/06/17 13:05
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-3
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1030	B	500	3.00	mg/L			10/10/17 09:05	100
Chloride	1870	B	600	40.0	mg/L			10/10/17 17:05	200
Fluoride	0.277	J	1.00	0.0100	mg/L			10/10/17 08:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.313	J	1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:25	1
Calcium	408		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.95		0.100	0.100	SU			10/09/17 11:06	1
Temperature	23.7		0.100	0.100	Degrees C			10/09/17 11:06	1
Total Dissolved Solids	5300		40.0	28.0	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-4
Date Collected: 10/06/17 12:15
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-4
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1590	B	500	3.00	mg/L			10/10/17 09:41	100
Chloride	1730	B	300	20.0	mg/L			10/10/17 09:41	100
Fluoride	0.0725	J	1.00	0.0100	mg/L			10/10/17 09:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.36		1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:43	1
Calcium	828		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.93		0.100	0.100	SU			10/09/17 11:06	1
Temperature	23.1		0.100	0.100	Degrees C			10/09/17 11:06	1
Total Dissolved Solids	6220		40.0	28.0	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-5
Date Collected: 10/06/17 10:55
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-5
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1600	B	500	3.00	mg/L			10/10/17 17:41	100
Chloride	608	B	300	20.0	mg/L			10/10/17 17:41	100
Fluoride	0.0891	J	1.00	0.0100	mg/L			10/10/17 17:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.262	J	1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:48	1
Calcium	383		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.06		0.100	0.100	SU			10/09/17 11:06	1
Temperature	23.0		0.100	0.100	Degrees C			10/09/17 11:06	1
Total Dissolved Solids	4390		40.0	28.0	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-6
Date Collected: 10/05/17 13:10
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-6
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2700	B	1000	6.00	mg/L			10/11/17 19:29	200
Chloride	138	B	30.0	2.00	mg/L			10/11/17 18:53	10
Fluoride	0.567	J	1.00	0.0100	mg/L			10/11/17 17:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.178	J	1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:52	1
Calcium	376		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.86		0.100	0.100	SU			10/09/17 11:12	1
Temperature	22.6		0.100	0.100	Degrees C			10/09/17 11:12	1
Total Dissolved Solids	4910		40.0	28.0	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: DUPE
Date Collected: 10/05/17 13:18
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-7
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2850	B	1000	6.00	mg/L			10/11/17 20:42	200
Chloride	119	B	30.0	2.00	mg/L			10/11/17 20:05	10
Fluoride	0.527	J	1.00	0.0100	mg/L			10/11/17 19:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.173	J	1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 00:57	1
Calcium	370		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 00:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.85		0.100	0.100	SU			10/09/17 11:21	1
Temperature	22.6		0.100	0.100	Degrees C			10/09/17 11:21	1
Total Dissolved Solids	5030		40.0	28.0	mg/L			10/08/17 17:10	1

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: Field Blank
Date Collected: 10/06/17 13:50
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-8
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**0.215**	**J B**	5.00	0.0300	mg/L			10/11/17 21:00	1
Chloride	**0.467**	**J B**	3.00	0.200	mg/L			10/11/17 21:00	1
Fluoride	ND		1.00	0.0100	mg/L			10/11/17 21:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.00990**	**J**	1.00	0.00339	mg/L		10/11/17 10:31	10/13/17 01:02	1
Calcium	ND		1.00	0.0412	mg/L		10/11/17 10:31	10/13/17 01:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.86**		0.100	0.100	SU			10/09/17 11:21	1
Temperature	**22.7**		0.100	0.100	Degrees C			10/09/17 11:21	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/12/17 22:40	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-466496/3
Matrix: Water
Analysis Batch: 466496

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.2284	J	5.00	0.0300	mg/L			10/10/17 05:28	1
Chloride	0.6466	J	3.00	0.200	mg/L			10/10/17 05:28	1
Fluoride	ND		1.00	0.0100	mg/L			10/10/17 05:28	1

Lab Sample ID: LCS 490-466496/5
Matrix: Water
Analysis Batch: 466496

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.32		mg/L		103	80 - 120
Chloride	10.0	10.04		mg/L		100	80 - 120
Fluoride	1.00	0.9641	J	mg/L		96	80 - 120

Lab Sample ID: MB 490-466960/3
Matrix: Water
Analysis Batch: 466960

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.1976	J	5.00	0.0300	mg/L			10/10/17 13:46	1
Chloride	0.5371	J	3.00	0.200	mg/L			10/10/17 13:46	1
Fluoride	ND		1.00	0.0100	mg/L			10/10/17 13:46	1

Lab Sample ID: LCS 490-466960/4
Matrix: Water
Analysis Batch: 466960

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	8.850		mg/L		88	80 - 120
Chloride	10.0	8.985		mg/L		90	80 - 120
Fluoride	1.00	0.8746	J	mg/L		87	80 - 120

Lab Sample ID: LCSD 490-466960/5
Matrix: Water
Analysis Batch: 466960

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
Sulfate	10.0	8.861		mg/L		89	80 - 120	0	20
Chloride	10.0	8.953		mg/L		89	80 - 120	0	20
Fluoride	1.00	0.8796	J	mg/L		88	80 - 120	1	20

Lab Sample ID: 490-138354-A-1 MS
Matrix: Water
Analysis Batch: 466960

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
Fluoride	0.470	J	1.00	1.609		mg/L		114	80 - 120

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

Lab Sample ID: 490-138354-A-1 MSD
Matrix: Water
Analysis Batch: 466960

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
Fluoride	0.470	J	1.00	1.451		mg/L		98	80 - 120	10	20

Lab Sample ID: MB 490-467069/3
Matrix: Water
Analysis Batch: 467069

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.1928	J	5.00	0.0300	mg/L			10/11/17 17:05	1
Chloride	0.5298	J	3.00	0.200	mg/L			10/11/17 17:05	1
Fluoride	ND		1.00	0.0100	mg/L			10/11/17 17:05	1

Lab Sample ID: LCS 490-467069/4
Matrix: Water
Analysis Batch: 467069

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.56		mg/L		106	80 - 120
Chloride	10.0	9.990		mg/L		100	80 - 120
Fluoride	1.00	0.9797	J	mg/L		98	80 - 120

Lab Sample ID: 490-138297-6 MS
Matrix: Water
Analysis Batch: 467069

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
Fluoride	0.567	J	1.00	1.585		mg/L		102	80 - 120

Lab Sample ID: 490-138297-6 MSD
Matrix: Water
Analysis Batch: 467069

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
Fluoride	0.567	J	1.00	1.481		mg/L		91	80 - 120	7	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-225493/1-A
Matrix: Water
Analysis Batch: 225796

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 225493

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		10/11/17 10:31	10/12/17 22:08	1
Calcium	ND		1.00	0.0412	mg/L		10/11/17 10:31	10/12/17 22:08	1

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

Lab Sample ID: LCS 180-225493/2-A
Matrix: Water
Analysis Batch: 225796

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 225493

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.9619	J	mg/L		96	80 - 120
Calcium	50.0	48.54		mg/L		97	80 - 120

Lab Sample ID: 490-138125-A-8-B MS
Matrix: Water
Analysis Batch: 225796

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 225493

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.0836	J	1.00	1.130		mg/L		105	75 - 125
Calcium	0.225	J F1	50.0	143.6	F1	mg/L		287	75 - 125

Lab Sample ID: 490-138125-A-8-C MSD
Matrix: Water
Analysis Batch: 225796

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 225493

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.0836	J	1.00	1.158		mg/L		107	75 - 125	2	20
Calcium	0.225	J F1	50.0	143.0	F1	mg/L		286	75 - 125	0	20

Method: 9040C - pH

Lab Sample ID: LCS 490-466414/1
Matrix: Water
Analysis Batch: 466414

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: 490-138011-C-1 DU
Matrix: Water
Analysis Batch: 466414

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.53		6.530		SU		0	20
Temperature	24.4		24.40		Degrees C		0	20

Lab Sample ID: LCS 490-466433/1
Matrix: Water
Analysis Batch: 466433

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: 490-138297-7 DU
Matrix: Water
Analysis Batch: 466433

Client Sample ID: DUPE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.85		6.850		SU		0	20

Method: 9040C - pH (Continued)

Lab Sample ID: 490-138297-7 DU
Matrix: Water
Analysis Batch: 466433

Client Sample ID: DUPE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Temperature	22.6			22.60		Degrees C				0	20

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

Lab Sample ID: MB 490-463776/1
Matrix: Water
Analysis Batch: 463776

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			10/12/17 22:40	1

Lab Sample ID: LCS 490-463776/2
Matrix: Water
Analysis Batch: 463776

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: LCSD 490-463776/3
Matrix: Water
Analysis Batch: 463776

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	94.00		mg/L		94	90 - 110	5	20

Lab Sample ID: 490-138367-I-1 DU
Matrix: Water
Analysis Batch: 463776

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	323			322.0		mg/L				0.3	20

Lab Sample ID: MB 490-464142/1
Matrix: Water
Analysis Batch: 464142

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			10/08/17 17:10	1

Lab Sample ID: LCS 490-464142/2
Matrix: Water
Analysis Batch: 464142

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		

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

Lab Sample ID: 490-136644-A-5 DU
Matrix: Water
Analysis Batch: 464142

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	18800			18080		mg/L				4	20

Lab Sample ID: 490-136644-A-9 DU
Matrix: Water
Analysis Batch: 464142

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	16100			16000		mg/L				0.5	20

HPLC/IC

Analysis Batch: 466496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-1	MW-1	Total/NA	Water	9056A	
490-138297-1	MW-1	Total/NA	Water	9056A	
490-138297-2	MW-2	Total/NA	Water	9056A	
490-138297-2	MW-2	Total/NA	Water	9056A	
490-138297-3	MW-3A	Total/NA	Water	9056A	
490-138297-3	MW-3A	Total/NA	Water	9056A	
490-138297-4	MW-4	Total/NA	Water	9056A	
490-138297-4	MW-4	Total/NA	Water	9056A	
MB 490-466496/3	Method Blank	Total/NA	Water	9056A	
LCS 490-466496/5	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 466960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-3	MW-3A	Total/NA	Water	9056A	
490-138297-5	MW-5	Total/NA	Water	9056A	
490-138297-5	MW-5	Total/NA	Water	9056A	
MB 490-466960/3	Method Blank	Total/NA	Water	9056A	
LCS 490-466960/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-466960/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-138354-A-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-138354-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 467069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-6	MW-6	Total/NA	Water	9056A	
490-138297-6	MW-6	Total/NA	Water	9056A	
490-138297-6	MW-6	Total/NA	Water	9056A	
490-138297-7	DUPE	Total/NA	Water	9056A	
490-138297-7	DUPE	Total/NA	Water	9056A	
490-138297-7	DUPE	Total/NA	Water	9056A	
490-138297-8	Field Blank	Total/NA	Water	9056A	
MB 490-467069/3	Method Blank	Total/NA	Water	9056A	
LCS 490-467069/4	Lab Control Sample	Total/NA	Water	9056A	
490-138297-6 MS	MW-6	Total/NA	Water	9056A	
490-138297-6 MSD	MW-6	Total/NA	Water	9056A	

Metals

Prep Batch: 225493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-1	MW-1	Total Recoverable	Water	3005A	
490-138297-2	MW-2	Total Recoverable	Water	3005A	
490-138297-3	MW-3A	Total Recoverable	Water	3005A	
490-138297-4	MW-4	Total Recoverable	Water	3005A	
490-138297-5	MW-5	Total Recoverable	Water	3005A	
490-138297-6	MW-6	Total Recoverable	Water	3005A	
490-138297-7	DUPE	Total Recoverable	Water	3005A	
490-138297-8	Field Blank	Total Recoverable	Water	3005A	
MB 180-225493/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-225493/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 225493 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138125-A-8-B MS	Matrix Spike	Total Recoverable	Water	3005A	
490-138125-A-8-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 225796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-1	MW-1	Total Recoverable	Water	6020A	225493
490-138297-2	MW-2	Total Recoverable	Water	6020A	225493
490-138297-3	MW-3A	Total Recoverable	Water	6020A	225493
490-138297-4	MW-4	Total Recoverable	Water	6020A	225493
490-138297-5	MW-5	Total Recoverable	Water	6020A	225493
490-138297-6	MW-6	Total Recoverable	Water	6020A	225493
490-138297-7	DUPE	Total Recoverable	Water	6020A	225493
490-138297-8	Field Blank	Total Recoverable	Water	6020A	225493
MB 180-225493/1-A	Method Blank	Total Recoverable	Water	6020A	225493
LCS 180-225493/2-A	Lab Control Sample	Total Recoverable	Water	6020A	225493
490-138125-A-8-B MS	Matrix Spike	Total Recoverable	Water	6020A	225493
490-138125-A-8-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	225493

General Chemistry

Analysis Batch: 463776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-8	Field Blank	Total/NA	Water	SM 2540C	
MB 490-463776/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-463776/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-463776/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-138367-I-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 464142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-1	MW-1	Total/NA	Water	SM 2540C	
490-138297-2	MW-2	Total/NA	Water	SM 2540C	
490-138297-3	MW-3A	Total/NA	Water	SM 2540C	
490-138297-4	MW-4	Total/NA	Water	SM 2540C	
490-138297-5	MW-5	Total/NA	Water	SM 2540C	
490-138297-6	MW-6	Total/NA	Water	SM 2540C	
490-138297-7	DUPE	Total/NA	Water	SM 2540C	
MB 490-464142/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-464142/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-136644-A-5 DU	Duplicate	Total/NA	Water	SM 2540C	
490-136644-A-9 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 466414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-1	MW-1	Total/NA	Water	9040C	
490-138297-2	MW-2	Total/NA	Water	9040C	
490-138297-3	MW-3A	Total/NA	Water	9040C	
490-138297-4	MW-4	Total/NA	Water	9040C	
490-138297-5	MW-5	Total/NA	Water	9040C	
490-138297-6	MW-6	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 466414 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-466414/1	Lab Control Sample	Total/NA	Water	9040C	
490-138011-C-1 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 466433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138297-7	DUPE	Total/NA	Water	9040C	
490-138297-8	Field Blank	Total/NA	Water	9040C	
LCS 490-466433/1	Lab Control Sample	Total/NA	Water	9040C	
490-138297-7 DU	DUPE	Total/NA	Water	9040C	

Client Sample ID: MW-1

Date Collected: 10/05/17 11:50
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-1
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			466496	10/10/17 06:58	JHS	TAL NSH
Total/NA	Analysis	9056A		10			466496	10/10/17 07:53	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:16	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466414	10/09/17 11:06	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Client Sample ID: MW-2

Date Collected: 10/06/17 13:40
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-2
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			466496	10/10/17 08:11	JHS	TAL NSH
Total/NA	Analysis	9056A		20			466496	10/10/17 08:29	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:21	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466414	10/09/17 11:06	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Client Sample ID: MW-3A

Date Collected: 10/06/17 13:05
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-3
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			466496	10/10/17 08:47	JHS	TAL NSH
Total/NA	Analysis	9056A		100			466496	10/10/17 09:05	JHS	TAL NSH
Total/NA	Analysis	9056A		200			466960	10/10/17 17:05	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:25	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466414	10/09/17 11:06	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Client Sample ID: MW-4

Date Collected: 10/06/17 12:15
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-4
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			466496	10/10/17 09:23	JHS	TAL NSH
Total/NA	Analysis	9056A		100			466496	10/10/17 09:41	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:43	WTR	TAL PIT

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: MW-4

Date Collected: 10/06/17 12:15
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-4

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	9040C		1			466414	10/09/17 11:06	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Client Sample ID: MW-5

Date Collected: 10/06/17 10:55
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-5

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			466960	10/10/17 17:23	SW1	TAL NSH
Total/NA	Analysis	9056A		100			466960	10/10/17 17:41	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:48	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466414	10/09/17 11:06	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Client Sample ID: MW-6

Date Collected: 10/05/17 13:10
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-6

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			467069	10/11/17 17:59	JHS	TAL NSH
Total/NA	Analysis	9056A		10			467069	10/11/17 18:53	JHS	TAL NSH
Total/NA	Analysis	9056A		200			467069	10/11/17 19:29	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:52	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466414	10/09/17 11:12	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Client Sample ID: DUPE

Date Collected: 10/05/17 13:18
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-7

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			467069	10/11/17 19:47	JHS	TAL NSH
Total/NA	Analysis	9056A		10			467069	10/11/17 20:05	JHS	TAL NSH
Total/NA	Analysis	9056A		200			467069	10/11/17 20:42	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 00:57	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466433	10/09/17 11:21	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	464142	10/08/17 17:10	AEC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

Client Sample ID: Field Blank

Date Collected: 10/06/17 13:50
Date Received: 10/07/17 09:40

Lab Sample ID: 490-138297-8

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			467069	10/11/17 21:00	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225493	10/11/17 10:31	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225796	10/13/17 01:02	WTR	TAL PIT
Total/NA	Analysis	9040C		1			466433	10/09/17 11:21	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463776	10/12/17 22:40	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: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

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: GL CCR Groundwater-Round9

TestAmerica Job ID: 490-138297-1

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	12-31-17
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	01-31-18
Wisconsin	State Program	5	998027800	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-138297 Chain of Custody

Cooler Received/Opened On 10/07/17 0940

Time Samples Removed From Cooler 1737 Time Samples Placed In Storage 1749 (2 Hour Window)

1. Tracking # 0789 (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: 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: 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) HZG

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) HZG

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) HZG

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) HZG

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

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

BIS = Broken in shipment

Loc: 490
138297

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 10/7/2017 @ 0940

Time Samples Removed From Cooler 1737 Time Samples Placed In Storage 1749 (2 Hour Window)

1. Tracking # 0940 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID Raynger pH Strip Lot NA Chlorine Strip Lot NA

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) EZA

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) HK

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) HK

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) HK

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

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
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10/16/2017

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: 10/06/2017**
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: GL CCR Groundwater-Round 9	☐ 1 week		
Site: Sebree Station, Green Landfill (GL)	☐ 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.:

Loc: 490
138297

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	10/5/17	1150	G	Water	3	N	N	x	x	x	
MW-2	10/6/17	1340	G	Water	3	N	N	x	x	x	
MW-3A	10/6/17	1305	G	Water	3	N	N	x	x	x	sample bottles labeled as MW-3 are same as MW-3A
MW-4	10/6/17	1215	G	Water	3	N	N	x	x	x	
MW-5	10/6/17	1055	G	Water	3	N	N	x	x	x	
MW-6	10/5/17	1310	G	Water	3	N	N	x	x	x	
DUPE	10/5/17	1318	G	Water	3	N	N	x	x	x	
FIELD BLANK	10/6/17	1350	G	Water	3	N	N	x	x	x	
								7	4	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, **Appendix III ONLY (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: 10/6/17 1600	Received by:	Company:	Date/Time:	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 10/6/17	Company: TAN	Date/Time: 10/7/17 0940	

Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

BREC
10/6/2017
1600

Loc: 490
138297
#1
A

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

Mat IBB

Chain of Custody Record

490-138297 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxann	COC No: 490-63815.1
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 #: 490-138297-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/19/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: GL CCR Groundwater-Round9	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)	6020A/3005A (MOD) B & Ca	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-1 (490-138297-1)	10/5/17	11:50 Central		Water			X	1	Metals - run once, upload together.
MW-2 (490-138297-2)	10/6/17	13:40 Central		Water			X	1	Metals - run once, upload together.
MW-3A (490-138297-3)	10/6/17	13:05 Central		Water			X	1	Metals - run once, upload together.
MW-4 (490-138297-4)	10/6/17	12:15 Central		Water			X	1	Metals - run once, upload together.
MW-5 (490-138297-5)	10/6/17	10:55 Central		Water			X	1	Metals - run once, upload together.
MW-6 (490-138297-6)	10/5/17	13:10 Central		Water			X	1	Metals - run once, upload together.
DUPE (490-138297-7)	10/5/17	13:18 Central		Water			X	1	Metals - run once, upload together.
Field Blank (490-138297-8)	10/6/17	13:50 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 *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
[signature]	10.9.17	TAN	[signature]	10/10/17 900	TAP
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:

Page 31 of 33

10/16/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-138297-1

Login Number: 138297
List Number: 1
Creator: Gundi, Hozar K

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.	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	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-138297-1

Login Number: 138297
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 10/10/17 01:29 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	

GREEN STATION SURFACE IMPOUNDMENT

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: 490-101192-1
Client Project/Site: Green Ash Pond CCR - GW - Round 1

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

Attn: Brad Coyle

Cathy Gartner

Authorized for release by:
5/23/2016 1:36:54 PM
Cathy Gartner, Project Manager I
(615)301-5041
cathy.gartner@testamericainc.com

Designee for

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

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-101192-1	MW-11	Water	04/01/16 10:45	04/07/16 09:40
490-101192-2	MW-12	Water	04/01/16 15:30	04/07/16 09:40
490-101192-3	MW-13	Water	04/01/16 12:40	04/07/16 09:40
490-101192-4	MW-14	Water	04/01/16 14:10	04/07/16 09:40
490-101192-5	DUPE	Water	04/01/16 12:55	04/07/16 09:40
490-101192-6	Field Blank	Water	04/01/16 18:25	04/07/16 09:40

Job ID: 490-101192-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-101192-1

Comments
No additional comments.

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.

Receipt Exceptions

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): Field Blank (490-101192-6) Analyzed per client request.

RAD
Method(s) 903.0: Radium-226 Prep Batch 160-248484:
The Laboratory Control Sample (LCS) spike recovery (141%) associated with the following samples is outside the upper QC limit of 137% indicating a potential positive bias for that analyte : Field Blank (490-101192-6), (LCS 160-248484/2-A), (LCSD 160-248484/3-A) and (MB 160-248484/1-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.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-248484:
Insufficient sample volume was available to perform a sample duplicate (DUP) for sample Field Blank (490-101192-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead. The sample was prepared at a reduced aliquot due to re-analysis.

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-11 (490-101192-1), MW-12 (490-101192-2), MW-13 (490-101192-3), MW-14 (490-101192-4), DUPE (490-101192-5), (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-11 (490-101192-1), MW-12 (490-101192-2), MW-13 (490-101192-3), MW-14 (490-101192-4) and DUPE (490-101192-5). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-248486:
Insufficient sample volume was available to perform a sample duplicate (DUP) for sample Field Blank (490-101192-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead. The sample was prepared at a reduced aliquot due to re-analysis.

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-11 (490-101192-1), MW-12 (490-101192-2), MW-13 (490-101192-3), MW-14 (490-101192-4) and DUPE (490-101192-5). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead.

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

Narrative

HPLC/IC
Method(s) 9056A: The method blank for 490-332637contained Chloride above the method detection limit (MDL). Associated samples were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Job ID: 490-101192-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

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 sample was diluted due to the nature of the sample matrix: MW-11 (490-101192-1). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for 490-334032 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) 300.0, 9056A: The following samples were diluted due to the nature of the sample matrix: (490-101188-B-1), (490-101188-B-1 MS) and (490-101188-B-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) 300.0, 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
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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Rad

Qualifier	Qualifier Description
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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-11

Date Collected: 04/01/16 10:45
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.193	J	1.00	0.0100	mg/L			04/19/16 01:43	1
Sulfate	1170		500	3.00	mg/L			04/19/16 02:02	100
Chloride	1070	B	300	20.0	mg/L			04/19/16 02:02	100

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	04/12/16 21:04	1
Arsenic	0.00478	J	0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:04	1
Barium	0.0760	J	0.200	0.000500	mg/L		04/11/16 08:53	04/12/16 21:04	1
Beryllium	ND		0.00200	0.00100	mg/L		04/11/16 08:53	04/12/16 21:04	1
Boron	0.818	J B	1.00	0.000700	mg/L		04/11/16 08:53	04/12/16 21:04	1
Cadmium	ND		0.00100	0.000400	mg/L		04/11/16 08:53	04/12/16 21:04	1
Calcium	371		10.0	1.25	mg/L		04/11/16 08:53	04/20/16 19:24	10
Chromium	ND		0.00300	0.000500	mg/L		04/11/16 08:53	04/12/16 21:04	1
Cobalt	0.00494	J	0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:04	1
Lead	ND		0.00500	0.000200	mg/L		04/11/16 08:53	04/12/16 21:04	1
Lithium	0.0365	J	0.0500	0.000800	mg/L		04/11/16 08:53	04/12/16 21:04	1
Molybdenum	0.0163		0.0100	0.000500	mg/L		04/11/16 08:53	04/12/16 21:04	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/12/16 21:04	1
Thallium	0.000542	J	0.00100	0.000500	mg/L		04/11/16 08:53	04/12/16 21:04	1

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 16:34	04/11/16 23:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3920	H	40.0	28.0	mg/L			04/12/16 19:40	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	0.665		0.175	0.185	1.00	0.185	pCi/L	04/13/16 11:37	05/05/16 07:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.1*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:20*	*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	0.689		0.321	0.328	1.00	0.465	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.6*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*92.0*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: MW-11
Date Collected: 04/01/16 10:45
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-1
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	1.35		0.366	0.376	5.00	0.465	pCi/L		05/22/16 20:51	1

Client Sample ID: MW-12

Date Collected: 04/01/16 15:30
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.920	J	1.00	0.0100	mg/L			04/19/16 02:21	1
Sulfate	168		5.00	0.0300	mg/L			04/19/16 02:21	1
Chloride	29.0	B	3.00	0.200	mg/L			04/19/16 02:21	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00204		0.00200	0.000500	mg/L		04/11/16 08:53	04/12/16 21:10	1
Arsenic	0.00596		0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:10	1
Barium	0.0552	J	0.200	0.000500	mg/L		04/11/16 08:53	04/12/16 21:10	1
Beryllium	ND		0.00200	0.00100	mg/L		04/11/16 08:53	04/12/16 21:10	1
Boron	0.174	J B	1.00	0.000700	mg/L		04/11/16 08:53	04/12/16 21:10	1
Cadmium	ND		0.00100	0.000400	mg/L		04/11/16 08:53	04/12/16 21:10	1
Calcium	68.6		1.00	0.125	mg/L		04/11/16 08:53	04/12/16 21:10	1
Chromium	0.000810	J	0.00300	0.000500	mg/L		04/11/16 08:53	04/12/16 21:10	1
Cobalt	ND		0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:10	1
Lead	0.000331	J	0.00500	0.000200	mg/L		04/11/16 08:53	04/12/16 21:10	1
Lithium	0.0100	J	0.0500	0.000800	mg/L		04/11/16 08:53	04/12/16 21:10	1
Molybdenum	0.0769		0.0100	0.000500	mg/L		04/11/16 08:53	04/13/16 19:57	1
Selenium	0.000773	J	0.0100	0.000600	mg/L		04/11/16 08:53	04/12/16 21:10	1
Thallium	ND		0.00100	0.000500	mg/L		04/11/16 08:53	04/12/16 21:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:34	04/11/16 23:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	472		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	0.455		0.179	0.183	1.00	0.193	pCi/L	04/13/16 11:37	05/05/16 07:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:20*	*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	0.386	U	0.357	0.358	1.00	0.576	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*94.2*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: MW-12
Date Collected: 04/01/16 15:30
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-2
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	0.842		0.399	0.402	5.00	0.576	pCi/L		05/22/16 20:51	1

Client Sample ID: MW-13

Date Collected: 04/01/16 12:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.272	J	1.00	0.0100	mg/L			04/19/16 02:39	1
Sulfate	118		5.00	0.0300	mg/L			04/19/16 02:39	1
Chloride	20.5	B	3.00	0.200	mg/L			04/19/16 02:39	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	04/12/16 21:15	1
Arsenic	0.00311	J	0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:15	1
Barium	0.0965	J	0.200	0.000500	mg/L		04/11/16 08:53	04/12/16 21:15	1
Beryllium	ND		0.00200	0.00100	mg/L		04/11/16 08:53	04/12/16 21:15	1
Boron	0.0350	J B	1.00	0.000700	mg/L		04/11/16 08:53	04/12/16 21:15	1
Cadmium	ND		0.00100	0.000400	mg/L		04/11/16 08:53	04/12/16 21:15	1
Calcium	93.0		1.00	0.125	mg/L		04/11/16 08:53	04/12/16 21:15	1
Chromium	ND		0.00300	0.000500	mg/L		04/11/16 08:53	04/12/16 21:15	1
Cobalt	0.00378	J	0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:15	1
Lead	0.000216	J	0.00500	0.000200	mg/L		04/11/16 08:53	04/12/16 21:15	1
Lithium	0.00929	J	0.0500	0.000800	mg/L		04/11/16 08:53	04/12/16 21:15	1
Molybdenum	0.00353	J	0.0100	0.000500	mg/L		04/11/16 08:53	04/13/16 20:02	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/12/16 21:15	1
Thallium	ND		0.00100	0.000500	mg/L		04/11/16 08:53	04/12/16 21:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:34	04/11/16 23:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	699		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	0.132		0.0794	0.0803	1.00	0.112	pCi/L	04/13/16 11:37	05/05/16 07:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.2*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:20*	*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	0.297	U	0.308	0.309	1.00	0.503	pCi/L	04/13/16 12:28	04/29/16 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.2*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*
Y Carrier	*90.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: MW-13
Date Collected: 04/01/16 12:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-3
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	0.429	U	0.318	0.320	5.00	0.503	pCi/L		05/22/16 20:51	1

Client Sample ID: MW-14

Date Collected: 04/01/16 14:10
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.326**	**J**	1.00	0.0100	mg/L			04/19/16 02:58	1
Sulfate	**188**		50.0	0.300	mg/L			04/23/16 12:15	10
Chloride	**161**	**B**	3.00	0.200	mg/L			04/19/16 02:58	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	04/12/16 21:21	1
Arsenic	**0.00294**	**J**	0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:21	1
Barium	**0.0647**	**J**	0.200	0.000500	mg/L		04/11/16 08:53	04/12/16 21:21	1
Beryllium	ND		0.00200	0.00100	mg/L		04/11/16 08:53	04/12/16 21:21	1
Boron	**0.196**	**J B**	1.00	0.000700	mg/L		04/11/16 08:53	04/12/16 21:21	1
Cadmium	ND		0.00100	0.000400	mg/L		04/11/16 08:53	04/12/16 21:21	1
Calcium	**194**		10.0	1.25	mg/L		04/11/16 08:53	04/20/16 19:29	10
Chromium	ND		0.00300	0.000500	mg/L		04/11/16 08:53	04/12/16 21:21	1
Cobalt	ND		0.00500	0.000500	mg/L		04/11/16 08:53	04/12/16 21:21	1
Lead	ND		0.00500	0.000200	mg/L		04/11/16 08:53	04/12/16 21:21	1
Lithium	**0.0400**	**J**	0.0500	0.000800	mg/L		04/11/16 08:53	04/12/16 21:21	1
Molybdenum	**0.000598**	**J**	0.0100	0.000500	mg/L		04/11/16 08:53	04/12/16 21:21	1
Selenium	ND		0.0100	0.000600	mg/L		04/11/16 08:53	04/12/16 21:21	1
Thallium	ND		0.00100	0.000500	mg/L		04/11/16 08:53	04/12/16 21:21	1

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 16:34	04/11/16 23:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1080**		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	**0.661**		0.126	0.139	1.00	0.0957	pCi/L	04/13/16 11:37	05/05/16 07:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.5*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:23*	*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	**0.883**		0.329	0.339	1.00	0.453	pCi/L	04/13/16 12:28	04/29/16 11:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.5*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:49*	*1*
Y Carrier	*90.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:49*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: MW-14
Date Collected: 04/01/16 14:10
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-4
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	1.54		0.352	0.366	5.00	0.453	pCi/L		05/22/16 20:51	1

Client Sample ID: DUPE

Date Collected: 04/01/16 12:55
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.271**	**J**	1.00	0.0100	mg/L			04/19/16 03:16	1
Sulfate	**117**		5.00	0.0300	mg/L			04/19/16 03:16	1
Chloride	**20.2**	**B**	3.00	0.200	mg/L			04/19/16 03:16	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		04/12/16 08:59	04/16/16 23:33	10
Arsenic	ND		0.0500	0.00500	mg/L		04/12/16 08:59	04/16/16 23:33	10
Barium	**0.0995**	**J**	2.00	0.00500	mg/L		04/12/16 08:59	04/16/16 23:33	10
Beryllium	ND		0.0200	0.0100	mg/L		04/12/16 08:59	04/16/16 23:33	10
Boron	**0.0383**	**J B**	10.0	0.00700	mg/L		04/12/16 08:59	04/16/16 23:33	10
Cadmium	ND		0.00100	0.000400	mg/L		04/12/16 08:59	04/20/16 19:12	1
Calcium	**86.3**		10.0	1.25	mg/L		04/12/16 08:59	04/16/16 23:33	10
Chromium	ND		0.0300	0.00500	mg/L		04/12/16 08:59	04/16/16 23:33	10
Cobalt	ND		0.0500	0.00500	mg/L		04/12/16 08:59	04/16/16 23:33	10
Lead	ND		0.0500	0.00200	mg/L		04/12/16 08:59	04/16/16 23:33	10
Lithium	**0.0101**	**J**	0.0500	0.000800	mg/L		04/12/16 08:59	04/20/16 19:12	1
Molybdenum	ND		0.100	0.00500	mg/L		04/12/16 08:59	04/16/16 23:33	10
Selenium	ND		0.100	0.00600	mg/L		04/12/16 08:59	04/16/16 23:33	10
Thallium	ND		0.0100	0.00500	mg/L		04/12/16 08:59	04/16/16 23:33	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 16:34	04/11/16 23:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**697**		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	**0.197**		0.0815	0.0834	1.00	0.0982	pCi/L	04/13/16 11:37	05/05/16 07:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*04/13/16 11:37*	*05/05/16 07:23*	*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	0.287	U	0.280	0.282	1.00	0.454	pCi/L	04/13/16 12:28	04/29/16 11:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:49*	*1*
Y Carrier	*88.6*		*40 - 110*	*04/13/16 12:28*	*04/29/16 11:49*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: DUPE
Date Collected: 04/01/16 12:55
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-5
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	0.485		0.292	0.294	5.00	0.454	pCi/L		05/22/16 20:51	1

Client Sample ID: Field Blank

Date Collected: 04/01/16 18:25
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			04/19/16 03:35	1
Sulfate	ND		5.00	0.0300	mg/L			04/19/16 03:35	1
Chloride	**0.289**	**J B**	3.00	0.200	mg/L			04/19/16 03:35	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		04/12/16 08:59	04/16/16 23:39	10
Arsenic	ND		0.0500	0.00500	mg/L		04/12/16 08:59	04/16/16 23:39	10
Barium	ND		2.00	0.00500	mg/L		04/12/16 08:59	04/16/16 23:39	10
Beryllium	ND		0.0200	0.0100	mg/L		04/12/16 08:59	04/16/16 23:39	10
Boron	**0.0470**	**J B**	10.0	0.00700	mg/L		04/12/16 08:59	04/14/16 15:37	10
Cadmium	ND		0.00100	0.000400	mg/L		04/12/16 08:59	04/20/16 19:18	1
Calcium	ND		10.0	1.25	mg/L		04/12/16 08:59	04/16/16 23:39	10
Chromium	**0.0203**	**J**	0.0300	0.00500	mg/L		04/12/16 08:59	04/16/16 23:39	10
Cobalt	ND		0.0500	0.00500	mg/L		04/12/16 08:59	04/16/16 23:39	10
Lead	ND		0.0500	0.00200	mg/L		04/12/16 08:59	04/16/16 23:39	10
Lithium	ND		0.500	0.00800	mg/L		04/12/16 08:59	04/14/16 15:37	10
Molybdenum	ND		0.100	0.00500	mg/L		04/12/16 08:59	04/16/16 23:39	10
Selenium	ND		0.100	0.00600	mg/L		04/12/16 08:59	04/16/16 23:39	10
Thallium	ND		0.0100	0.00500	mg/L		04/12/16 08:59	04/16/16 23:39	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 16:34	04/11/16 23:24	1

General Chemistry

Analyte	Result	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

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.135**	*	0.0922	0.0930	1.00	0.131	pCi/L	04/28/16 15:26	05/20/16 07:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*04/28/16 15:26*	*05/20/16 07:27*	*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	-0.189	U	0.403	0.403	1.00	0.758	pCi/L	04/28/16 15:33	05/09/16 13:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*04/28/16 15:33*	*05/09/16 13:05*	*1*
Y Carrier	*94.2*		*40 - 110*	*04/28/16 15:33*	*05/09/16 13:05*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: Field Blank
Date Collected: 04/01/16 18:25
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-6
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	-0.0545	U	0.413	0.414	5.00	0.758	pCi/L		05/22/16 20:51	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-B-1 MS
Matrix: Water
Analysis Batch: 332637

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
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-B-1 MSD
Matrix: Water
Analysis Batch: 332637

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
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-B-1 MS
Matrix: Water
Analysis Batch: 334032

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
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-B-1 MSD
Matrix: Water
Analysis Batch: 334032

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
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: 332612

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
Lithium	ND		0.0500	0.000800	mg/L		04/11/16 08:53	04/12/16 13:32	1
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: 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
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

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

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.112	J B F1	1.00	1.385	J F1	mg/L		127	75 - 125

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

Client Sample ID: Matrix Spike
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
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

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

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

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 330466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
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-A-2-C MSD
Matrix: Water
Analysis Batch: 331103

Client Sample ID: Matrix Spike Duplicate
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
Boron	0.112	J B F1	1.00	1.472	J F1	mg/L		136	75 - 125	6	20

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

Client Sample ID: Matrix Spike Duplicate
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

Lab Sample ID: MB 490-330753/1-A
Matrix: Water
Analysis Batch: 331937

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1
Arsenic	0.0007466	J	0.00500	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1
Barium	ND		0.200	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1
Beryllium	ND		0.00200	0.00100	mg/L		04/12/16 08:59	04/14/16 13:47	1
Boron	0.001040	J	1.00	0.000700	mg/L		04/12/16 08:59	04/14/16 13:47	1
Cadmium	ND		0.00100	0.000400	mg/L		04/12/16 08:59	04/14/16 13:47	1
Calcium	ND		1.00	0.125	mg/L		04/12/16 08:59	04/14/16 13:47	1
Chromium	ND		0.00300	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1
Cobalt	ND		0.00500	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1
Lead	ND		0.00500	0.000200	mg/L		04/12/16 08:59	04/14/16 13:47	1
Lithium	ND		0.0500	0.000800	mg/L		04/12/16 08:59	04/14/16 13:47	1
Molybdenum	ND		0.0100	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1
Selenium	ND		0.0100	0.000600	mg/L		04/12/16 08:59	04/14/16 13:47	1

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

Lab Sample ID: MB 490-330753/1-A
Matrix: Water
Analysis Batch: 331937

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.00100	0.000500	mg/L		04/12/16 08:59	04/14/16 13:47	1

Lab Sample ID: LCS 490-330753/2-A
Matrix: Water
Analysis Batch: 331937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 330753

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.1012		mg/L		101	80 - 120
Arsenic	0.100	0.08511		mg/L		85	80 - 120
Barium	0.100	0.09479	J	mg/L		95	80 - 120
Beryllium	0.100	0.09703		mg/L		97	80 - 120
Boron	1.00	1.035		mg/L		104	80 - 120
Cadmium	0.100	0.09294		mg/L		93	80 - 120
Calcium	10.0	9.230		mg/L		92	80 - 120
Chromium	0.100	0.09164		mg/L		92	80 - 120
Cobalt	0.100	0.09479		mg/L		95	80 - 120
Lead	0.100	0.09914		mg/L		99	80 - 120
Molybdenum	0.100	0.09873		mg/L		99	80 - 120
Selenium	0.100	0.08183		mg/L		82	80 - 120
Thallium	0.100	0.1001		mg/L		100	80 - 120

Lab Sample ID: 490-98290-C-2-C MSD
Matrix: Water
Analysis Batch: 331937

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 330753

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.100	0.1051		mg/L		105	75 - 125	2	20
Arsenic	0.00725	B	0.100	0.09664		mg/L		89	75 - 125	1	20
Barium	0.0211	J	0.100	0.1197	J	mg/L		99	75 - 125	2	20
Beryllium	ND		0.100	0.1022		mg/L		102	75 - 125	4	20
Boron	1.23	B	1.00	2.363		mg/L		114	75 - 125	4	20
Cadmium	ND		0.100	0.09495		mg/L		95	75 - 125	3	20
Calcium	286	E	10.0	297.5	E 4	mg/L		114	75 - 125	2	20
Chromium	ND		0.100	0.09157		mg/L		92	75 - 125	3	20
Cobalt	ND		0.100	0.1004		mg/L		100	75 - 125	1	20
Lead	ND		0.100	0.1029		mg/L		103	75 - 125	4	20
Molybdenum	ND		0.100	0.09971		mg/L		100	75 - 125	1	20
Selenium	0.00515	J	0.100	0.09691		mg/L		92	75 - 125	1	20
Thallium	ND		0.100	0.1059		mg/L		106	75 - 125	3	20

Lab Sample ID: 490-98290-D-2-D MS
Matrix: Water
Analysis Batch: 331937

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 330753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.100	0.1031		mg/L		103	75 - 125
Arsenic	0.00725	B	0.100	0.09773		mg/L		90	75 - 125
Barium	0.0211	J	0.100	0.1171	J	mg/L		96	75 - 125
Beryllium	ND		0.100	0.09859		mg/L		99	75 - 125

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

Lab Sample ID: 490-98290-D-2-D MS
Matrix: Water
Analysis Batch: 331937

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 330753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.23	B	1.00	2.265		mg/L		104	75 - 125
Cadmium	ND		0.100	0.09816		mg/L		98	75 - 125
Calcium	286	E	10.0	302.6	E 4	mg/L		165	75 - 125
Chromium	ND		0.100	0.09395		mg/L		94	75 - 125
Cobalt	ND		0.100	0.1019		mg/L		102	75 - 125
Lead	ND		0.100	0.09928		mg/L		99	75 - 125
Molybdenum	ND		0.100	0.1012		mg/L		101	75 - 125
Selenium	0.00515	J	0.100	0.09807		mg/L		93	75 - 125
Thallium	ND		0.100	0.1025		mg/L		103	75 - 125

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-330681/1-A
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 330681

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/11/16 16:34	04/11/16 22:56	1

Lab Sample ID: LCS 490-330681/2-A
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 330681

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.8160		ug/L		82	80 - 120

Lab Sample ID: LCSD 490-330681/3-A
Matrix: Water
Analysis Batch: 330724

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 330681

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.00	0.8319		ug/L		83	80 - 120	2	20

Lab Sample ID: 490-101192-1 MS
Matrix: Water
Analysis Batch: 330724

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 330681

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.8671		ug/L		87	75 - 125

Lab Sample ID: 490-101192-1 MSD
Matrix: Water
Analysis Batch: 330724

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 330681

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8750		ug/L		88	75 - 125	1	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: 490-101192-3 DU
Matrix: Water
Analysis Batch: 328125

Client Sample ID: MW-13
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

Lab Sample ID: MB 490-330905/1
Matrix: Water
Analysis Batch: 330905

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			04/12/16 19:40	1

Lab Sample ID: 490-101172-B-2 DU
Matrix: Water
Analysis Batch: 330905

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	1340		1344		mg/L		0.1	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*

Method: 903.0 - Radium-226 (GFPC) (Continued)

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*

Lab Sample ID: MB 160-248484/1-A
Matrix: Water
Analysis Batch: 252214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 248484

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1897		0.0917	0.0932	1.00	0.104	pCi/L	04/28/16 15:26	05/20/16 07:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*04/28/16 15:26*	*05/20/16 07:26*	*1*

Lab Sample ID: LCS 160-248484/2-A
Matrix: Water
Analysis Batch: 252246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 248484

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			22.3	31.50	*	3.00	1.00	0.160	pCi/L	141	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*86.0*		*40 - 110*

Lab Sample ID: LCSD 160-248484/3-A
Matrix: Water
Analysis Batch: 252246

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 248484

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			22.3	29.73		2.85	1.00	0.171	pCi/L	133	68 - 137	0.30	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-248484/3-A
Matrix: Water
Analysis Batch: 252246

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 248484

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	87.7		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

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

Lab Sample ID: MB 160-248486/1-A
Matrix: Water
Analysis Batch: 250074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 248486

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.3822	U	0.345	0.347	1.00	0.699	pCi/L	04/28/16 15:33	05/09/16 13:05	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110	04/28/16 15:33	05/09/16 13:05	1
Y Carrier	95.3		40 - 110	04/28/16 15:33	05/09/16 13:05	1

Lab Sample ID: LCS 160-248486/2-A
Matrix: Water
Analysis Batch: 250074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 248486

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			30.4	40.80		4.22	1.00	0.746	pCi/L	134	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	86.0		40 - 110
Y Carrier	96.1		40 - 110

Lab Sample ID: LCSD 160-248486/3-A
Matrix: Water
Analysis Batch: 250074

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 248486

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			30.4	42.58		4.37	1.00	0.728	pCi/L	140	56 - 140	0.21	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	87.7		40 - 110
Y Carrier	96.4		40 - 110

HPLC/IC

Analysis Batch: 332637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-B-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-101188-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	
490-101192-1	MW-11	Total/NA	Water	9056A	
490-101192-1	MW-11	Total/NA	Water	9056A	
490-101192-2	MW-12	Total/NA	Water	9056A	
490-101192-3	MW-13	Total/NA	Water	9056A	
490-101192-4	MW-14	Total/NA	Water	9056A	
490-101192-5	DUPE	Total/NA	Water	9056A	
490-101192-6	Field Blank	Total/NA	Water	9056A	
LCS 490-332637/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-332637/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-332637/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 334032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-B-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-101188-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	
490-101192-4	MW-14	Total/NA	Water	9056A	
LCS 490-334032/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-334032/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-334032/3	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 330466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-A-2-B MS	Matrix Spike	Total/NA	Water	3010A	
490-101188-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
490-101192-1	MW-11	Total/NA	Water	3010A	
490-101192-2	MW-12	Total/NA	Water	3010A	
490-101192-3	MW-13	Total/NA	Water	3010A	
490-101192-4	MW-14	Total/NA	Water	3010A	
LCS 490-330466/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 490-330466/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 330681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-1	MW-11	Total/NA	Water	7470A	
490-101192-1 MS	MW-11	Total/NA	Water	7470A	
490-101192-1 MSD	MW-11	Total/NA	Water	7470A	
490-101192-2	MW-12	Total/NA	Water	7470A	
490-101192-3	MW-13	Total/NA	Water	7470A	
490-101192-4	MW-14	Total/NA	Water	7470A	
490-101192-5	DUPE	Total/NA	Water	7470A	
490-101192-6	Field Blank	Total/NA	Water	7470A	
LCS 490-330681/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-330681/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
MB 490-330681/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Analysis Batch: 330724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-1	MW-11	Total/NA	Water	7470A	330681
490-101192-1 MS	MW-11	Total/NA	Water	7470A	330681
490-101192-1 MSD	MW-11	Total/NA	Water	7470A	330681
490-101192-2	MW-12	Total/NA	Water	7470A	330681
490-101192-3	MW-13	Total/NA	Water	7470A	330681
490-101192-4	MW-14	Total/NA	Water	7470A	330681
490-101192-5	DUPE	Total/NA	Water	7470A	330681
490-101192-6	Field Blank	Total/NA	Water	7470A	330681
LCS 490-330681/2-A	Lab Control Sample	Total/NA	Water	7470A	330681
LCSD 490-330681/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	330681
MB 490-330681/1-A	Method Blank	Total/NA	Water	7470A	330681

Prep Batch: 330753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-98290-C-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
490-98290-D-2-D MS	Matrix Spike	Total/NA	Water	3010A	
490-101192-5	DUPE	Total/NA	Water	3010A	
490-101192-6	Field Blank	Total/NA	Water	3010A	
LCS 490-330753/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 490-330753/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 331103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-A-2-B MS	Matrix Spike	Total/NA	Water	6020A	330466
490-101188-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	330466
490-101192-1	MW-11	Total/NA	Water	6020A	330466
490-101192-2	MW-12	Total/NA	Water	6020A	330466
490-101192-3	MW-13	Total/NA	Water	6020A	330466
490-101192-4	MW-14	Total/NA	Water	6020A	330466
LCS 490-330466/2-A	Lab Control Sample	Total/NA	Water	6020A	330466
MB 490-330466/1-A	Method Blank	Total/NA	Water	6020A	330466

Analysis Batch: 331476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101188-A-2-B MS	Matrix Spike	Total/NA	Water	6020A	330466
490-101188-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	330466
490-101192-2	MW-12	Total/NA	Water	6020A	330466
490-101192-3	MW-13	Total/NA	Water	6020A	330466

Analysis Batch: 331937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-98290-C-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	330753
490-98290-D-2-D MS	Matrix Spike	Total/NA	Water	6020A	330753
490-101192-6	Field Blank	Total/NA	Water	6020A	330753
LCS 490-330753/2-A	Lab Control Sample	Total/NA	Water	6020A	330753
MB 490-330753/1-A	Method Blank	Total/NA	Water	6020A	330753

Analysis Batch: 332370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-5	DUPE	Total/NA	Water	6020A	330753
490-101192-6	Field Blank	Total/NA	Water	6020A	330753

Analysis Batch: 332612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-1	MW-11	Total/NA	Water	6020A	330466
490-101192-2	MW-12	Total/NA	Water	6020A	330466
490-101192-3	MW-13	Total/NA	Water	6020A	330466
490-101192-4	MW-14	Total/NA	Water	6020A	330466
LCS 490-330466/2-A	Lab Control Sample	Total/NA	Water	6020A	330466
MB 490-330466/1-A	Method Blank	Total/NA	Water	6020A	330466

Analysis Batch: 333400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-1	MW-11	Total/NA	Water	6020A	330466
490-101192-4	MW-14	Total/NA	Water	6020A	330466
490-101192-5	DUPE	Total/NA	Water	6020A	330753
490-101192-6	Field Blank	Total/NA	Water	6020A	330753

General Chemistry

Analysis Batch: 328125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-2	MW-12	Total/NA	Water	SM 2540C	
490-101192-3	MW-13	Total/NA	Water	SM 2540C	
490-101192-3 DU	MW-13	Total/NA	Water	SM 2540C	
490-101192-4	MW-14	Total/NA	Water	SM 2540C	
490-101192-5	DUPE	Total/NA	Water	SM 2540C	
490-101192-6	Field Blank	Total/NA	Water	SM 2540C	
LCS 490-328125/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 490-328125/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 330905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101172-B-2 DU	Duplicate	Total/NA	Water	SM 2540C	
490-101192-1	MW-11	Total/NA	Water	SM 2540C	
490-101251-G-1 MS	Matrix Spike	Total/NA	Water	SM 2540C	
490-101251-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 2540C	
LCS 490-330905/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-330905/25	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 490-330905/1	Method Blank	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 245638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-1	MW-11	Total/NA	Water	PrecSep-21	
490-101192-2	MW-12	Total/NA	Water	PrecSep-21	
490-101192-3	MW-13	Total/NA	Water	PrecSep-21	
490-101192-4	MW-14	Total/NA	Water	PrecSep-21	
490-101192-5	DUPE	Total/NA	Water	PrecSep-21	
LCS 160-245638/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-245638/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-245638/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 245644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-1	MW-11	Total/NA	Water	PrecSep_0	
490-101192-2	MW-12	Total/NA	Water	PrecSep_0	
490-101192-3	MW-13	Total/NA	Water	PrecSep_0	
490-101192-4	MW-14	Total/NA	Water	PrecSep_0	
490-101192-5	DUPE	Total/NA	Water	PrecSep_0	
LCS 160-245644/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-245644/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-245644/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 248484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-6	Field Blank	Total/NA	Water	PrecSep-21	
LCS 160-248484/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-248484/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-248484/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 248486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-101192-6	Field Blank	Total/NA	Water	PrecSep_0	
LCS 160-248486/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-248486/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-248486/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: MW-11

Date Collected: 04/01/16 10:45
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-1

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	10 mL		332637	04/19/16 01:43	LDC	TAL NSH
Total/NA	Analysis	9056A		100	10 mL		332637	04/19/16 02:02	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	331103	04/12/16 21:04	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	332612	04/12/16 21:04	CME	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		10	50 mL	50 mL	333400	04/20/16 19:24	KKK	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330681	04/11/16 16:34	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	330724	04/11/16 23:03	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	330905	04/12/16 19:40	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.84 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.84 mL		249606	05/05/16 07:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.84 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.84 mL		248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			252287	05/22/16 20:51	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 04/01/16 15:30
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-2

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	10 mL		332637	04/19/16 02:21	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	331476	04/13/16 19:57	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	331103	04/12/16 21:10	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	332612	04/12/16 21:10	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330681	04/11/16 16:34	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	330724	04/11/16 23:14	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328125	04/08/16 18:45	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.56 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.56 mL		249606	05/05/16 07:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.56 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.56 mL		248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			252287	05/22/16 20:51	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: MW-13

Date Collected: 04/01/16 12:40
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-3

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	10 mL		332637	04/19/16 02:39	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	331476	04/13/16 20:02	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	331103	04/12/16 21:15	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	332612	04/12/16 21:15	CME	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330681	04/11/16 16:34	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	330724	04/11/16 23:17	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328125	04/08/16 18:45	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.51 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.51 mL		249606	05/05/16 07:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.51 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.51 mL		248592	04/29/16 11:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			252287	05/22/16 20:51	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 04/01/16 14:10
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-4

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	10 mL		332637	04/19/16 02:58	LDC	TAL NSH
Total/NA	Analysis	9056A		10	10 mL		334032	04/23/16 12:15	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	331103	04/12/16 21:21	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	332612	04/12/16 21:21	CME	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330466	04/11/16 08:53	KMS	TAL NSH
Total/NA	Analysis	6020A		10	50 mL	50 mL	333400	04/20/16 19:29	KKK	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330681	04/11/16 16:34	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	330724	04/11/16 23:19	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328125	04/08/16 18:45	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.78 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.78 mL		249608	05/05/16 07:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.78 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.78 mL		248592	04/29/16 11:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			252287	05/22/16 20:51	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Client Sample ID: DUPE

Date Collected: 04/01/16 12:55
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-5

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		332637	04/19/16 03:16	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330753	04/12/16 08:59	KMS	TAL NSH
Total/NA	Analysis	6020A		10	50 mL	50 mL	332370	04/16/16 23:33	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330753	04/12/16 08:59	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	333400	04/20/16 19:12	KKK	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330681	04/11/16 16:34	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	330724	04/11/16 23:21	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328125	04/08/16 18:45	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.30 mL	1.0 g	245638	04/13/16 11:37	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.30 mL		249608	05/05/16 07:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.30 mL	1.0 g	245644	04/13/16 12:28	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.30 mL		248592	04/29/16 11:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			252287	05/22/16 20:51	RTM	TAL SL

Client Sample ID: Field Blank

Date Collected: 04/01/16 18:25
Date Received: 04/07/16 09:40

Lab Sample ID: 490-101192-6

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	10 mL		332637	04/19/16 03:35	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330753	04/12/16 08:59	KMS	TAL NSH
Total/NA	Analysis	6020A		10	50 mL	50 mL	331937	04/14/16 15:37	BLG	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330753	04/12/16 08:59	KMS	TAL NSH
Total/NA	Analysis	6020A		10	50 mL	50 mL	332370	04/16/16 23:39	KKK	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	330753	04/12/16 08:59	KMS	TAL NSH
Total/NA	Analysis	6020A		1	50 mL	50 mL	333400	04/20/16 19:18	KKK	TAL NSH
Total/NA	Prep	7470A			30.0 mL	30.0 mL	330681	04/11/16 16:34	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	330724	04/11/16 23:24	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328125	04/08/16 18:45	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			500.51 mL	1.0 g	248484	04/28/16 15:26	JAS	TAL SL
Total/NA	Analysis	903.0		1	500.51 mL		252214	05/20/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			500.51 mL	1.0 g	248486	04/28/16 15:33	JAS	TAL SL
Total/NA	Analysis	904.0		1	500.51 mL		250074	05/09/16 13:05	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			252287	05/22/16 20:51	RTM	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: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16 *
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16 *
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16 *
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-101192 Chain of Custody

Cooler Received/Opened On 4-7-16 09:45

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 # 1 of 1

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

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) EW

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) EW

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

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
101192

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) _____

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
101192

COOLER RECEIPT FORM

Cooler Received/Opened On 4-7-16 09:45

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 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) _____

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

Loc: 490
101192

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) TM

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) BM

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) BM

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) BM

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

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

5/23/2016

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Loc: 490
101192
#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) JDJ

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) EMA

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) EMA

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) EMA

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

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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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

5/23/2016

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**		___1___ of ___1___ COCs
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		Sampler: Greg Dick
(270) 844-6000 Phone	TAT if different from Below: Standard		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	☑ 2 weeks		Walk-in Client:
Project Name: Green Ash Pond CCR Groundwater-Round 1	☐ 1 week		Lab Sampling:
Site: Sebree Station, Green Ash Pond	☐ 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)	9040C, 9066_ORGFM_28D	6010B, 7470A	2540C_Calcd-TDS	Ra226 & 228 Combined	Sample Specific Notes:
MW-11	4/1/16	1045	G	Water	5	N	N	x	x	x	x	
MW-12	4/1/16	1530	G	Water	5	N	N	x	x	x	x	
MW-13	4/1/16	1240	G	Water	5	N	N	x	x	x	x	
MW-14	4/1/16	1410	G	Water	5	N	N	x	x	x	x	
DUPE	4/1/16	1255	G	Water	5	N	N	x	x	x	x	

Loc: 490
101192

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

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:	Date/Time: 4-7-16 940

1.2, 2.8, 1.9, 2.9, 0.1

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 #: 490-101192-1
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: Green Ash Pond CCR - GW - Round 1	Project #: 49010431			
Site:	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-11 (490-101192-1)	4/1/16	10:45 Central		Water			X	X	X	2	
MW-12 (490-101192-2)	4/1/16	15:30 Central		Water			X	X	X	2	
MW-13 (490-101192-3)	4/1/16	12:40 Central		Water			X	X	X	2	
MW-14 (490-101192-4)	4/1/16	14:10 Central		Water			X	X	X	2	
DUPE (490-101192-5)	4/1/16	12:55 Central		Water			X	X	X	2	
Field Blank (490-101192-6)	4/1/16	18:25 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)

Special Instructions/QC Requirements:

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

5/23/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-101192-1

Login Number: 101192

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: 490-101192-1

Login Number: 101192
List Number: 2
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 04/12/16 01:26 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: Green Ash Pond CCR - GW - Round 1

TestAmerica Job ID: 490-101192-1

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-101192-1	MW-11	48.1
490-101192-2	MW-12	68.1
490-101192-3	MW-13	77.2
490-101192-4	MW-14	81.5
490-101192-5	DUPE	80.1
490-101192-6	Field Blank	90.3
LCS 160-245638/2-A	Lab Control Sample	78.3
LCS 160-248484/2-A	Lab Control Sample	86.0
LCSD 160-245638/3-A	Lab Control Sample Dup	82.9
LCSD 160-248484/3-A	Lab Control Sample Dup	87.7
MB 160-245638/1-A	Method Blank	78.1
MB 160-248484/1-A	Method Blank	92.3

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-101192-1	MW-11	76.6	92.0
490-101192-2	MW-12	68.1	94.2
490-101192-3	MW-13	77.2	90.1
490-101192-4	MW-14	81.5	90.1
490-101192-5	DUPE	80.1	88.6
490-101192-6	Field Blank	90.3	94.2
LCS 160-245644/2-A	Lab Control Sample	78.3	87.5
LCS 160-248486/2-A	Lab Control Sample	86.0	96.1
LCSD 160-245644/3-A	Lab Control Sample Dup	82.9	91.2
LCSD 160-248486/3-A	Lab Control Sample Dup	87.7	96.4
MB 160-245644/1-A	Method Blank	78.1	84.9
MB 160-248486/1-A	Method Blank	92.3	95.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-105032-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
7/11/2016 10:59:44 AM

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

LINKS

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Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-105032-1	MW-11	Ground Water	06/02/16 12:20	06/04/16 17:33
490-105032-2	MW-12	Ground Water	06/02/16 15:10	06/04/16 17:33
490-105032-3	MW-13	Ground Water	06/02/16 14:05	06/04/16 17:33
490-105032-4	MW-14	Ground Water	06/02/16 13:25	06/04/16 17:33
490-105032-5	DUPE	Ground Water	06/02/16 12:45	06/04/16 17:33
490-105032-6	FIELD BLANK	Ground Water	06/02/16 16:30	06/04/16 09:40

Job ID: 490-105032-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-105032-1

Comments
No additional comments.

Receipt
The samples were received on 6/4/2016 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.8º C, 1.4º C and 1.8º C.

RAD
Method(s) PrecSep_0: Radium-228 Prep Batch 160-256371:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-11 (490-105032-1), MW-12 (490-105032-2), MW-13 (490-105032-3), MW-14 (490-105032-4), DUPE (490-105032-5) and FIELD BLANK (490-105032-6). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-256367:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-11 (490-105032-1), MW-12 (490-105032-2), MW-13 (490-105032-3), MW-14 (490-105032-4), DUPE (490-105032-5) and FIELD BLANK (490-105032-6). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

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

Narrative

Job Narrative
490-105032-2

Comments
No additional comments.

Receipt
The samples were received on 6/4/2016 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.8º C, 1.4º C and 1.8º C.

HPLC/IC
Method(s) 9056, 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-347329 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.

Method(s) 9056A: The method blank for analytical batch 490-347599 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) 9056, 9056A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 490-347599.

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

Job ID: 490-105032-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

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.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-11

Date Collected: 06/02/16 12:20
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1740	B	600	40.0	mg/L			06/15/16 02:14	200
Fluoride	0.331	J	5.00	0.0500	mg/L			06/15/16 01:57	5
Sulfate	1400		1000	6.00	mg/L			06/15/16 02:14	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0685		0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 17:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000950	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:38	1
Arsenic	0.00531		0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:38	1
Barium	0.0794	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:38	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:38	1
Boron	0.645	J	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:38	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:38	1
Calcium	378	B	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:38	1
Chromium	0.000804	J	0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:38	1
Cobalt	0.00267	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:38	1
Lead	0.0000310	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:38	1
Molybdenum	0.00297	J	0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:38	1
Selenium	0.000750	J	0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:38	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 00:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 16:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.09		0.100	0.100	SU			06/08/16 10:01	1
Temperature	22.0		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	4610		100	70.0	mg/L			06/07/16 17:17	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	0.642		0.116	0.129	1.00	0.0684	pCi/L	06/14/16 17:17	07/06/16 07:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:27*	*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	0.332	U	0.259	0.261	1.00	0.411	pCi/L	06/14/16 18:02	06/29/16 17:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:21*	*1*

Client Sample ID: MW-11

Date Collected: 06/02/16 12:20
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-1

Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*89.0*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:21*	*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	**0.975**		0.284	0.291	5.00	0.411	pCi/L		07/08/16 20:20	1

Client Sample ID: MW-12

Date Collected: 06/02/16 15:10
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32.4**	**B**	15.0	1.00	mg/L			06/15/16 02:31	5
Fluoride	**0.561**	**J**	1.00	0.0100	mg/L			06/13/16 19:08	1
Sulfate	**146**		25.0	0.150	mg/L			06/15/16 02:31	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0194**	**J**	0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 17:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000111**	**J B**	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:43	1
Arsenic	**0.00566**		0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:43	1
Barium	**0.0818**	**J**	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:43	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:43	1
Boron	**0.186**	**J**	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:43	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:43	1
Calcium	**95.1**	**B**	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:43	1
Chromium	**0.000569**	**J**	0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:43	1
Cobalt	**0.000176**	**J**	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:43	1
Lead	**0.0000970**	**J B**	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:43	1
Molybdenum	**0.0234**		0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:43	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:43	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 00:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 16:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.46**		0.100	0.100	SU			06/08/16 10:01	1
Temperature	**22.0**		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	**745**		10.0	7.00	mg/L			06/07/16 17:17	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	**0.252**		0.0872	0.0901	1.00	0.103	pCi/L	06/14/16 17:17	07/06/16 07:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:28*	*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	0.0867	U	0.212	0.212	1.00	0.365	pCi/L	06/14/16 18:02	06/29/16 17:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:21*	*1*

Client Sample ID: MW-12
Date Collected: 06/02/16 15:10
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-2
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.7		40 - 110	06/14/16 18:02	06/29/16 17:21	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	0.339	U	0.229	0.230	5.00	0.365	pCi/L		07/08/16 20:20	1

Client Sample ID: MW-13

Date Collected: 06/02/16 14:05
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.2	B	6.00	0.400	mg/L			06/15/16 03:05	2
Fluoride	0.244	J	1.00	0.0100	mg/L			06/13/16 19:25	1
Sulfate	118		50.0	0.300	mg/L			06/15/16 03:22	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0104	J	0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 18:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000560	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:48	1
Arsenic	0.00201	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:48	1
Barium	0.0805	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:48	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:48	1
Boron	0.0599	J	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:48	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:48	1
Calcium	95.1	B	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:48	1
Chromium	0.000554	J	0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:48	1
Cobalt	0.00221	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:48	1
Lead	0.0000760	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:48	1
Molybdenum	0.00391	J	0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:48	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:48	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 00:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.83		0.100	0.100	SU			06/08/16 10:07	1
Temperature	22.1		0.100	0.100	Degrees C			06/08/16 10:07	1
Total Dissolved Solids	721		10.0	7.00	mg/L			06/07/16 17:17	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	0.0839	U	0.0691	0.0695	1.00	0.108	pCi/L	06/14/16 17:17	07/06/16 07:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:28*	*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	0.199	U	0.200	0.201	1.00	0.326	pCi/L	06/14/16 18:02	06/29/16 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:22*	*1*

Client Sample ID: MW-13

Date Collected: 06/02/16 14:05
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-3

Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*91.2*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:22*	*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	0.283	U	0.212	0.213	5.00	0.326	pCi/L		07/08/16 20:20	1

Client Sample ID: MW-14

Date Collected: 06/02/16 13:25
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	184	B	60.0	4.00	mg/L			06/15/16 03:39	20
Fluoride	0.274	J	1.00	0.0100	mg/L			06/13/16 19:42	1
Sulfate	219		100	0.600	mg/L			06/15/16 03:39	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0488	J	0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 18:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000280	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:53	1
Arsenic	0.00145	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:53	1
Barium	0.0673	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:53	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:53	1
Boron	0.186	J	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:53	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:53	1
Calcium	194	B	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:53	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:53	1
Cobalt	0.000328	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:53	1
Lead	0.0000490	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:53	1
Molybdenum	0.000789	J	0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:53	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:53	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 00:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 16:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.15		0.100	0.100	SU			06/08/16 10:07	1
Temperature	22.1		0.100	0.100	Degrees C			06/08/16 10:07	1
Total Dissolved Solids	1130		10.0	7.00	mg/L			06/07/16 17:17	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	0.711		0.124	0.139	1.00	0.0918	pCi/L	06/14/16 17:17	07/06/16 07:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:28*	*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	0.707		0.252	0.260	1.00	0.343	pCi/L	06/14/16 18:02	06/29/16 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:22*	*1*

Client Sample ID: MW-14

Date Collected: 06/02/16 13:25
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-4

Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	06/14/16 18:02	06/29/16 17:22	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	1.42		0.281	0.295	5.00	0.343	pCi/L		07/08/16 20:20	1

Client Sample ID: DUPE

Date Collected: 06/02/16 12:45
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1740	B	300	20.0	mg/L			06/15/16 04:13	100
Fluoride	0.424	J	5.00	0.0500	mg/L			06/15/16 03:56	5
Sulfate	1430		500	3.00	mg/L			06/15/16 04:13	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0614		0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 18:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000820	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:58	1
Arsenic	0.00447	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:58	1
Barium	0.0710	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:58	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:58	1
Boron	0.567	J	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:58	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:58	1
Calcium	362	B	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:58	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:58	1
Cobalt	0.00270	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:58	1
Lead	0.0000260	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:58	1
Molybdenum	0.00311	J	0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:58	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:58	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 00:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 16:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.15		0.100	0.100	SU			06/08/16 10:07	1
Temperature	22.1		0.100	0.100	Degrees C			06/08/16 10:07	1
Total Dissolved Solids	4800		100	70.0	mg/L			06/07/16 17:17	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	0.587		0.112	0.124	1.00	0.0865	pCi/L	06/14/16 17:17	07/06/16 07:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:28*	*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	0.642		0.255	0.262	1.00	0.358	pCi/L	06/14/16 18:02	06/29/16 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:22*	*1*

Client Sample ID: DUPE

Date Collected: 06/02/16 12:45
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-5

Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.5		40 - 110	06/14/16 18:02	06/29/16 17:22	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	1.23		0.279	0.290	5.00	0.358	pCi/L		07/08/16 20:20	1

Client Sample ID: FIELD BLANK

Date Collected: 06/02/16 16:30
Date Received: 06/04/16 09:40

Lab Sample ID: 490-105032-6

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.454**	**J B**	3.00	0.200	mg/L			06/13/16 20:16	1
Fluoride	ND		1.00	0.0100	mg/L			06/13/16 20:16	1
Sulfate	**0.369**	**J**	5.00	0.0300	mg/L			06/13/16 20:16	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		06/08/16 14:09	06/13/16 18:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 01:03	1
Arsenic	ND		0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 01:03	1
Barium	**0.000219**	**J**	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 01:03	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 01:03	1
Boron	**0.00716**	**J**	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 01:03	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 01:03	1
Calcium	**0.0268**	**J B**	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 01:03	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 01:03	1
Cobalt	ND		0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 01:03	1
Lead	ND		0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 01:03	1
Molybdenum	ND		0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 01:03	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 01:03	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 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		06/06/16 07:18	06/06/16 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.56**		0.100	0.100	SU			06/08/16 10:07	1
Temperature	**22.1**		0.100	0.100	Degrees C			06/08/16 10:07	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			06/07/16 17:17	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	0.0605	U	0.0591	0.0593	1.00	0.0941	pCi/L	06/14/16 17:17	07/06/16 07:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:28*	*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	0.0552	U	0.168	0.168	1.00	0.295	pCi/L	06/14/16 18:02	06/29/16 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:22*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 06/02/16 16:30
Date Received: 06/04/16 09:40

Lab Sample ID: 490-105032-6

Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.2		40 - 110	06/14/16 18:02	06/29/16 17:22	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	0.116	U	0.178	0.178	5.00	0.295	pCi/L		07/08/16 20:20	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-347329/6
Matrix: Water
Analysis Batch: 347329

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2921	J	3.00	0.200	mg/L			06/13/16 14:55	1
Fluoride	ND		1.00	0.0100	mg/L			06/13/16 14:55	1
Sulfate	ND		5.00	0.0300	mg/L			06/13/16 14:55	1

Lab Sample ID: LCS 490-347329/7
Matrix: Water
Analysis Batch: 347329

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	10.04		mg/L		100	80 - 120
Fluoride	1.00	0.9776	J	mg/L		98	80 - 120
Sulfate	10.0	9.651		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-347329/8
Matrix: Water
Analysis Batch: 347329

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	9.793		mg/L		98	80 - 120	3	20
Fluoride	1.00	0.9617	J	mg/L		96	80 - 120	2	20
Sulfate	10.0	9.454		mg/L		95	80 - 120	2	20

Lab Sample ID: MB 490-347599/3
Matrix: Water
Analysis Batch: 347599

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3978	J	3.00	0.200	mg/L			06/15/16 01:06	1
Fluoride	ND		1.00	0.0100	mg/L			06/15/16 01:06	1
Sulfate	ND		5.00	0.0300	mg/L			06/15/16 01:06	1

Lab Sample ID: LCS 490-347599/4
Matrix: Water
Analysis Batch: 347599

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	10.12		mg/L		101	80 - 120
Fluoride	1.00	1.024		mg/L		102	80 - 120
Sulfate	10.0	9.867		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-347599/5
Matrix: Water
Analysis Batch: 347599

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	10.38		mg/L		104	80 - 120	3	20
Fluoride	1.00	1.032		mg/L		103	80 - 120	1	20
Sulfate	10.0	9.950		mg/L		100	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-178652/1-A
Matrix: Water
Analysis Batch: 179073

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 178652

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 16:51	1

Lab Sample ID: LCS 180-178652/2-A
Matrix: Water
Analysis Batch: 179073

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 178652

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9828		mg/L		98	80 - 120

Lab Sample ID: LCSD 180-178652/3-A
Matrix: Water
Analysis Batch: 179073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 178652

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9964		mg/L		100	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-178655/1-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001330	J	0.00200	0.0000187	mg/L		06/08/16 14:10	06/13/16 23:27	1
Arsenic	ND		0.00500	0.000291	mg/L		06/08/16 14:10	06/13/16 23:27	1
Barium	ND		0.200	0.0000980	mg/L		06/08/16 14:10	06/13/16 23:27	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/13/16 23:27	1
Boron	ND		1.00	0.000277	mg/L		06/08/16 14:10	06/13/16 23:27	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/13/16 23:27	1
Calcium	0.005215	J	1.00	0.00284	mg/L		06/08/16 14:10	06/13/16 23:27	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/13/16 23:27	1
Cobalt	ND		0.00500	0.0000263	mg/L		06/08/16 14:10	06/13/16 23:27	1
Lead	0.00003200	J	0.00500	0.0000192	mg/L		06/08/16 14:10	06/13/16 23:27	1
Molybdenum	ND		0.0100	0.000223	mg/L		06/08/16 14:10	06/13/16 23:27	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/13/16 23:27	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/13/16 23:27	1

Lab Sample ID: LCS 180-178655/2-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5300		mg/L		106	80 - 120
Arsenic	0.0400	0.04050		mg/L		101	80 - 120
Barium	2.00	2.030		mg/L		102	80 - 120
Beryllium	0.0500	0.04600		mg/L		92	80 - 120
Boron	1.00	0.8370	J	mg/L		84	80 - 120
Cadmium	0.0500	0.05382		mg/L		108	80 - 120
Calcium	50.0	51.71		mg/L		103	80 - 120

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

Lab Sample ID: LCS 180-178655/2-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.1952		mg/L		98	80 - 120
Cobalt	0.500	0.4673		mg/L		93	80 - 120
Lead	0.0200	0.02163		mg/L		108	80 - 120
Molybdenum	1.00	1.192		mg/L		119	80 - 120
Selenium	0.0100	0.009468	J	mg/L		95	80 - 120
Thallium	0.0500	0.05299		mg/L		106	80 - 120

Lab Sample ID: LCSD 180-178655/3-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5560		mg/L		111	80 - 120	5	20
Arsenic	0.0400	0.04015		mg/L		100	80 - 120	1	20
Barium	2.00	2.044		mg/L		102	80 - 120	1	20
Beryllium	0.0500	0.04591		mg/L		92	80 - 120	0	20
Boron	1.00	0.8132	J	mg/L		81	80 - 120	3	20
Cadmium	0.0500	0.05253		mg/L		105	80 - 120	2	20
Calcium	50.0	54.57		mg/L		109	80 - 120	5	20
Chromium	0.200	0.1945		mg/L		97	80 - 120	0	20
Cobalt	0.500	0.4753		mg/L		95	80 - 120	2	20
Lead	0.0200	0.02217		mg/L		111	80 - 120	2	20
Molybdenum	1.00	1.194		mg/L		119	80 - 120	0	20
Selenium	0.0100	0.008636	J	mg/L		86	80 - 120	9	20
Thallium	0.0500	0.05425		mg/L		109	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-345448/1-A
Matrix: Water
Analysis Batch: 345693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 345448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 15:50	1

Lab Sample ID: LCS 490-345448/2-A
Matrix: Water
Analysis Batch: 345693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 345448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9194		ug/L		92	80 - 120

Lab Sample ID: 490-104973-E-1-B MS
Matrix: Water
Analysis Batch: 345693

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 345448

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.9111		ug/L		91	75 - 125

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

Lab Sample ID: 490-104973-E-1-C MSD
Matrix: Water
Analysis Batch: 345693

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 345448

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8938		ug/L		89	75 - 125	2	20

Method: 9040C - pH

Lab Sample ID: LCS 490-346130/1
Matrix: Water
Analysis Batch: 346130

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: 490-104949-A-1 DU
Matrix: Water
Analysis Batch: 346130

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.57		7.570		SU		0	20
Temperature	22.0		22.00		Degrees C		0	20

Lab Sample ID: LCS 490-346132/1
Matrix: Water
Analysis Batch: 346132

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: 490-105032-3 DU
Matrix: Ground Water
Analysis Batch: 346132

Client Sample ID: MW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.83		6.840		SU		0.1	20
Temperature	22.1		22.10		Degrees C		0	20

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

Lab Sample ID: MB 490-345158/1
Matrix: Water
Analysis Batch: 345158

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			06/07/16 17:17	1

Lab Sample ID: LCS 490-345158/2
Matrix: Water
Analysis Batch: 345158

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	102.0		mg/L		102	90 - 110

Lab Sample ID: LCSD 490-345158/3
Matrix: Water
Analysis Batch: 345158

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	5	20

Lab Sample ID: 490-104907-B-1 DU
Matrix: Water
Analysis Batch: 345158

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	1980			1998		mg/L				1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-256367/1-A
Matrix: Water
Analysis Batch: 259384

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256367

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08190		0.0568	0.0573	1.00	0.0819	pCi/L	06/14/16 17:17	07/06/16 07:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*06/14/16 17:17*	*07/06/16 07:26*	*1*

Lab Sample ID: LCS 160-256367/2-A
Matrix: Water
Analysis Batch: 259384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256367

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.56		1.32	1.00	0.0899	pCi/L	121	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.5*		*40 - 110*

Lab Sample ID: LCSD 160-256367/3-A
Matrix: Water
Analysis Batch: 259384

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256367

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	13.28		1.30	1.00	0.0953	pCi/L	119	68 - 137	0.11	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*81.8*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-256371/1-A
Matrix: Water
Analysis Batch: 258541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256371

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.07614	U	0.208	0.208	1.00	0.361	pCi/L	06/14/16 18:02	06/29/16 17:19	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:19*	*1*
Y Carrier	*86.4*		*40 - 110*	*06/14/16 18:02*	*06/29/16 17:19*	*1*

Lab Sample ID: LCS 160-256371/2-A
Matrix: Water
Analysis Batch: 258541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256371

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.9	18.22		1.89	1.00	0.325	pCi/L	122	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.5*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

Lab Sample ID: LCSD 160-256371/3-A
Matrix: Water
Analysis Batch: 258541

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256371

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.9	17.76		1.87	1.00	0.447	pCi/L	119	56 - 140	0.12	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*81.8*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

HPLC/IC

Analysis Batch: 347329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-2	MW-12	Total/NA	Ground Water	9056A	
490-105032-3	MW-13	Total/NA	Ground Water	9056A	
490-105032-4	MW-14	Total/NA	Ground Water	9056A	
490-105032-6	FIELD BLANK	Total/NA	Ground Water	9056A	
LCS 490-347329/7	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-347329/8	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-347329/6	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 347599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total/NA	Ground Water	9056A	
490-105032-1	MW-11	Total/NA	Ground Water	9056A	
490-105032-2	MW-12	Total/NA	Ground Water	9056A	
490-105032-3	MW-13	Total/NA	Ground Water	9056A	
490-105032-3	MW-13	Total/NA	Ground Water	9056A	
490-105032-4	MW-14	Total/NA	Ground Water	9056A	
490-105032-5	DUPE	Total/NA	Ground Water	9056A	
490-105032-5	DUPE	Total/NA	Ground Water	9056A	
LCS 490-347599/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-347599/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-347599/3	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 178652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total Recoverable	Ground Water	3005A	
490-105032-2	MW-12	Total Recoverable	Ground Water	3005A	
490-105032-3	MW-13	Total Recoverable	Ground Water	3005A	
490-105032-4	MW-14	Total Recoverable	Ground Water	3005A	
490-105032-5	DUPE	Total Recoverable	Ground Water	3005A	
490-105032-6	FIELD BLANK	Total Recoverable	Ground Water	3005A	
LCS 180-178652/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-178652/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 180-178652/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 178655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total Recoverable	Ground Water	3005A	
490-105032-2	MW-12	Total Recoverable	Ground Water	3005A	
490-105032-3	MW-13	Total Recoverable	Ground Water	3005A	
490-105032-4	MW-14	Total Recoverable	Ground Water	3005A	
490-105032-5	DUPE	Total Recoverable	Ground Water	3005A	
490-105032-6	FIELD BLANK	Total Recoverable	Ground Water	3005A	
LCS 180-178655/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-178655/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 180-178655/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 179073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total Recoverable	Ground Water	6010C	178652
490-105032-2	MW-12	Total Recoverable	Ground Water	6010C	178652
490-105032-3	MW-13	Total Recoverable	Ground Water	6010C	178652
490-105032-4	MW-14	Total Recoverable	Ground Water	6010C	178652
490-105032-5	DUPE	Total Recoverable	Ground Water	6010C	178652
490-105032-6	FIELD BLANK	Total Recoverable	Ground Water	6010C	178652
LCS 180-178652/2-A	Lab Control Sample	Total Recoverable	Water	6010C	178652
LCSD 180-178652/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	178652
MB 180-178652/1-A	Method Blank	Total Recoverable	Water	6010C	178652

Analysis Batch: 179596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total Recoverable	Ground Water	6020A	178655
490-105032-2	MW-12	Total Recoverable	Ground Water	6020A	178655
490-105032-3	MW-13	Total Recoverable	Ground Water	6020A	178655
490-105032-4	MW-14	Total Recoverable	Ground Water	6020A	178655
490-105032-5	DUPE	Total Recoverable	Ground Water	6020A	178655
490-105032-6	FIELD BLANK	Total Recoverable	Ground Water	6020A	178655
LCS 180-178655/2-A	Lab Control Sample	Total Recoverable	Water	6020A	178655
LCSD 180-178655/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	178655
MB 180-178655/1-A	Method Blank	Total Recoverable	Water	6020A	178655

Prep Batch: 345448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-104973-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
490-105032-1	MW-11	Total/NA	Ground Water	7470A	
490-105032-2	MW-12	Total/NA	Ground Water	7470A	
490-105032-3	MW-13	Total/NA	Ground Water	7470A	
490-105032-4	MW-14	Total/NA	Ground Water	7470A	
490-105032-5	DUPE	Total/NA	Ground Water	7470A	
490-105032-6	FIELD BLANK	Total/NA	Ground Water	7470A	
LCS 490-345448/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 490-345448/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 345693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	345448
490-104973-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	345448
490-105032-1	MW-11	Total/NA	Ground Water	7470A	345448
490-105032-2	MW-12	Total/NA	Ground Water	7470A	345448
490-105032-3	MW-13	Total/NA	Ground Water	7470A	345448
490-105032-4	MW-14	Total/NA	Ground Water	7470A	345448
490-105032-5	DUPE	Total/NA	Ground Water	7470A	345448
490-105032-6	FIELD BLANK	Total/NA	Ground Water	7470A	345448
LCS 490-345448/2-A	Lab Control Sample	Total/NA	Water	7470A	345448
MB 490-345448/1-A	Method Blank	Total/NA	Water	7470A	345448

General Chemistry

Analysis Batch: 345158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104907-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-105032-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-105032-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-105032-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-105032-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-105032-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-105032-6	FIELD BLANK	Total/NA	Ground Water	SM 2540C	
LCS 490-345158/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-345158/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 490-345158/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 346130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104949-A-1 DU	Duplicate	Total/NA	Water	9040C	
490-105032-1	MW-11	Total/NA	Ground Water	9040C	
490-105032-2	MW-12	Total/NA	Ground Water	9040C	
LCS 490-346130/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 346132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-3	MW-13	Total/NA	Ground Water	9040C	
490-105032-3 DU	MW-13	Total/NA	Ground Water	9040C	
490-105032-4	MW-14	Total/NA	Ground Water	9040C	
490-105032-5	DUPE	Total/NA	Ground Water	9040C	
490-105032-6	FIELD BLANK	Total/NA	Ground Water	9040C	
LCS 490-346132/1	Lab Control Sample	Total/NA	Water	9040C	

Rad

Prep Batch: 256367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total/NA	Ground Water	PrecSep-21	
490-105032-2	MW-12	Total/NA	Ground Water	PrecSep-21	
490-105032-3	MW-13	Total/NA	Ground Water	PrecSep-21	
490-105032-4	MW-14	Total/NA	Ground Water	PrecSep-21	
490-105032-5	DUPE	Total/NA	Ground Water	PrecSep-21	
490-105032-6	FIELD BLANK	Total/NA	Ground Water	PrecSep-21	
LCS 160-256367/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-256367/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-256367/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 256371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-105032-1	MW-11	Total/NA	Ground Water	PrecSep_0	
490-105032-2	MW-12	Total/NA	Ground Water	PrecSep_0	
490-105032-3	MW-13	Total/NA	Ground Water	PrecSep_0	
490-105032-4	MW-14	Total/NA	Ground Water	PrecSep_0	
490-105032-5	DUPE	Total/NA	Ground Water	PrecSep_0	
490-105032-6	FIELD BLANK	Total/NA	Ground Water	PrecSep_0	
LCS 160-256371/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 256371 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 160-256371/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-256371/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-11

Date Collected: 06/02/16 12:20
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-1

Matrix: Ground 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		5	10 mL		347599	06/15/16 01:57	NC	TAL NSH
Total/NA	Analysis	9056A		200	10 mL		347599	06/15/16 02:14	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:52	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:38	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:18	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	345158	06/07/16 17:17	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.57 mL	1.0 g	256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.57 mL		259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.57 mL	1.0 g	256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.57 mL		258541	06/29/16 17:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259792	07/08/16 20:20	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 06/02/16 15:10
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-2

Matrix: Ground 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		347329	06/13/16 19:08	JHS	TAL NSH
Total/NA	Analysis	9056A		5	10 mL		347599	06/15/16 02:31	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:57	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:43	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:20	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	345158	06/07/16 17:17	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.30 mL	1.0 g	256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.30 mL		259384	07/06/16 07:28	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.30 mL	1.0 g	256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.30 mL		258541	06/29/16 17:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259792	07/08/16 20:20	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13

Date Collected: 06/02/16 14:05
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-3

Matrix: Ground 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		347329	06/13/16 19:25	JHS	TAL NSH
Total/NA	Analysis	9056A		2	10 mL		347599	06/15/16 03:05	NC	TAL NSH
Total/NA	Analysis	9056A		10	10 mL		347599	06/15/16 03:22	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 18:02	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:48	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:23	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346132	06/08/16 10:07	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	345158	06/07/16 17:17	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.53 mL	1.0 g	256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.53 mL		259384	07/06/16 07:28	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.53 mL	1.0 g	256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.53 mL		258541	06/29/16 17:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259792	07/08/16 20:20	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 06/02/16 13:25
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-4

Matrix: Ground 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		347329	06/13/16 19:42	JHS	TAL NSH
Total/NA	Analysis	9056A		20	10 mL		347599	06/15/16 03:39	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 18:07	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:53	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:25	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346132	06/08/16 10:07	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	345158	06/07/16 17:17	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.93 mL	1.0 g	256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.93 mL		259384	07/06/16 07:28	ALS	TAL SL
Total/NA	Prep	PrecSep_0			1000.93 mL	1.0 g	256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.93 mL		258541	06/29/16 17:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259792	07/08/16 20:20	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 06/02/16 12:45
Date Received: 06/04/16 17:33

Lab Sample ID: 490-105032-5

Matrix: Ground 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		5	10 mL		347599	06/15/16 03:56	NC	TAL NSH
Total/NA	Analysis	9056A		100	10 mL		347599	06/15/16 04:13	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 18:13	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:58	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:32	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346132	06/08/16 10:07	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	345158	06/07/16 17:17	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.37 mL	1.0 g	256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.37 mL		259384	07/06/16 07:28	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.37 mL	1.0 g	256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.37 mL		258541	06/29/16 17:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259792	07/08/16 20:20	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 06/02/16 16:30
Date Received: 06/04/16 09:40

Lab Sample ID: 490-105032-6

Matrix: Ground 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		347329	06/13/16 20:16	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 18:18	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 01:03	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:34	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346132	06/08/16 10:07	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	345158	06/07/16 17:17	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.24 mL	1.0 g	256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.24 mL		259384	07/06/16 07:28	ALS	TAL SL
Total/NA	Prep	PrecSep_0			999.24 mL	1.0 g	256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.24 mL		258541	06/29/16 17:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259792	07/08/16 20:20	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: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-16 *

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-16
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	07-31-16
Louisiana	NELAP	6	04041	06-30-16 *
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-16 *
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-16
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-105032 Chain of Custody

Cooler Received/Opened On 6/4/2016 @ 0940

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

1. Tracking # 0243 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 18290455 pH Strip Lot HC564992 Chlorine Strip Lot 072815A

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: 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) 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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
105032

COOLER RECEIPT FORM

Cooler Received/Opened On 6/4/2016 @ 0940

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 0298 (last 4 digits, FedEx) Courier: _FedEx_

   IR Gun ID 17960353 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 1.4 *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 TD 6/04/16

   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) TD

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: DA 6-4-16 (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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
105032

COOLER RECEIPT FORM

Cooler Received/Opened On 6/4/2016 @ 0940

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

1. Tracking # 0195 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

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

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) PTN

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: DA6-4-16 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
105032

Chain of Custody Record

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

7/11/2016

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: 6/3/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		___1___ of ___1___ COCs
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		Sampler: Greg Dick
(270) 844-6000 Phone	TAT if different from Below _____		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	☑ 2 weeks		Walk-in Client:
Project Name: Green Ash Pond CCR Groundwater-Round 2	☐ 1 week		Lab Sampling:
Site: Sebree Station, Green Ash Pond	☐ 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	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
1	MW-11	6/2/16	1220	G	Water	5	N	N	x	x	x	x	
2	MW-12	6/2/16	1510	G	Water	5	N	N	x	x	x	x	
3	MW-13	6/2/16	1405	G	Water	5	N	N	x	x	x	x	
4	MW-14	6/2/16	1325	G	Water	5	N	N	x	x	x	x	
5	DUPE	6/2/16	1245	G	Water	5	N	N	x	x	x	x	
6	FIELD BLANK	6/2/16	1630	G	Water	5	N	N	x	x	x	x	
									4	4	1	1	

Greg Dick

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 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: Greg Dick	Company: BREC	Date/Time: 1635 6/3/2016	Received by:	Company: TAN	Date/Time: 6-4-16 0940
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp. 0.8, 1.4, 1.8

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

490-105032 Waybill

NA AGCA

15238 PIT

PA-US

TRK# 6493 8978 8409

0201

WED - 08 JUN 10:30A

PRIORITY OVERNIGHT

PT-WI-SR-001 effective 7/26/13

CF 0 Initials CJ

Uncorrected temp 19.1 °C

Thermometer ID 1

dex Express

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490-54110

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 25.0 LB MAN
CAD: 5340038/CAFE2912

BILL RECIPIENT

Part # 159470-434 Rit 12/12

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica

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: 490-45099.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-105032-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 7/7/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

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)	Ra226Ra228_GFPC	903.0/PreoSep_21 Standard Target List	904.0/PreoSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-11 (490-105032-1)	6/2/16	12:20 Central		Water			X	X	X	2	
MW-12 (490-105032-2)	6/2/16	15:10 Central		Water			X	X	X	2	
MW-13 (490-105032-3)	6/2/16	14:05 Central		Water			X	X	X	2	
MW-14 (490-105032-4)	6/2/16	13:25 Central		Water			X	X	X	2	
DUPE (490-105032-5)	6/2/16	12:45 Central		Water			X	X	X	2	
FIELD BLANK (490-105032-6)	6/2/16	16:30 Central		Water			X	X	X	2	

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:

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: 6/7/16 1645	Company: TAN	Received by:	Date/Time: 060816 0905	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:

Page 41 of 45

7/11/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-105032-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 105032
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	0.8C, 1.4C, 1.8C
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").	N/A	
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: 490-105032-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 105032
List Number: 3
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 06/08/16 11:42 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.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	13.9
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: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-105032-1	MW-11	86.6
490-105032-2	MW-12	90.0
490-105032-3	MW-13	96.0
490-105032-4	MW-14	91.2
490-105032-5	DUPE	90.0
490-105032-6	FIELD BLANK	96.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
LCS 160-256367/2-A	Lab Control Sample	91.5
LCSD 160-256367/3-A	Lab Control Sample Dup	81.8
MB 160-256367/1-A	Method Blank	86.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-105032-1	MW-11	86.6	89.0
490-105032-2	MW-12	90.0	89.7
490-105032-3	MW-13	96.0	91.2
490-105032-4	MW-14	91.2	90.1
490-105032-5	DUPE	90.0	90.5
490-105032-6	FIELD BLANK	96.9	85.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
LCS 160-256371/2-A	Lab Control Sample	91.5	87.5
LCSD 160-256371/3-A	Lab Control Sample Dup	81.8	89.0
MB 160-256371/1-A	Method Blank	86.9	86.4

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR

TestAmerica Job ID: 490-105032-1
SDG: Sebree Station, Green Ash Pond

Ba = Ba Carrier
Y = 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: 490-110019-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR GW-Round 3
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
9/20/2016 1:13:10 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-110019-1	MW-11	Ground Water	08/16/16 10:10	08/18/16 14:08
490-110019-2	MW-12	Ground Water	08/16/16 13:50	08/18/16 14:08
490-110019-3	MW-13	Ground Water	08/16/16 12:50	08/18/16 14:08
490-110019-4	MW-14	Ground Water	08/16/16 11:35	08/18/16 14:08
490-110019-5	DUPE	Ground Water	08/16/16 10:30	08/18/16 14:08
490-110019-6	FIELD BLANK	Water	08/16/16 15:45	08/18/16 09:10

Job ID: 490-110019-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-110019-1

Comments
No additional comments.

Receipt
The samples were received on 8/18/2016 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.1º C, 3.0º C and 3.2º C.

HPLC/IC
Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-11 (490-110019-1), MW-12 (490-110019-2), MW-13 (490-110019-3), MW-14 (490-110019-4), DUPE (490-110019-5), (490-110019-C-1 MS) and (490-110019-C-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank as well as the continuing calibration blanks for analytical batch 490-369473 contained chloride above the method detection limit (MDL). This target analyte concentration was less than the reporting limit (RL). The following associated sample(s) were not re-analyzed because the results were greater than 10X the value found in the method blank and the continuing calibration blanks: MW-11 (490-110019-1), MW-12 (490-110019-2), MW-13 (490-110019-3), MW-14 (490-110019-4), DUPE (490-110019-5), (CCB 490-369473/22), (CCB 490-369473/33), (CCB 490-369473/5), (MB 490-369473/6), (490-110019-C-1 MS) and (490-110019-C-1 MSD)

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-368753 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
Method(s) PrecSep-21: Radium-226 Prep Batch 160-265998 and Method(s) PrecSep_0: Radium-228 Prep Batch 160-266017: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-11 (490-110019-1), MW-12 (490-110019-2), MW-13 (490-110019-3), MW-14 (490-110019-4), DUPE (490-110019-5) and FIELD BLANK (490-110019-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

Metals
Method(s) 6020A: The closing CRI was high for boron. The following samples had boron results greater than ten times the CRI: MW-11 (490-110019-1), DUPE (490-110019-5) and (LCS 180-185647/2-A)

Method(s) 7470A: The method blank for preparation batch 490-364073 contained Mercury above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or 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
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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-11

Date Collected: 08/16/16 10:10
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1880	B	300	20.0	mg/L			09/12/16 19:38	100
Fluoride	0.550	J	1.00	0.0100	mg/L			09/09/16 08:30	1
Sulfate	1150		250	1.50	mg/L			09/12/16 18:38	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0651		0.0500	0.00959	mg/L		08/22/16 10:23	08/25/16 16:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000197	J B	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 15:49	1
Arsenic	0.00509		0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 15:49	1
Barium	0.0555	J	0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 15:49	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/29/16 11:39	1
Boron	0.736	J B ^	1.00	0.00339	mg/L		08/22/16 10:22	08/29/16 11:39	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 15:49	1
Calcium	243		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 15:49	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 15:49	1
Cobalt	0.00277	J	0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 15:49	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 15:49	1
Molybdenum	0.00224	J	0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 15:49	1
Selenium	0.000653	J	0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 15:49	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 15:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 14:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4840		100	70.0	mg/L			08/18/16 19:05	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	0.633		0.118	0.131	1.00	0.0802	pCi/L	08/22/16 15:04	09/13/16 07:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*08/22/16 15:04*	*09/13/16 07:51*	*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	0.980		0.334	0.346	1.00	0.442	pCi/L	08/22/16 17:07	09/07/16 17:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:47*	*1*
Y Carrier	*84.5*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:47*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11
Date Collected: 08/16/16 10:10
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-1
Matrix: Ground 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	1.61		0.354	0.370	5.00	0.442	pCi/L		09/15/16 16:41	1

Client Sample ID: MW-12

Date Collected: 08/16/16 13:50
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.9	B	6.00	0.400	mg/L			09/12/16 19:59	2
Fluoride	0.510	J	1.00	0.0100	mg/L			09/09/16 09:30	1
Sulfate	95.7		25.0	0.150	mg/L			09/12/16 20:19	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0173	J	0.0500	0.00959	mg/L		08/22/16 10:23	08/25/16 16:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000274	J B	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 15:55	1
Arsenic	0.00322	J	0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 15:55	1
Barium	0.0856	J	0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 15:55	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/29/16 11:41	1
Boron	0.280	J B	1.00	0.00339	mg/L		08/22/16 10:22	08/30/16 12:19	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 15:55	1
Calcium	81.0		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 15:55	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 15:55	1
Cobalt	0.000252	J	0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 15:55	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 15:55	1
Molybdenum	0.0141		0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 15:55	1
Selenium	ND		0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 15:55	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 15:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	726		10.0	7.00	mg/L			08/18/16 19:05	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	0.289		0.0975	0.101	1.00	0.109	pCi/L	08/22/16 15:04	09/13/16 07:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.2*		*40 - 110*	*08/22/16 15:04*	*09/13/16 07:51*	*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	-0.0902	U	0.271	0.271	1.00	0.504	pCi/L	08/22/16 17:07	09/07/16 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.2*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*
Y Carrier	*83.7*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-12
Date Collected: 08/16/16 13:50
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-2
Matrix: Ground 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	0.198	U	0.288	0.289	5.00	0.504	pCi/L		09/15/16 16:41	1

Client Sample ID: MW-13

Date Collected: 08/16/16 12:50
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.3**	**B**	6.00	0.400	mg/L			09/12/16 20:39	2
Fluoride	**0.270**	**J**	1.00	0.0100	mg/L			09/09/16 09:50	1
Sulfate	**106**		25.0	0.150	mg/L			09/12/16 20:59	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0123**	**J**	0.0500	0.00959	mg/L		08/22/16 10:23	08/25/16 16:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000202**	**J B**	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 15:57	1
Arsenic	**0.00125**	**J**	0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 15:57	1
Barium	**0.0818**	**J**	0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 15:57	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/29/16 11:43	1
Boron	**0.0426**	**J B**	1.00	0.00339	mg/L		08/22/16 10:22	08/30/16 12:23	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 15:57	1
Calcium	**85.1**		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 15:57	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 15:57	1
Cobalt	**0.00178**	**J**	0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 15:57	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 15:57	1
Molybdenum	**0.00349**	**J**	0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 15:57	1
Selenium	**0.000508**	**J**	0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 15:57	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 15:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**684**		10.0	7.00	mg/L			08/18/16 19:05	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	**0.125**		0.0650	0.0660	1.00	0.0825	pCi/L	08/22/16 15:04	09/13/16 07:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.6*		*40 - 110*	*08/22/16 15:04*	*09/13/16 07:52*	*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	0.159	U	0.272	0.273	1.00	0.462	pCi/L	08/22/16 17:07	09/07/16 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.6*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*
Y Carrier	*80.7*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13
Date Collected: 08/16/16 12:50
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-3
Matrix: Ground 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	0.285	U	0.280	0.281	5.00	0.462	pCi/L		09/15/16 16:41	1

Client Sample ID: MW-14

Date Collected: 08/16/16 11:35
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	185	B	30.0	2.00	mg/L			09/12/16 21:19	10
Fluoride	0.353	J	1.00	0.0100	mg/L			09/09/16 10:10	1
Sulfate	216		50.0	0.300	mg/L			09/12/16 21:19	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0477	J	0.0500	0.00959	mg/L		08/22/16 10:23	08/25/16 17:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000102	J B	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 15:59	1
Arsenic	0.000902	J	0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 15:59	1
Barium	0.0648	J	0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 15:59	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/29/16 11:45	1
Boron	0.234	J B	1.00	0.00339	mg/L		08/22/16 10:22	08/30/16 12:33	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 15:59	1
Calcium	171		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 15:59	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 15:59	1
Cobalt	0.000305	J	0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 15:59	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 15:59	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 15:59	1
Selenium	ND		0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 15:59	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 15:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 14:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1140		10.0	7.00	mg/L			08/18/16 19:05	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	0.929		0.146	0.169	1.00	0.0898	pCi/L	08/22/16 15:04	09/13/16 07:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*40 - 110*	*08/22/16 15:04*	*09/13/16 07:52*	*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	0.931		0.384	0.394	1.00	0.547	pCi/L	08/22/16 17:07	09/07/16 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*
Y Carrier	*81.5*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-14
Date Collected: 08/16/16 11:35
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-4
Matrix: Ground 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	1.86		0.411	0.428	5.00	0.547	pCi/L		09/15/16 16:41	1

Client Sample ID: DUPE

Date Collected: 08/16/16 10:30
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1830	B	300	20.0	mg/L			09/12/16 23:39	100
Fluoride	0.564	J	1.00	0.0100	mg/L			09/09/16 10:31	1
Sulfate	1130		250	1.50	mg/L			09/12/16 23:19	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0584		0.0500	0.00959	mg/L		08/22/16 10:23	08/25/16 17:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000131	J B	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 16:02	1
Arsenic	0.00414	J	0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 16:02	1
Barium	0.0460	J	0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 16:02	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/29/16 11:51	1
Boron	0.677	J B ^	1.00	0.00339	mg/L		08/22/16 10:22	08/29/16 11:51	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 16:02	1
Calcium	233		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 16:02	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 16:02	1
Cobalt	0.00191	J	0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 16:02	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 16:02	1
Molybdenum	0.00211	J	0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 16:02	1
Selenium	0.000378	J	0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 16:02	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 16:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4820		100	70.0	mg/L			08/18/16 19:05	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	0.561		0.116	0.126	1.00	0.0844	pCi/L	08/22/16 15:04	09/13/16 07:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*08/22/16 15:04*	*09/13/16 07:52*	*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	0.686		0.331	0.337	1.00	0.483	pCi/L	08/22/16 17:07	09/07/16 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*
Y Carrier	*83.7*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: DUPE
Date Collected: 08/16/16 10:30
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-5
Matrix: Ground 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	1.25		0.351	0.360	5.00	0.483	pCi/L		09/15/16 16:41	1

Client Sample ID: FIELD BLANK

Date Collected: 08/16/16 15:45
Date Received: 08/18/16 09:10

Lab Sample ID: 490-110019-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.716**	**J B**	3.00	0.200	mg/L			09/09/16 10:51	1
Fluoride	ND		1.00	0.0100	mg/L			09/09/16 10:51	1
Sulfate	**0.628**	**J**	5.00	0.0300	mg/L			09/09/16 10:51	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		08/22/16 10:23	08/25/16 17:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000780**	**J B**	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 16:04	1
Arsenic	ND		0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 16:04	1
Barium	ND		0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 16:04	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/29/16 11:53	1
Boron	**0.0200**	**J B**	1.00	0.00339	mg/L		08/22/16 10:22	08/30/16 12:36	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 16:04	1
Calcium	ND		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 16:04	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 16:04	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 16:04	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 16:04	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 16:04	1
Selenium	ND		0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 16:04	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 16:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 14:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/18/16 19:05	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	0.00709	U	0.0654	0.0654	1.00	0.121	pCi/L	08/22/16 15:04	09/13/16 07:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*40 - 110*	*08/22/16 15:04*	*09/13/16 07:52*	*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	0.104	U	0.275	0.275	1.00	0.477	pCi/L	08/22/16 17:07	09/07/16 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*
Y Carrier	*82.6*		*40 - 110*	*08/22/16 17:07*	*09/07/16 17:48*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: FIELD BLANK
Date Collected: 08/16/16 15:45
Date Received: 08/18/16 09:10

Lab Sample ID: 490-110019-6
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	0.111	U	0.283	0.283	5.00	0.477	pCi/L		09/15/16 16:41	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-368753/3
Matrix: Water
Analysis Batch: 368753

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2334	J	3.00	0.200	mg/L			09/09/16 07:30	1
Fluoride	ND		1.00	0.0100	mg/L			09/09/16 07:30	1
Sulfate	ND		5.00	0.0300	mg/L			09/09/16 07:30	1

Lab Sample ID: LCS 490-368753/4
Matrix: Water
Analysis Batch: 368753

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	9.827		mg/L		98	80 - 120
Fluoride	1.00	1.069		mg/L		107	80 - 120
Sulfate	10.0	10.02		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-368753/5
Matrix: Water
Analysis Batch: 368753

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	10.17		mg/L		102	80 - 120	3	20
Fluoride	1.00	1.043		mg/L		104	80 - 120	3	20
Sulfate	10.0	10.07		mg/L		101	80 - 120	1	20

Lab Sample ID: 490-110019-1 MS
Matrix: Ground Water
Analysis Batch: 368753

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.548	J F1	0.200	0.5718	J F1	mg/L		12	80 - 120

Lab Sample ID: 490-110019-1 MSD
Matrix: Ground Water
Analysis Batch: 368753

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.548	J F1	0.200	0.6521	J F1	mg/L		52	80 - 120	13	20

Lab Sample ID: MB 490-369473/6
Matrix: Water
Analysis Batch: 369473

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2587	J	3.00	0.200	mg/L			09/12/16 16:58	1
Fluoride	ND		1.00	0.0100	mg/L			09/12/16 16:58	1
Sulfate	ND		5.00	0.0300	mg/L			09/12/16 16:58	1

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

Lab Sample ID: LCS 490-369473/7
Matrix: Water
Analysis Batch: 369473

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	9.852		mg/L		99	80 - 120
Fluoride	1.00	1.077		mg/L		108	80 - 120
Sulfate	10.0	9.993		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-369473/8
Matrix: Water
Analysis Batch: 369473

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	9.838		mg/L		98	80 - 120	0	20
Fluoride	1.00	1.051		mg/L		105	80 - 120	2	20
Sulfate	10.0	10.05		mg/L		100	80 - 120	1	20

Lab Sample ID: 490-110019-1 MS
Matrix: Ground Water
Analysis Batch: 369473

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1970	E B	100	1642	E 4	mg/L		-326	80 - 120
Sulfate	1150		100	1019	4	mg/L		-135	80 - 120

Lab Sample ID: 490-110019-1 MSD
Matrix: Ground Water
Analysis Batch: 369473

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1970	E B	100	1687	E 4	mg/L		-281	80 - 120	3	20
Sulfate	1150		100	1035	4	mg/L		-120	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-185649/1-A
Matrix: Water
Analysis Batch: 186106

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 185649

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		08/22/16 10:23	08/25/16 15:14	1

Lab Sample ID: LCS 180-185649/2-A
Matrix: Water
Analysis Batch: 186106

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 185649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9623		mg/L		96	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 490-110000-C-6-C MS
Matrix: Water
Analysis Batch: 186106

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 185649

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.525		1.00	1.530		mg/L		101	75 - 125

Lab Sample ID: 490-110000-C-6-D MSD
Matrix: Water
Analysis Batch: 186106

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 185649

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.525		1.00	1.508		mg/L		98	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-185647/1-A
Matrix: Water
Analysis Batch: 186257

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 185647

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00002300	J	0.00200	0.0000213	mg/L		08/22/16 10:22	08/26/16 15:14	1
Arsenic	ND		0.00500	0.000118	mg/L		08/22/16 10:22	08/26/16 15:14	1
Barium	ND		0.200	0.000270	mg/L		08/22/16 10:22	08/26/16 15:14	1
Beryllium	ND		0.00200	0.000102	mg/L		08/22/16 10:22	08/26/16 15:14	1
Cadmium	ND		0.00100	0.000152	mg/L		08/22/16 10:22	08/26/16 15:14	1
Calcium	ND		1.00	0.0412	mg/L		08/22/16 10:22	08/26/16 15:14	1
Chromium	ND		0.00300	0.000339	mg/L		08/22/16 10:22	08/26/16 15:14	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/22/16 10:22	08/26/16 15:14	1
Lead	ND		0.00500	0.0000675	mg/L		08/22/16 10:22	08/26/16 15:14	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/22/16 10:22	08/26/16 15:14	1
Selenium	ND		0.0100	0.000348	mg/L		08/22/16 10:22	08/26/16 15:14	1
Thallium	ND		0.00100	0.0000360	mg/L		08/22/16 10:22	08/26/16 15:14	1

Lab Sample ID: MB 180-185647/1-A
Matrix: Water
Analysis Batch: 186348

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 185647

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.005732	J ^	1.00	0.00339	mg/L		08/22/16 10:22	08/29/16 10:59	1

Lab Sample ID: LCS 180-185647/2-A
Matrix: Water
Analysis Batch: 186257

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 185647

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4894		mg/L		98	80 - 120
Arsenic	0.0400	0.03994		mg/L		100	80 - 120
Barium	2.00	1.957		mg/L		98	80 - 120
Beryllium	0.0500	0.04535		mg/L		91	80 - 120
Cadmium	0.0500	0.05146		mg/L		103	80 - 120
Calcium	50.0	48.39		mg/L		97	80 - 120
Chromium	0.200	0.2013		mg/L		101	80 - 120
Cobalt	0.500	0.5247		mg/L		105	80 - 120

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

Lab Sample ID: LCS 180-185647/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186257 — **Prep Batch: 185647**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.0200	0.01914		mg/L		96	80 - 120
Molybdenum	1.00	1.027		mg/L		103	80 - 120
Selenium	0.0100	0.009943	J	mg/L		99	80 - 120
Thallium	0.0500	0.04931		mg/L		99	80 - 120

Lab Sample ID: LCS 180-185647/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186348 — **Prep Batch: 185647**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.019	^	mg/L		102	80 - 120

Lab Sample ID: 490-110000-C-6-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186257 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0000720	J B	0.500	0.4890		mg/L		98	75 - 125
Arsenic	0.000265	J	0.0400	0.03955		mg/L		98	75 - 125
Barium	0.0396	J	2.00	2.035		mg/L		100	75 - 125
Cadmium	ND		0.0500	0.04916		mg/L		98	75 - 125
Calcium	479		50.0	510.7	4	mg/L		64	75 - 125
Chromium	ND		0.200	0.1931		mg/L		97	75 - 125
Cobalt	ND		0.500	0.4833		mg/L		97	75 - 125
Lead	ND		0.0200	0.01946		mg/L		97	75 - 125
Molybdenum	ND		1.00	1.071		mg/L		107	75 - 125
Selenium	0.000934	J	0.0100	0.009794	J	mg/L		89	75 - 125
Thallium	ND		0.0500	0.04645		mg/L		93	75 - 125

Lab Sample ID: 490-110000-C-6-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186348 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND		0.0500	0.04708		mg/L		94	75 - 125

Lab Sample ID: 490-110000-C-6-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186480 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.343	J F1 B	1.00	1.786	F1	mg/L		144	75 - 125

Lab Sample ID: 490-110000-C-6-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186257 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0000720	J B	0.500	0.4907		mg/L		98	75 - 125	0	20

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

Lab Sample ID: 490-110000-C-6-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186257 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.000265	J	0.0400	0.03951		mg/L		98	75 - 125	0	20
Barium	0.0396	J	2.00	2.037		mg/L		100	75 - 125	0	20
Cadmium	ND		0.0500	0.04939		mg/L		99	75 - 125	0	20
Calcium	479		50.0	502.0	4	mg/L		47	75 - 125	2	20
Chromium	ND		0.200	0.1950		mg/L		98	75 - 125	1	20
Cobalt	ND		0.500	0.4923		mg/L		98	75 - 125	2	20
Lead	ND		0.0200	0.01981		mg/L		99	75 - 125	2	20
Molybdenum	ND		1.00	1.082		mg/L		108	75 - 125	1	20
Selenium	0.000934	J	0.0100	0.01061		mg/L		97	75 - 125	8	20
Thallium	ND		0.0500	0.04701		mg/L		94	75 - 125	1	20

Lab Sample ID: 490-110000-C-6-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186348 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		0.0500	0.04744		mg/L		95	75 - 125	1	20

Lab Sample ID: 490-110000-C-6-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 186480 — **Prep Batch: 185647**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.343	J F1 B	1.00	1.679	F1	mg/L		134	75 - 125	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-364073/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364459 — **Prep Batch: 364073**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.2092		0.200	0.100	ug/L		08/19/16 10:23	08/19/16 13:48	1

Lab Sample ID: 490-110000-B-6-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364459 — **Prep Batch: 364073**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.046		ug/L		105	75 - 125

Lab Sample ID: 490-110000-B-6-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364459 — **Prep Batch: 364073**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.060		ug/L		106	75 - 125	1	20

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

Lab Sample ID: 490-110000-A-6-A DU
Matrix: Water
Analysis Batch: 364459

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 364073

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	ND			ND		ug/L				NC	20

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

Lab Sample ID: MB 490-363124/1
Matrix: Water
Analysis Batch: 363124

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			08/18/16 19:05	1

Lab Sample ID: LCS 490-363124/2
Matrix: Water
Analysis Batch: 363124

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	94.00		mg/L		94	90 - 110		

Lab Sample ID: LCSD 490-363124/3
Matrix: Water
Analysis Batch: 363124

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	3	20

Lab Sample ID: 490-110000-C-6 DU
Matrix: Water
Analysis Batch: 363124

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	3670			3838		mg/L				4	20

Lab Sample ID: 490-110039-C-2 DU
Matrix: Water
Analysis Batch: 363124

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	409			409.0		mg/L				0	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-265998/1-A
Matrix: Water
Analysis Batch: 269330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265998

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08120	U	0.0594	0.0599	1.00	0.0868	pCi/L	08/22/16 15:04	09/13/16 07:51	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-265998/1-A
Matrix: Water
Analysis Batch: 269330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265998

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.2		40 - 110	08/22/16 15:04	09/13/16 07:51	1

Lab Sample ID: LCS 160-265998/2-A
Matrix: Water
Analysis Batch: 269330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265998

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	14.15		1.38	1.00	0.0789	pCi/L	127	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	85.2		40 - 110

Lab Sample ID: LCSD 160-265998/3-A
Matrix: Water
Analysis Batch: 269330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265998

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	13.25		1.30	1.00	0.0816	pCi/L	119	68 - 137	0.34	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	91.5		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-266017/1-A
Matrix: Water
Analysis Batch: 268308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 266017

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.01980	U	0.247	0.247	1.00	0.447	pCi/L	08/22/16 17:07	09/07/16 17:47	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.2		40 - 110	08/22/16 17:07	09/07/16 17:47	1
Y Carrier	90.8		40 - 110	08/22/16 17:07	09/07/16 17:47	1

Lab Sample ID: LCS 160-266017/2-A
Matrix: Water
Analysis Batch: 268308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 266017

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.6	15.30		1.69	1.00	0.441	pCi/L	105	56 - 140		

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

Lab Sample ID: LCS 160-266017/2-A
Matrix: Water
Analysis Batch: 268308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 266017

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	85.2		40 - 110
Y Carrier	86.4		40 - 110

Lab Sample ID: LCSD 160-266017/3-A
Matrix: Water
Analysis Batch: 268308

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 266017

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.6	16.45		1.79	1.00	0.419	pCi/L	113	56 - 140	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	91.5		40 - 110
Y Carrier	83.4		40 - 110

HPLC/IC

Analysis Batch: 368753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	9056A	
490-110019-2	MW-12	Total/NA	Ground Water	9056A	
490-110019-3	MW-13	Total/NA	Ground Water	9056A	
490-110019-4	MW-14	Total/NA	Ground Water	9056A	
490-110019-5	DUPE	Total/NA	Ground Water	9056A	
490-110019-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-368753/3	Method Blank	Total/NA	Water	9056A	
LCS 490-368753/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-368753/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-110019-1 MS	MW-11	Total/NA	Ground Water	9056A	
490-110019-1 MSD	MW-11	Total/NA	Ground Water	9056A	

Analysis Batch: 369473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	9056A	
490-110019-1	MW-11	Total/NA	Ground Water	9056A	
490-110019-2	MW-12	Total/NA	Ground Water	9056A	
490-110019-2	MW-12	Total/NA	Ground Water	9056A	
490-110019-3	MW-13	Total/NA	Ground Water	9056A	
490-110019-3	MW-13	Total/NA	Ground Water	9056A	
490-110019-4	MW-14	Total/NA	Ground Water	9056A	
490-110019-5	DUPE	Total/NA	Ground Water	9056A	
490-110019-5	DUPE	Total/NA	Ground Water	9056A	
MB 490-369473/6	Method Blank	Total/NA	Water	9056A	
LCS 490-369473/7	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-369473/8	Lab Control Sample Dup	Total/NA	Water	9056A	
490-110019-1 MS	MW-11	Total/NA	Ground Water	9056A	
490-110019-1 MSD	MW-11	Total/NA	Ground Water	9056A	

Metals

Prep Batch: 185647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total Recoverable	Ground Water	3005A	
490-110019-2	MW-12	Total Recoverable	Ground Water	3005A	
490-110019-3	MW-13	Total Recoverable	Ground Water	3005A	
490-110019-4	MW-14	Total Recoverable	Ground Water	3005A	
490-110019-5	DUPE	Total Recoverable	Ground Water	3005A	
490-110019-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-185647/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-185647/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-110000-C-6-A MS	Matrix Spike	Total Recoverable	Water	3005A	
490-110000-C-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 185649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total Recoverable	Ground Water	3005A	
490-110019-2	MW-12	Total Recoverable	Ground Water	3005A	
490-110019-3	MW-13	Total Recoverable	Ground Water	3005A	
490-110019-4	MW-14	Total Recoverable	Ground Water	3005A	

Metals (Continued)

Prep Batch: 185649 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-5	DUPE	Total Recoverable	Ground Water	3005A	
490-110019-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-185649/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-185649/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-110000-C-6-C MS	Matrix Spike	Total Recoverable	Water	3005A	
490-110000-C-6-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 186106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total Recoverable	Ground Water	6010C	185649
490-110019-2	MW-12	Total Recoverable	Ground Water	6010C	185649
490-110019-3	MW-13	Total Recoverable	Ground Water	6010C	185649
490-110019-4	MW-14	Total Recoverable	Ground Water	6010C	185649
490-110019-5	DUPE	Total Recoverable	Ground Water	6010C	185649
490-110019-6	FIELD BLANK	Total Recoverable	Water	6010C	185649
MB 180-185649/1-A	Method Blank	Total Recoverable	Water	6010C	185649
LCS 180-185649/2-A	Lab Control Sample	Total Recoverable	Water	6010C	185649
490-110000-C-6-C MS	Matrix Spike	Total Recoverable	Water	6010C	185649
490-110000-C-6-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	185649

Analysis Batch: 186257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total Recoverable	Ground Water	6020A	185647
490-110019-2	MW-12	Total Recoverable	Ground Water	6020A	185647
490-110019-3	MW-13	Total Recoverable	Ground Water	6020A	185647
490-110019-4	MW-14	Total Recoverable	Ground Water	6020A	185647
490-110019-5	DUPE	Total Recoverable	Ground Water	6020A	185647
490-110019-6	FIELD BLANK	Total Recoverable	Water	6020A	185647
MB 180-185647/1-A	Method Blank	Total Recoverable	Water	6020A	185647
LCS 180-185647/2-A	Lab Control Sample	Total Recoverable	Water	6020A	185647
490-110000-C-6-A MS	Matrix Spike	Total Recoverable	Water	6020A	185647
490-110000-C-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	185647

Analysis Batch: 186348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total Recoverable	Ground Water	6020A	185647
490-110019-2	MW-12	Total Recoverable	Ground Water	6020A	185647
490-110019-3	MW-13	Total Recoverable	Ground Water	6020A	185647
490-110019-4	MW-14	Total Recoverable	Ground Water	6020A	185647
490-110019-5	DUPE	Total Recoverable	Ground Water	6020A	185647
490-110019-6	FIELD BLANK	Total Recoverable	Water	6020A	185647
MB 180-185647/1-A	Method Blank	Total Recoverable	Water	6020A	185647
LCS 180-185647/2-A	Lab Control Sample	Total Recoverable	Water	6020A	185647
490-110000-C-6-A MS	Matrix Spike	Total Recoverable	Water	6020A	185647
490-110000-C-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	185647

Analysis Batch: 186480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-2	MW-12	Total Recoverable	Ground Water	6020A	185647
490-110019-3	MW-13	Total Recoverable	Ground Water	6020A	185647
490-110019-4	MW-14	Total Recoverable	Ground Water	6020A	185647

Metals (Continued)

Analysis Batch: 186480 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-6	FIELD BLANK	Total Recoverable	Water	6020A	185647
490-110000-C-6-A MS	Matrix Spike	Total Recoverable	Water	6020A	185647
490-110000-C-6-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	185647

Prep Batch: 364073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	7470A	
490-110019-2	MW-12	Total/NA	Ground Water	7470A	
490-110019-3	MW-13	Total/NA	Ground Water	7470A	
490-110019-4	MW-14	Total/NA	Ground Water	7470A	
490-110019-5	DUPE	Total/NA	Ground Water	7470A	
490-110019-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-364073/1-A	Method Blank	Total/NA	Water	7470A	
490-110000-B-6-A MS	Matrix Spike	Total/NA	Water	7470A	
490-110000-B-6-B MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
490-110000-A-6-A DU	Duplicate	Total/NA	Water	7470A	

Analysis Batch: 364459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	7470A	364073
490-110019-2	MW-12	Total/NA	Ground Water	7470A	364073
490-110019-3	MW-13	Total/NA	Ground Water	7470A	364073
490-110019-4	MW-14	Total/NA	Ground Water	7470A	364073
490-110019-5	DUPE	Total/NA	Ground Water	7470A	364073
490-110019-6	FIELD BLANK	Total/NA	Water	7470A	364073
MB 490-364073/1-A	Method Blank	Total/NA	Water	7470A	364073
490-110000-B-6-A MS	Matrix Spike	Total/NA	Water	7470A	364073
490-110000-B-6-B MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	364073
490-110000-A-6-A DU	Duplicate	Total/NA	Water	7470A	364073

General Chemistry

Analysis Batch: 363124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-110019-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-110019-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-110019-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-110019-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-110019-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-363124/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-363124/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-363124/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-110000-C-6 DU	Duplicate	Total/NA	Water	SM 2540C	
490-110039-C-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 265998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	PrecSep-21	
490-110019-2	MW-12	Total/NA	Ground Water	PrecSep-21	
490-110019-3	MW-13	Total/NA	Ground Water	PrecSep-21	
490-110019-4	MW-14	Total/NA	Ground Water	PrecSep-21	
490-110019-5	DUPE	Total/NA	Ground Water	PrecSep-21	
490-110019-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-265998/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-265998/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-265998/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 266017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110019-1	MW-11	Total/NA	Ground Water	PrecSep_0	
490-110019-2	MW-12	Total/NA	Ground Water	PrecSep_0	
490-110019-3	MW-13	Total/NA	Ground Water	PrecSep_0	
490-110019-4	MW-14	Total/NA	Ground Water	PrecSep_0	
490-110019-5	DUPE	Total/NA	Ground Water	PrecSep_0	
490-110019-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-266017/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-266017/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-266017/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-11

Date Collected: 08/16/16 10:10
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-1

Matrix: Ground 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			368753	09/09/16 08:30	JHS	TAL NSH
Total/NA	Analysis	9056A		50			369473	09/12/16 18:38	JHS	TAL NSH
Total/NA	Analysis	9056A		100			369473	09/12/16 19:38	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185649	08/22/16 10:23	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186106	08/25/16 16:46	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186257	08/26/16 15:49	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186348	08/29/16 11:39	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364073	08/19/16 10:23	LCS	TAL NSH
Total/NA	Analysis	7470A		1			364459	08/19/16 14:21	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	363124	08/18/16 19:05	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.44 mL	1.0 g	265998	08/22/16 15:04	MCJ	TAL SL
Total/NA	Analysis	903.0		1			269330	09/13/16 07:51	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.44 mL	1.0 g	266017	08/22/16 17:07	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	268308	09/07/16 17:47	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			270091	09/15/16 16:41	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 08/16/16 13:50
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-2

Matrix: Ground 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			368753	09/09/16 09:30	JHS	TAL NSH
Total/NA	Analysis	9056A		2			369473	09/12/16 19:59	JHS	TAL NSH
Total/NA	Analysis	9056A		5			369473	09/12/16 20:19	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185649	08/22/16 10:23	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186106	08/25/16 16:52	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186257	08/26/16 15:55	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186348	08/29/16 11:41	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186480	08/30/16 12:19	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364073	08/19/16 10:23	LCS	TAL NSH
Total/NA	Analysis	7470A		1			364459	08/19/16 14:23	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363124	08/18/16 19:05	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.26 mL	1.0 g	265998	08/22/16 15:04	MCJ	TAL SL
Total/NA	Analysis	903.0		1			269330	09/13/16 07:51	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.26 mL	1.0 g	266017	08/22/16 17:07	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	268308	09/07/16 17:48	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			270091	09/15/16 16:41	RTM	TAL SL

Client Sample ID: MW-13

Date Collected: 08/16/16 12:50
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-3

Matrix: Ground 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			368753	09/09/16 09:50	JHS	TAL NSH
Total/NA	Analysis	9056A		2			369473	09/12/16 20:39	JHS	TAL NSH
Total/NA	Analysis	9056A		5			369473	09/12/16 20:59	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185649	08/22/16 10:23	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186106	08/25/16 16:57	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186257	08/26/16 15:57	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186348	08/29/16 11:43	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186480	08/30/16 12:23	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364073	08/19/16 10:23	LCS	TAL NSH
Total/NA	Analysis	7470A		1			364459	08/19/16 14:25	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363124	08/18/16 19:05	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	265998	08/22/16 15:04	MCJ	TAL SL
Total/NA	Analysis	903.0		1			269330	09/13/16 07:52	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	266017	08/22/16 17:07	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	268308	09/07/16 17:48	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			270091	09/15/16 16:41	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 08/16/16 11:35
Date Received: 08/18/16 14:08

Lab Sample ID: 490-110019-4

Matrix: Ground 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			368753	09/09/16 10:10	JHS	TAL NSH
Total/NA	Analysis	9056A		10			369473	09/12/16 21:19	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185649	08/22/16 10:23	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186106	08/25/16 17:02	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186257	08/26/16 15:59	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186348	08/29/16 11:45	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186480	08/30/16 12:33	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364073	08/19/16 10:23	LCS	TAL NSH
Total/NA	Analysis	7470A		1			364459	08/19/16 14:27	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363124	08/18/16 19:05	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.19 mL	1.0 g	265998	08/22/16 15:04	MCJ	TAL SL
Total/NA	Analysis	903.0		1			269330	09/13/16 07:52	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.19 mL	1.0 g	266017	08/22/16 17:07	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	268308	09/07/16 17:48	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			270091	09/15/16 16:41	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-110019-5

Date Collected: 08/16/16 10:30

Matrix: Ground Water

Date Received: 08/18/16 14:08

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			368753	09/09/16 10:31	JHS	TAL NSH
Total/NA	Analysis	9056A		50			369473	09/12/16 23:19	JHS	TAL NSH
Total/NA	Analysis	9056A		100			369473	09/12/16 23:39	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185649	08/22/16 10:23	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186106	08/25/16 17:07	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186257	08/26/16 16:02	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186348	08/29/16 11:51	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364073	08/19/16 10:23	LCS	TAL NSH
Total/NA	Analysis	7470A		1			364459	08/19/16 14:30	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	363124	08/18/16 19:05	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.63 mL	1.0 g	265998	08/22/16 15:04	MCJ	TAL SL
Total/NA	Analysis	903.0		1			269330	09/13/16 07:52	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.63 mL	1.0 g	266017	08/22/16 17:07	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	268308	09/07/16 17:48	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			270091	09/15/16 16:41	RTM	TAL SL

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-110019-6

Date Collected: 08/16/16 15:45

Matrix: Water

Date Received: 08/18/16 09:10

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			368753	09/09/16 10:51	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	185649	08/22/16 10:23	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186106	08/25/16 17:13	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186257	08/26/16 16:04	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186348	08/29/16 11:53	CNF	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	185647	08/22/16 10:22	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186480	08/30/16 12:36	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	364073	08/19/16 10:23	LCS	TAL NSH
Total/NA	Analysis	7470A		1			364459	08/19/16 14:32	BLG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363124	08/18/16 19:05	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.94 mL	1.0 g	265998	08/22/16 15:04	MCJ	TAL SL
Total/NA	Analysis	903.0		1			269330	09/13/16 07:52	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.94 mL	1.0 g	266017	08/22/16 17:07	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	268308	09/07/16 17:48	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			270091	09/15/16 16:41	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

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: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-17
A2LA	ISO/IEC 17025		0453.07	12-31-17
Alaska (UST)	State Program	10	UST-087	07-24-17
Arizona	State Program	9	AZ0473	05-05-17
Arkansas DEQ	State Program	6	88-0737	04-25-17
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-17
Florida	NELAP	4	E87358	06-30-17
Georgia	State Program	4	N/A	12-31-17
Illinois	NELAP	5	200010	12-09-16 *
Iowa	State Program	7	131	04-01-18
Kansas	NELAP	7	E-10229	10-31-16 *
Kentucky (UST)	State Program	4	19	06-30-17
Kentucky (WW)	State Program	4	90038	12-31-16
Louisiana	NELAP	6	30613	06-30-17
Maine	State Program	1	TN00032	11-03-17
Maryland	State Program	3	316	03-31-17
Massachusetts	State Program	1	M-TN032	06-30-17
Minnesota	NELAP	5	047-999-345	12-31-16 *
Mississippi	State Program	4	N/A	06-30-16 *
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-17
New Hampshire	NELAP	1	2963	10-09-16 *
New Jersey	NELAP	2	TN965	06-30-17
New York	NELAP	2	11342	03-31-17
North Carolina (WW/SW)	State Program	4	387	12-31-16
North Dakota	State Program	8	R-146	06-30-17
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	08-31-17
Oregon	NELAP	10	TN200001	04-27-17
Pennsylvania	NELAP	3	68-00585	06-30-17
Rhode Island	State Program	1	LAO00268	12-30-16
South Carolina	State Program	4	84009 (001)	02-28-16 *
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-17
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-17
Virginia	NELAP	3	460152	06-14-17
Washington	State Program	10	C789	07-19-16 *
West Virginia DEP	State Program	3	219	02-28-17
Wisconsin	State Program	5	998020430	08-31-17
Wyoming (UST)	A2LA	8	453.07	12-31-17

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Pittsburgh (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0688	09-30-16 *
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-17
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

490-110019 Chain of Custody

Cooler Received/Opened On 8/18/2016 @ 910

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

1. Tracking #_4648_____(last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID__14740456_____ pH Strip Lot_HC581117_ Chlorine Strip Lot_71130_

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

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

Loc: 490
110019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 8-18-16 @ 0910

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 4730 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960353 pH Strip Lot HC58117 Chlorine Strip Lot 71130

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: one 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
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

Loc: 490
110019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 8/18/2016 @ 910

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

1. Tracking #_____5688_____(last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID__17960357_____ pH Strip Lot_HC581117_ Chlorine Strip Lot_71130_

2. Temperature of rep. sample or temp blank when opened: 3.2 *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) HMG

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
110019

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

9/20/2016

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: 8/17/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		___1___ of ___1___ COCs
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		Sampler: Greg Dick
(270) 844-6000 Phone	TAT if different from Below ____		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	☑ 2 weeks		Walk-in Client:
Project Name: Green Ash Pond CCR Groundwater-Round 3	☐ 1 week		Lab Sampling:
Site: Sebree Station, Green Ash Pond	☐ 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	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
1	MW-11	8/16/16	1010	G	Water	6	N	N	x	x	x	x	
2	MW-12	8/16/16	1350	G	Water	6	N	N	x	x	x	x	
3	MW-13	8/16/16	1250	G	Water	6	N	N	x	x	x	x	
4	MW-14	8/16/16	1135	G	Water	6	N	N	x	x	x	x	
5	DUPE	8/16/16	1030	G	Water	6	N	N	x	x	x	x	
6	FIELD BLANK	8/16/16	1545	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.

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: 8/17/16 1200	Received by:	Company: TAN	Date/Time: 8-18-16 0910
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp. 2.1, 3.0, 3.2

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

490-110019 Chain of Custody

Cooler Received/Opened On 8/18/2016 @ 910

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

1. Tracking # 4648 (last 4 digits, FedEx) Courier: _FedEx_

   IR Gun ID 14740456 pH Strip Lot HC581117 Chlorine Strip Lot 71130

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

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 #_____

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
110019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 8-18-16 @ 0910

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 4730 (last 4 digits, FedEx) Courier: _ FedEx_ ____ _

IR Gun ID 17960353 pH Strip Lot HC58117 Chlorine Strip Lot 71130

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: one 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
Cooler Receipt Form.doc

LF-I
End of Form

Revised 12/15/15

Loc: 490
110019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 8/18/2016 @ 910

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

1. Tracking #_____5688_____(last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID__17960357_____ pH Strip Lot_HC581117_ Chlorine Strip Lot_71130_

2. Temperature of rep. sample or temp blank when opened: 3.2 *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) HMG

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
110019

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

9/20/2016

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: 8/17/2016**
Company: Big Rivers Electric Corporation	**Tel/Fax: (270) 844-6032**	**Lab Contact: Roxanne Cisneros**	**Carrier: FedEx**
Address: PO Box 24	**Analysis Turnaround Time**		___1___ of ___1___ COCs
City/State/Zip: Henderson, KY 42419	☐ CALENDAR DAYS ☐ WORKING DAYS		Sampler: Greg Dick
(270) 844-6000 Phone	TAT if different from Below _____		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	☑ 2 weeks		Walk-in Client:
Project Name: Green Ash Pond CCR Groundwater-Round 3	☐ 1 week		Lab Sampling:
Site: Sebree Station, Green Ash Pond	☐ 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	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
1	MW-11	8/16/16	1010	G	Water	6	N	N	x	x	x	x	
2	MW-12	8/16/16	1350	G	Water	6	N	N	x	x	x	x	
3	MW-13	8/16/16	1250	G	Water	6	N	N	x	x	x	x	
4	MW-14	8/16/16	1135	G	Water	6	N	N	x	x	x	x	
5	DUPE	8/16/16	1030	G	Water	6	N	N	x	x	x	x	
6	FIELD BLANK	8/16/16	1545	G	Water	6	N	N	x	x	x	x	
									4	4	1	1	

Greg Dick

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: Greg Dick	Company: BREC	Date/Time: 8/17/16 1200	Received by:	Company: TAN	Date/Time: 8-18-16 0910
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp. 2.1, 3.0, 3.2

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
THE LEADER IN ENVIRONMENTAL TESTING

Part # 158470-434 RIT EXP 05/17

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 19AUG16
ACTWGT: 20.0 LB MAN
CAD: 534003/CAFE2912

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963 – 7058

REF:

490-110019 Waybill

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 6493 8982 6219

XO AGCA

15238
PA – US PIT

Uncorrected temp 17.2 °C
Thermometer ID 8

CF 0.1 Initials ES

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

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-47556.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-110019-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 8/30/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR GW-Round 3	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-11 (490-110019-1)	8/16/16	10:10 Central		Water			X	X	X	2	
MW-12 (490-110019-2)	8/16/16	13:50 Central		Water			X	X	X	2	
MW-13 (490-110019-3)	8/16/16	12:50 Central		Water			X	X	X	2	
MW-14 (490-110019-4)	8/16/16	11:35 Central		Water			X	X	X	2	
DUPE (490-110019-5)	8/16/16	10:30 Central		Water			X	X	X	2	
FIELD BLANK (490-110019-6)	8/16/16	15:45 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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	8/19/16 1715	DAN	C McB	08/20/16 0825	
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:

9/20/2016

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

9/20/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-47555.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-110019-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 8/30/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR GW-Round 3	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-11 (490-110019-1)	8/16/16	10:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-12 (490-110019-2)	8/16/16	13:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-13 (490-110019-3)	8/16/16	12:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-14 (490-110019-4)	8/16/16	11:35 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-110019-5)	8/16/16	10:30 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-110019-6)	8/16/16	15:45 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: 8/19/16 1715	Company: TAL	Received by:	Date/Time: 8/20/16 0900	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: 490-110019-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 110019
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	2.1C, 3.0C, 3.2C
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").	N/A	
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: 490-110019-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 110019
List Number: 2
Creator: Skowronek, Elyse N

List Source: TestAmerica Pittsburgh
List Creation: 08/20/16 10:51 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	17.1
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: 490-110019-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 110019
List Number: 3
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 08/20/16 12:10 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	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
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	

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
490-110019-1	MW-11	89.5
490-110019-2	MW-12	81.2
490-110019-3	MW-13	88.6
490-110019-4	MW-14	84.9
490-110019-5	DUPE	85.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
490-110019-6	FIELD BLANK	88.0
LCS 160-265998/2-A	Lab Control Sample	85.2
LCSD 160-265998/3-A	Lab Control Sample Dup	91.5
MB 160-265998/1-A	Method Blank	87.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
490-110019-1	MW-11	89.5	84.5
490-110019-2	MW-12	81.2	83.7
490-110019-3	MW-13	88.6	80.7
490-110019-4	MW-14	84.9	81.5
490-110019-5	DUPE	85.5	83.7

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
490-110019-6	FIELD BLANK	88.0	82.6
LCS 160-266017/2-A	Lab Control Sample	85.2	86.4
LCSD 160-266017/3-A	Lab Control Sample Dup	91.5	83.4
MB 160-266017/1-A	Method Blank	87.2	90.8

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 3

TestAmerica Job ID: 490-110019-1
SDG: Sebree Station, Green Ash Pond

Ba = Ba Carrier
Y = 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: 490-114996-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR GW - Round 4
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
11/30/2016 1:42:54 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-114996-1	MW-11	Ground Water	10/25/16 11:10	10/28/16 09:40
490-114996-2	MW-12	Ground Water	10/25/16 15:10	10/28/16 09:40
490-114996-3	MW-13	Ground Water	10/25/16 14:00	10/28/16 09:40
490-114996-4	MW-14	Ground Water	10/25/16 13:00	10/28/16 09:40
490-114996-5	DUPE	Ground Water	10/25/16 11:45	10/28/16 09:40
490-114996-6	Field Blank	Ground Water	10/25/16 16:05	10/28/16 09:40

Job ID: 490-114996-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-114996-1

Comments
No additional comments.

Receipt
The samples were received on 10/28/2016 9:40 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, 0.2º C and 0.2º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-383848 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 490-383848 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 490-383848 contained Chloride, 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: The following samples was diluted due to the nature of the sample matrix: MW-11 (490-114996-1), MW-12 (490-114996-2), MW-13 (490-114996-3), MW-14 (490-114996-4) and DUPE (490-114996-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-384062 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.

Method(s) 9056A: Due to the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed for analytical batch 490-384062 . However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits. (LCS 490-384062/4) and (LCSD 490-384062/5)

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.

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.

General Chemistry

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-11

Date Collected: 10/25/16 11:10
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2000**	**B**	300	20.0	mg/L			11/03/16 23:22	100
Fluoride	ND		1.00	0.0100	mg/L			11/01/16 23:19	1
Sulfate	**1150**	**B**	500	3.00	mg/L			11/03/16 23:22	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0544**		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 15:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		11/02/16 07:05	11/11/16 18:25	1
Arsenic	**0.00271**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:25	1
Barium	**0.0384**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:25	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:25	1
Boron	**0.736**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:25	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:25	1
Calcium	**291**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:25	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:25	1
Cobalt	**0.00138**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:25	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:25	1
Molybdenum	**0.000970**	**J**	0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:25	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:25	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 10:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.97**		0.100	0.100	SU			10/31/16 17:29	1
Temperature	**23.6**		0.100	0.100	Degrees C			10/31/16 17:29	1
Total Dissolved Solids	**4490**		40.0	28.0	mg/L			10/28/16 17:15	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	**1.02**		0.236	0.253	1.00	0.173	pCi/L	11/03/16 11:41	11/27/16 17:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*11/03/16 11:41*	*11/27/16 17:59*	*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	**0.837**		0.305	0.315	1.00	0.417	pCi/L	11/03/16 15:26	11/23/16 16:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*11/03/16 15:26*	*11/23/16 16:52*	*1*

Client Sample ID: MW-11
Date Collected: 10/25/16 11:10
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-1
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.7		40 - 110	11/03/16 15:26	11/23/16 16:52	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	1.86		0.386	0.404	5.00	0.417	pCi/L		11/30/16 11:17	1

Client Sample ID: MW-12

Date Collected: 10/25/16 15:10
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26.2**	**B**	6.00	0.400	mg/L			11/03/16 23:46	2
Fluoride	**0.532**	**J B**	1.00	0.0100	mg/L			11/02/16 00:08	1
Sulfate	**64.0**	**B**	25.0	0.150	mg/L			11/04/16 00:11	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0208**	**J**	0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 15:20	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		11/02/16 07:05	11/11/16 18:30	1
Arsenic	**0.00386**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:30	1
Barium	**0.114**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:30	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:30	1
Boron	**0.286**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:30	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:30	1
Calcium	**99.4**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:30	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:30	1
Cobalt	**0.000199**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:30	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:30	1
Molybdenum	**0.0123**		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:30	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:30	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 11:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.11**		0.100	0.100	SU			10/31/16 17:29	1
Temperature	**23.6**		0.100	0.100	Degrees C			10/31/16 17:29	1
Total Dissolved Solids	**677**		10.0	7.00	mg/L			10/28/16 17:15	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	0.356	U	0.264	0.266	1.00	0.368	pCi/L	11/02/16 15:25	11/29/16 21:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.7*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:53*	*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	**0.597**		0.290	0.295	1.00	0.428	pCi/L	11/02/16 15:54	11/29/16 19:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.3*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:04*	*1*

Client Sample ID: MW-12
Date Collected: 10/25/16 15:10
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-2
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.9		40 - 110	11/02/16 15:54	11/29/16 19:04	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	0.954		0.393	0.398	5.00	0.428	pCi/L		11/30/16 11:17	1

Client Sample ID: MW-13

Date Collected: 10/25/16 14:00
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**24.8**	**B**	6.00	0.400	mg/L			11/04/16 00:36	2
Fluoride	**0.380**	**J B**	1.00	0.0100	mg/L			11/02/16 00:32	1
Sulfate	**104**	**B**	50.0	0.300	mg/L			11/04/16 01:25	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0104**	**J**	0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 15:25	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		11/02/16 07:05	11/11/16 18:35	1
Arsenic	**0.00111**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:35	1
Barium	**0.0810**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:35	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:35	1
Boron	**0.0335**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:35	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:35	1
Calcium	**94.5**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:35	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:35	1
Cobalt	**0.00149**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:35	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:35	1
Molybdenum	**0.00501**	**J**	0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:35	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:35	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 11:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.63**		0.100	0.100	SU			10/31/16 17:29	1
Temperature	**23.6**		0.100	0.100	Degrees C			10/31/16 17:29	1
Total Dissolved Solids	**704**		10.0	7.00	mg/L			10/28/16 17:15	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	0.138	U	0.205	0.206	1.00	0.352	pCi/L	11/02/16 15:25	11/29/16 21:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:53*	*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	0.162	U	0.252	0.252	1.00	0.423	pCi/L	11/02/16 15:54	11/29/16 19:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:04*	*1*

Client Sample ID: MW-13
Date Collected: 10/25/16 14:00
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-3
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	78.5		40 - 110	11/02/16 15:54	11/29/16 19:04	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	0.325	0.325	5.00	0.423	pCi/L		11/30/16 11:17	1

Client Sample ID: MW-14

Date Collected: 10/25/16 13:00
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**193**	**B**	60.0	4.00	mg/L			11/04/16 01:49	20
Fluoride	**0.489**	**J B**	1.00	0.0100	mg/L			11/02/16 00:57	1
Sulfate	**215**	**B**	100	0.600	mg/L			11/04/16 01:49	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0456**	**J**	0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 15:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		11/02/16 07:05	11/11/16 18:40	1
Arsenic	**0.000829**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:40	1
Barium	**0.0651**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:40	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:40	1
Boron	**0.209**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:40	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:40	1
Calcium	**193**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:40	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:40	1
Cobalt	**0.000157**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:40	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:40	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:40	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:40	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 11:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.98**		0.100	0.100	SU			10/31/16 17:29	1
Temperature	**23.6**		0.100	0.100	Degrees C			10/31/16 17:29	1
Total Dissolved Solids	**1130**		10.0	7.00	mg/L			10/28/16 17:15	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	**0.753**		0.326	0.333	1.00	0.338	pCi/L	11/02/16 15:25	11/29/16 21:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:54*	*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	**0.799**		0.304	0.313	1.00	0.416	pCi/L	11/02/16 15:54	11/29/16 19:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:04*	*1*

Client Sample ID: MW-14
Date Collected: 10/25/16 13:00
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-4
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	78.1		40 - 110	11/02/16 15:54	11/29/16 19:04	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	1.55		0.446	0.457	5.00	0.416	pCi/L		11/30/16 11:17	1

Client Sample ID: DUPE

Date Collected: 10/25/16 11:45
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1890**	**B**	300	20.0	mg/L			11/04/16 02:51	100
Fluoride	ND		1.00	0.0100	mg/L			11/02/16 01:22	1
Sulfate	**1140**	**B**	500	3.00	mg/L			11/04/16 02:51	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0555**		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 15:46	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		11/02/16 07:05	11/11/16 18:46	1
Arsenic	**0.00241**	**J**	0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:46	1
Barium	**0.0440**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:46	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:46	1
Boron	**0.806**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:46	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:46	1
Calcium	**306**		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:46	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:46	1
Cobalt	**0.00103**	**J**	0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:46	1
Lead	**0.000164**	**J**	0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:46	1
Molybdenum	**0.00109**	**J**	0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:46	1
Selenium	**0.000472**	**J**	0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:46	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 11:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.89**		0.100	0.100	SU			10/31/16 17:29	1
Temperature	**23.6**		0.100	0.100	Degrees C			10/31/16 17:29	1
Total Dissolved Solids	**4590**	**B**	40.0	28.0	mg/L			11/01/16 15:16	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	**0.921**		0.373	0.382	1.00	0.389	pCi/L	11/02/16 15:25	11/29/16 21:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:54*	*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	**1.52**		0.383	0.408	1.00	0.477	pCi/L	11/02/16 15:54	11/29/16 19:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:04*	*1*

Client Sample ID: DUPE
Date Collected: 10/25/16 11:45
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-5
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	79.3		40 - 110	11/02/16 15:54	11/29/16 19:04	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	2.44		0.535	0.559	5.00	0.477	pCi/L		11/30/16 11:17	1

Client Sample ID: Field Blank

Date Collected: 10/25/16 16:05
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-6

Matrix: Ground 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			11/02/16 02:11	1
Fluoride	ND		1.00	0.0100	mg/L			11/02/16 02:11	1
Sulfate	**0.205**	**J B**	5.00	0.0300	mg/L			11/02/16 02:11	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		11/02/16 07:06	11/07/16 15:52	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		11/02/16 07:05	11/11/16 18:51	1
Arsenic	ND		0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 18:51	1
Barium	**0.000506**	**J**	0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 18:51	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 18:51	1
Boron	**0.00395**	**J**	1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 18:51	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 18:51	1
Calcium	**0.0528**	**J**	1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 18:51	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 18:51	1
Cobalt	ND		0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 18:51	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 18:51	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 18:51	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 18:51	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 18:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 11:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.23**		0.100	0.100	SU			10/31/16 17:29	1
Temperature	**23.6**		0.100	0.100	Degrees C			10/31/16 17:29	1
Total Dissolved Solids	**7.00**	**J B**	10.0	7.00	mg/L			11/01/16 15:16	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	0.0547	U	0.217	0.217	1.00	0.413	pCi/L	11/02/16 15:25	11/29/16 21:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:54*	*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	-0.122	U	0.182	0.183	1.00	0.354	pCi/L	11/02/16 15:54	11/29/16 19:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:04*	*1*

Client Sample ID: Field Blank

Date Collected: 10/25/16 16:05
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-6

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:04*	*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	-0.0671	U	0.284	0.284	5.00	0.413	pCi/L		11/30/16 11:17	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-383848/3
Matrix: Water
Analysis Batch: 383848

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3005	J	3.00	0.200	mg/L			11/01/16 22:42	1
Fluoride	0.04260	J	1.00	0.0100	mg/L			11/01/16 22:42	1
Sulfate	0.1950	J	5.00	0.0300	mg/L			11/01/16 22:42	1

Lab Sample ID: LCS 490-383848/4
Matrix: Water
Analysis Batch: 383848

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	10.04		mg/L		100	80 - 120
Fluoride	1.00	0.9795	J	mg/L		98	80 - 120
Sulfate	10.0	10.20		mg/L		102	80 - 120

Lab Sample ID: LCSD 490-383848/5
Matrix: Water
Analysis Batch: 383848

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	10.25		mg/L		102	80 - 120	2	20
Fluoride	1.00	0.9734	J	mg/L		97	80 - 120	1	20
Sulfate	10.0	10.14		mg/L		101	80 - 120	1	20

Lab Sample ID: 490-114996-D-1 MS
Matrix: Ground Water
Analysis Batch: 383848

Client Sample ID: 490-114996-D-1 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1500	E B	2.00	1288	E 4	mg/L		-10395	80 - 120
Fluoride	ND	F1	0.200	ND	F1	mg/L		0	80 - 120
Sulfate	1320	E B	2.00	1104	E 4	mg/L		-11047	80 - 120

Lab Sample ID: 490-114996-D-1 MSD
Matrix: Ground Water
Analysis Batch: 383848

Client Sample ID: 490-114996-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	1500	E B	2.00	1288	E 4	mg/L		-10386	80 - 120	0	20
Fluoride	ND	F1	0.200	ND	F1	mg/L		0	80 - 120	NC	20
Sulfate	1320	E B	2.00	1099	E 4	mg/L		-11307	80 - 120	0	20

Lab Sample ID: MB 490-384062/3
Matrix: Water
Analysis Batch: 384062

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3268	J	3.00	0.200	mg/L			11/03/16 22:20	1

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

Lab Sample ID: MB 490-384062/3
Matrix: Water
Analysis Batch: 384062

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			11/03/16 22:20	1
Sulfate	0.1866	J	5.00	0.0300	mg/L			11/03/16 22:20	1

Lab Sample ID: LCS 490-384062/4
Matrix: Water
Analysis Batch: 384062

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	10.55		mg/L		105	80 - 120
Fluoride	1.00	1.044		mg/L		104	80 - 120
Sulfate	10.0	10.29		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-384062/5
Matrix: Water
Analysis Batch: 384062

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	10.52		mg/L		105	80 - 120	0	20
Fluoride	1.00	1.036		mg/L		104	80 - 120	1	20
Sulfate	10.0	10.24		mg/L		102	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-193025/1-A
Matrix: Water
Analysis Batch: 193588

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 193025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		11/02/16 07:06	11/07/16 14:16	1

Lab Sample ID: LCS 180-193025/2-A
Matrix: Water
Analysis Batch: 193588

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 193025

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.021		mg/L		102	80 - 120

Lab Sample ID: LCSD 180-193025/3-A
Matrix: Water
Analysis Batch: 193588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 193025

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.017		mg/L		102	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-193024/1-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		11/02/16 07:05	11/11/16 17:30	1
Arsenic	ND		0.00500	0.000118	mg/L		11/02/16 07:05	11/11/16 17:30	1
Barium	ND		0.200	0.000270	mg/L		11/02/16 07:05	11/11/16 17:30	1
Beryllium	ND		0.00200	0.000102	mg/L		11/02/16 07:05	11/11/16 17:30	1
Boron	ND		1.00	0.00339	mg/L		11/02/16 07:05	11/11/16 17:30	1
Cadmium	ND		0.00100	0.000152	mg/L		11/02/16 07:05	11/11/16 17:30	1
Calcium	ND		1.00	0.0412	mg/L		11/02/16 07:05	11/11/16 17:30	1
Chromium	ND		0.00300	0.000339	mg/L		11/02/16 07:05	11/11/16 17:30	1
Cobalt	ND		0.00500	0.0000218	mg/L		11/02/16 07:05	11/11/16 17:30	1
Lead	ND		0.00500	0.0000675	mg/L		11/02/16 07:05	11/11/16 17:30	1
Molybdenum	ND		0.0100	0.000873	mg/L		11/02/16 07:05	11/11/16 17:30	1
Selenium	ND		0.0100	0.000348	mg/L		11/02/16 07:05	11/11/16 17:30	1
Thallium	ND		0.00100	0.0000360	mg/L		11/02/16 07:05	11/11/16 17:30	1

Lab Sample ID: LCS 180-193024/2-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5439		mg/L		109	80 - 120
Arsenic	0.0400	0.04063		mg/L		102	80 - 120
Barium	2.00	2.035		mg/L		102	80 - 120
Beryllium	0.0500	0.05013		mg/L		100	80 - 120
Boron	1.00	1.114		mg/L		111	80 - 120
Cadmium	0.0500	0.05364		mg/L		107	80 - 120
Calcium	50.0	53.66		mg/L		107	80 - 120
Chromium	0.200	0.2074		mg/L		104	80 - 120
Cobalt	0.500	0.5370		mg/L		107	80 - 120
Lead	0.0200	0.02125		mg/L		106	80 - 120
Molybdenum	1.00	1.142		mg/L		114	80 - 120
Selenium	0.0100	0.01116		mg/L		112	80 - 120
Thallium	0.0500	0.05260		mg/L		105	80 - 120

Lab Sample ID: LCSD 180-193024/3-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5422		mg/L		108	80 - 120	0	20
Arsenic	0.0400	0.04112		mg/L		103	80 - 120	1	20
Barium	2.00	2.017		mg/L		101	80 - 120	1	20
Beryllium	0.0500	0.05028		mg/L		101	80 - 120	0	20
Boron	1.00	1.074		mg/L		107	80 - 120	4	20
Cadmium	0.0500	0.05040		mg/L		101	80 - 120	6	20
Calcium	50.0	52.81		mg/L		106	80 - 120	2	20
Chromium	0.200	0.2114		mg/L		106	80 - 120	2	20
Cobalt	0.500	0.5306		mg/L		106	80 - 120	1	20
Lead	0.0200	0.02117		mg/L		106	80 - 120	0	20

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

Lab Sample ID: LCSD 180-193024/3-A
Matrix: Water
Analysis Batch: 194131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 193024

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum			1.00	1.146		mg/L		115	80 - 120	0	20
Selenium			0.0100	0.008434	J	mg/L		84	80 - 120	28	20
Thallium			0.0500	0.05176		mg/L		104	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-388552/1-A
Matrix: Water
Analysis Batch: 388888

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 388552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		11/21/16 12:19	11/22/16 10:49	1

Lab Sample ID: LCS 490-388552/2-A
Matrix: Water
Analysis Batch: 388888

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 388552

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9987		ug/L		100	80 - 120		

Lab Sample ID: 490-114996-1 MS
Matrix: Ground Water
Analysis Batch: 388888

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 388552

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	0.9278		ug/L		93	75 - 125		

Lab Sample ID: 490-114996-1 MSD
Matrix: Ground Water
Analysis Batch: 388888

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 388552

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.055		ug/L		106	75 - 125	13	20

Method: 9040C - pH

Lab Sample ID: LCS 490-382823/12
Matrix: Water
Analysis Batch: 382823

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	6.970		SU		100	98 - 103		

Lab Sample ID: 490-114996-1 DU
Matrix: Ground Water
Analysis Batch: 382823

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.97			6.830		SU				2	20

Method: 9040C - pH (Continued)

Lab Sample ID: 490-114996-1 DU
Matrix: Ground Water
Analysis Batch: 382823

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Temperature	23.6			23.60		Degrees C				0	20

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

Lab Sample ID: MB 490-381387/18
Matrix: Water
Analysis Batch: 381387

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	8.000	J	10.0	7.00	mg/L			11/01/16 15:16	1

Lab Sample ID: LCS 490-381387/19
Matrix: Water
Analysis Batch: 381387

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	110.0		mg/L		110	90 - 110		

Lab Sample ID: 490-114996-5 DU
Matrix: Ground Water
Analysis Batch: 381387

Client Sample ID: DUPE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	4590	B		4676		mg/L				2	20

Lab Sample ID: MB 490-382179/1
Matrix: Water
Analysis Batch: 382179

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			10/28/16 17:15	1

Lab Sample ID: LCS 490-382179/2
Matrix: Water
Analysis Batch: 382179

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: LCSD 490-382179/3
Matrix: Water
Analysis Batch: 382179

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	95.00		mg/L		95	90 - 110	0	20

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

Lab Sample ID: 490-114904-D-2 DU
Matrix: Water
Analysis Batch: 382179

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	848			854.0		mg/L				0.7	20

Lab Sample ID: 490-114994-K-3 DU
Matrix: Water
Analysis Batch: 382179

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	4060			4060		mg/L				0.1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-277268/1-A
Matrix: Water
Analysis Batch: 281281

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277268

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.3001	U	0.295	0.296	1.00	0.466	pCi/L	11/02/16 15:25	11/29/16 21:51	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*11/02/16 15:25*	*11/29/16 21:51*	*1*

Lab Sample ID: LCS 160-277268/2-A
Matrix: Water
Analysis Batch: 281281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277268

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.1	15.19		1.93	1.00	0.519	pCi/L	137	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.4*		*40 - 110*

Lab Sample ID: MB 160-277496/1-A
Matrix: Water
Analysis Batch: 280961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277496

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.05408	U	0.0684	0.0686	1.00	0.169	pCi/L	11/03/16 11:41	11/27/16 17:59	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*11/03/16 11:41*	*11/27/16 17:59*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-277496/2-A
Matrix: Water
Analysis Batch: 280961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277496

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.1	11.96		1.31	1.00	0.159	pCi/L	108	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.7*		*40 - 110*

Lab Sample ID: 160-19783-B-2-B DU
Matrix: Water
Analysis Batch: 280961

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 277496

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.165	U		0.2545		0.146	1.00	0.187	pCi/L			0.32	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*84.9*		*40 - 110*

Lab Sample ID: 160-19757-V-2-B DU
Matrix: Water
Analysis Batch: 281281

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 277268

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	2.13			2.055		0.546	1.00	0.418	pCi/L			0.06	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*89.5*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-277276/1-A
Matrix: Water
Analysis Batch: 281385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277276

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3252	U	0.268	0.270	1.00	0.427	pCi/L	11/02/16 15:54	11/29/16 19:02	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:02*	*1*
Y Carrier	*77.8*		*40 - 110*	*11/02/16 15:54*	*11/29/16 19:02*	*1*

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

Lab Sample ID: LCS 160-277276/2-A
Matrix: Water
Analysis Batch: 281385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277276

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.2	14.98		1.67	1.00	0.471	pCi/L	105	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.4*		*40 - 110*
Y Carrier	*80.0*		*40 - 110*

Lab Sample ID: MB 160-277524/1-A
Matrix: Water
Analysis Batch: 280895

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277524

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4003		0.237	0.240	1.00	0.356	pCi/L	11/03/16 15:26	11/23/16 16:52	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*11/03/16 15:26*	*11/23/16 16:52*	*1*
Y Carrier	*81.5*		*40 - 110*	*11/03/16 15:26*	*11/23/16 16:52*	*1*

Lab Sample ID: LCS 160-277524/2-A
Matrix: Water
Analysis Batch: 280895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277524

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.2	14.78		1.58	1.00	0.342	pCi/L	104	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.7*		*40 - 110*
Y Carrier	*90.8*		*40 - 110*

Lab Sample ID: 160-19783-B-2-D DU
Matrix: Water
Analysis Batch: 280894

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 277524

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.222	U		0.9029		0.344	1.00	0.462	pCi/L			1.09	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*84.9*		*40 - 110*
Y Carrier	*82.2*		*40 - 110*

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

Lab Sample ID: 160-19757-V-2-D DU
Matrix: Water
Analysis Batch: 281385

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 277276

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	2.30			2.567		0.475	1.00	0.434	pCi/L			0.29	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*89.5*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

HPLC/IC

Analysis Batch: 383848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	9056A	
490-114996-2	MW-12	Total/NA	Ground Water	9056A	
490-114996-3	MW-13	Total/NA	Ground Water	9056A	
490-114996-4	MW-14	Total/NA	Ground Water	9056A	
490-114996-5	DUPE	Total/NA	Ground Water	9056A	
490-114996-6	Field Blank	Total/NA	Ground Water	9056A	
MB 490-383848/3	Method Blank	Total/NA	Water	9056A	
LCS 490-383848/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-383848/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-114996-D-1 MS	490-114996-D-1 MS	Total/NA	Ground Water	9056A	
490-114996-D-1 MSD	490-114996-D-1 MSD	Total/NA	Ground Water	9056A	

Analysis Batch: 384062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	9056A	
490-114996-2	MW-12	Total/NA	Ground Water	9056A	
490-114996-2	MW-12	Total/NA	Ground Water	9056A	
490-114996-3	MW-13	Total/NA	Ground Water	9056A	
490-114996-3	MW-13	Total/NA	Ground Water	9056A	
490-114996-4	MW-14	Total/NA	Ground Water	9056A	
490-114996-5	DUPE	Total/NA	Ground Water	9056A	
MB 490-384062/3	Method Blank	Total/NA	Water	9056A	
LCS 490-384062/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-384062/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 193024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total Recoverable	Ground Water	3005A	
490-114996-2	MW-12	Total Recoverable	Ground Water	3005A	
490-114996-3	MW-13	Total Recoverable	Ground Water	3005A	
490-114996-4	MW-14	Total Recoverable	Ground Water	3005A	
490-114996-5	DUPE	Total Recoverable	Ground Water	3005A	
490-114996-6	Field Blank	Total Recoverable	Ground Water	3005A	
MB 180-193024/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-193024/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-193024/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 193025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total Recoverable	Ground Water	3005A	
490-114996-2	MW-12	Total Recoverable	Ground Water	3005A	
490-114996-3	MW-13	Total Recoverable	Ground Water	3005A	
490-114996-4	MW-14	Total Recoverable	Ground Water	3005A	
490-114996-5	DUPE	Total Recoverable	Ground Water	3005A	
490-114996-6	Field Blank	Total Recoverable	Ground Water	3005A	
MB 180-193025/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-193025/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-193025/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 193588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total Recoverable	Ground Water	6010C	193025
490-114996-2	MW-12	Total Recoverable	Ground Water	6010C	193025
490-114996-3	MW-13	Total Recoverable	Ground Water	6010C	193025
490-114996-4	MW-14	Total Recoverable	Ground Water	6010C	193025
490-114996-5	DUPE	Total Recoverable	Ground Water	6010C	193025
490-114996-6	Field Blank	Total Recoverable	Ground Water	6010C	193025
MB 180-193025/1-A	Method Blank	Total Recoverable	Water	6010C	193025
LCS 180-193025/2-A	Lab Control Sample	Total Recoverable	Water	6010C	193025
LCSD 180-193025/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	193025

Analysis Batch: 194131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total Recoverable	Ground Water	6020A	193024
490-114996-2	MW-12	Total Recoverable	Ground Water	6020A	193024
490-114996-3	MW-13	Total Recoverable	Ground Water	6020A	193024
490-114996-4	MW-14	Total Recoverable	Ground Water	6020A	193024
490-114996-5	DUPE	Total Recoverable	Ground Water	6020A	193024
490-114996-6	Field Blank	Total Recoverable	Ground Water	6020A	193024
MB 180-193024/1-A	Method Blank	Total Recoverable	Water	6020A	193024
LCS 180-193024/2-A	Lab Control Sample	Total Recoverable	Water	6020A	193024
LCSD 180-193024/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	193024

Prep Batch: 388552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	7470A	
490-114996-2	MW-12	Total/NA	Ground Water	7470A	
490-114996-3	MW-13	Total/NA	Ground Water	7470A	
490-114996-4	MW-14	Total/NA	Ground Water	7470A	
490-114996-5	DUPE	Total/NA	Ground Water	7470A	
490-114996-6	Field Blank	Total/NA	Ground Water	7470A	
MB 490-388552/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-388552/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-114996-1 MS	MW-11	Total/NA	Ground Water	7470A	
490-114996-1 MSD	MW-11	Total/NA	Ground Water	7470A	

Analysis Batch: 388888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	7470A	388552
490-114996-2	MW-12	Total/NA	Ground Water	7470A	388552
490-114996-3	MW-13	Total/NA	Ground Water	7470A	388552
490-114996-4	MW-14	Total/NA	Ground Water	7470A	388552
490-114996-5	DUPE	Total/NA	Ground Water	7470A	388552
490-114996-6	Field Blank	Total/NA	Ground Water	7470A	388552
MB 490-388552/1-A	Method Blank	Total/NA	Water	7470A	388552
LCS 490-388552/2-A	Lab Control Sample	Total/NA	Water	7470A	388552
490-114996-1 MS	MW-11	Total/NA	Ground Water	7470A	388552
490-114996-1 MSD	MW-11	Total/NA	Ground Water	7470A	388552

General Chemistry

Analysis Batch: 381387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-114996-6	Field Blank	Total/NA	Ground Water	SM 2540C	
MB 490-381387/18	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-381387/19	Lab Control Sample	Total/NA	Water	SM 2540C	
490-114996-5 DU	DUPE	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 382179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-114996-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-114996-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-114996-4	MW-14	Total/NA	Ground Water	SM 2540C	
MB 490-382179/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-382179/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-382179/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-114904-D-2 DU	Duplicate	Total/NA	Water	SM 2540C	
490-114994-K-3 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 382823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	9040C	
490-114996-2	MW-12	Total/NA	Ground Water	9040C	
490-114996-3	MW-13	Total/NA	Ground Water	9040C	
490-114996-4	MW-14	Total/NA	Ground Water	9040C	
490-114996-5	DUPE	Total/NA	Ground Water	9040C	
490-114996-6	Field Blank	Total/NA	Ground Water	9040C	
LCS 490-382823/12	Lab Control Sample	Total/NA	Water	9040C	
490-114996-1 DU	MW-11	Total/NA	Ground Water	9040C	

Rad

Prep Batch: 277268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-2	MW-12	Total/NA	Ground Water	PrecSep-21	
490-114996-3	MW-13	Total/NA	Ground Water	PrecSep-21	
490-114996-4	MW-14	Total/NA	Ground Water	PrecSep-21	
490-114996-5	DUPE	Total/NA	Ground Water	PrecSep-21	
490-114996-6	Field Blank	Total/NA	Ground Water	PrecSep-21	
MB 160-277268/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-277268/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-19757-V-2-B DU	Duplicate	Dissolved	Water	PrecSep-21	

Prep Batch: 277276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-2	MW-12	Total/NA	Ground Water	PrecSep_0	
490-114996-3	MW-13	Total/NA	Ground Water	PrecSep_0	
490-114996-4	MW-14	Total/NA	Ground Water	PrecSep_0	
490-114996-5	DUPE	Total/NA	Ground Water	PrecSep_0	
490-114996-6	Field Blank	Total/NA	Ground Water	PrecSep_0	
MB 160-277276/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 277276 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-277276/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-19757-V-2-D DU	Duplicate	Dissolved	Water	PrecSep_0	

Prep Batch: 277496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	PrecSep-21	
MB 160-277496/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-277496/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-19783-B-2-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 277524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114996-1	MW-11	Total/NA	Ground Water	PrecSep_0	
MB 160-277524/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-277524/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-19783-B-2-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11

Date Collected: 10/25/16 11:10
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-1

Matrix: Ground 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			383848	11/01/16 23:19	KS	TAL NSH
Total/NA	Analysis	9056A		100			384062	11/03/16 23:22	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:14	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:25	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			388888	11/22/16 10:55	LCS	TAL NSH
Total/NA	Analysis	9040C		1			382823	10/31/16 17:29	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	382179	10/28/16 17:15	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.01 mL	1.0 g	277496	11/03/16 11:41	CMC	TAL SL
Total/NA	Analysis	903.0		1			280961	11/27/16 17:59	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.01 mL	1.0 g	277524	11/03/16 15:26	CMC	TAL SL
Total/NA	Analysis	904.0		1			280895	11/23/16 16:52	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 10/25/16 15:10
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-2

Matrix: Ground 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			383848	11/02/16 00:08	KS	TAL NSH
Total/NA	Analysis	9056A		2			384062	11/03/16 23:46	NC	TAL NSH
Total/NA	Analysis	9056A		5			384062	11/04/16 00:11	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:20	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:30	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			388888	11/22/16 11:08	LCS	TAL NSH
Total/NA	Analysis	9040C		1			382823	10/31/16 17:29	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	382179	10/28/16 17:15	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.77 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281281	11/29/16 21:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			1000.77 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:04	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: MW-13

Date Collected: 10/25/16 14:00
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-3

Matrix: Ground 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			383848	11/02/16 00:32	KS	TAL NSH
Total/NA	Analysis	9056A		2			384062	11/04/16 00:36	NC	TAL NSH
Total/NA	Analysis	9056A		10			384062	11/04/16 01:25	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:25	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:35	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			388888	11/22/16 11:11	LCS	TAL NSH
Total/NA	Analysis	9040C		1			382823	10/31/16 17:29	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	382179	10/28/16 17:15	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.29 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281281	11/29/16 21:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			1000.29 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:04	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 10/25/16 13:00
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-4

Matrix: Ground 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			383848	11/02/16 00:57	KS	TAL NSH
Total/NA	Analysis	9056A		20			384062	11/04/16 01:49	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:30	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:40	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			388888	11/22/16 11:14	LCS	TAL NSH
Total/NA	Analysis	9040C		1			382823	10/31/16 17:29	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	382179	10/28/16 17:15	EAR	TAL NSH
Total/NA	Prep	PrecSep-21			1000.42 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281281	11/29/16 21:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			1000.42 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:04	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: DUPE

Date Collected: 10/25/16 11:45
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-5

Matrix: Ground 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			383848	11/02/16 01:22	KS	TAL NSH
Total/NA	Analysis	9056A		100			384062	11/04/16 02:51	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:46	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:46	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			388888	11/22/16 11:16	LCS	TAL NSH
Total/NA	Analysis	9040C		1			382823	10/31/16 17:29	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	381387	11/01/16 15:16	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.50 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281281	11/29/16 21:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			999.50 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:04	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	RTM	TAL SL

Client Sample ID: Field Blank

Date Collected: 10/25/16 16:05
Date Received: 10/28/16 09:40

Lab Sample ID: 490-114996-6

Matrix: Ground 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			383848	11/02/16 02:11	KS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	193025	11/02/16 07:06	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			193588	11/07/16 15:52	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	193024	11/02/16 07:05	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			194131	11/11/16 18:51	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	388552	11/21/16 12:19	LCS	TAL NSH
Total/NA	Analysis	7470A		1			388888	11/22/16 11:19	LCS	TAL NSH
Total/NA	Analysis	9040C		1			382823	10/31/16 17:29	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	381387	11/01/16 15:16	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.53 mL	1.0 g	277268	11/02/16 15:25	AS	TAL SL
Total/NA	Analysis	903.0		1			281281	11/29/16 21:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			1000.53 mL	1.0 g	277276	11/02/16 15:54	AS	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	281385	11/29/16 19:04	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			281646	11/30/16 11:17	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: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Ground Water	pH
9040C		Ground Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
SM 2540C		Ground Water	Total Dissolved Solids

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-114996 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 10/28/2016 @ 0940

Time Samples Removed From Cooler 1341 Time Samples Placed In Storage 1438 (2 Hour Window)

1. Tracking # 5630 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot HC682547 Chlorine Strip Lot 061316W

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) RCN

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) PM

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) PM

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) PM

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

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
114996

Cooler Received/Opened On 10/28/2016 @ 0940

Time Samples Removed From Cooler 1350 Time Samples Placed In Storage 1431 (2 Hour Window)

1. Tracking # 5695 (last 4 digits, FedEx) Courier: ___FedEx_____

IR Gun ID 31470366 pH Strip Lot HC682547 Chlorine Strip Lot 0616W

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) WG

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) PM

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) PM

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) PM

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

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
114996
#1
A

Cooler Received/Opened On 10/28/2016 @ 0940

Time Samples Removed From Cooler 1330 Time Samples Placed In Storage 1438 (2 Hour Window)

1. Tracking # 5570 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 97310166 pH Strip Lot HC682547 Chlorine Strip Lot 061316 W.

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) _____

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

PM 10/28/16

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) PM

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) PM

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) PM

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

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: 10/27/2016**	490-58040-18746.1
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: Green Ash Pond CCR Groundwater-Round 4	☐ 1 week			
Site: Sebree Station, Green Ash Pond	☐ 2 days			Job / SDG No.:
P O #: Purchase Order-see DOCs	☐ 1 day			

Loc: 490
114996

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-11	10/25/16	1110	G	Water	6	N	N	x	x	x	x	
MW-12	10/25/16	1510	G	Water	6	N	N	x	x	x	x	
MW-13	10/25/16	1400	G	Water	6	N	N	x	x	x	x	
MW-14	10/25/16	1300	G	Water	6	N	N	x	x	x	x	
DUPE	10/25/16	1145	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	10/25/16	1605	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Greg Dick

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: Greg Dick	Company: BREC	Date/Time: 1100 10/27/2016	Received by:	0.2	Company: TAN	Date/Time: 10/28/16	940
Relinquished by:	Company:	Date/Time:	Received by:	0.2	Company:	Date/Time:	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	0.2	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)

Loc: 490
114996
#1
B

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

Greg Dick, BREC
10/27/2016 1100

490-14996 Wayb

Uncorrected temp 24.4 °C

Thermometer ID 9

CF -0.2 Initials TJ

PT-WI-SR-001 effective 7/26/13

EV AGCA

MPS# 0263 7096 4972 3060

Mstr# 7096 4972 3059

2 of 5

0201

TUE - 01 NOV 10:30A

PRIORITY OVERNIGHT

15238

PIT

PA-US

FedEx Express

ORIGIN ID:RNCA (615) 2

SHIPPING

TEST AMERICA

2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204

UNITED STATES US

SHIP DATE: 31OCT16

ACTWGT: 15.0 LB MAN

CAD: 8204257/GAFE291S

BILL RECIPIENT

TO SHIPPING/RECEIVING

TESTAMERICA LABORATORIES, INC.

301 ALPHA DRIVE

RIDC PARK

PITTSBURGH PA 152

(412) 963-7058

REF: S490-59294

THE LEADER IN ENVIRONMENTAL TESTING

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

Chain of Custody Record

490-114996 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-50095.1
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 #: 490-114996-1
Address: 13715 Rider Trail North,	Due Date Requested: 11/28/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR GW - Round 4	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)	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-11 (490-114996-1)	10/25/16	11:10 Central		Water			X	X	X	2	
MW-12 (490-114996-2)	10/25/16	15:10 Central		Water			X	X	X	2	
MW-13 (490-114996-3)	10/25/16	14:00 Central		Water			X	X	X	2	
MW-14 (490-114996-4)	10/25/16	13:00 Central		Water			X	X	X	2	
DUPE (490-114996-5)	10/25/16	11:45 Central		Water			X	X	X	2	
Field Blank (490-114996-6)	10/25/16	16:05 Central		Water			X	X	X	2	

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: 4:00pm 10/31/16	Company: TAN	Received by:	Date/Time: 11.1.16 0915	Company: TAST
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:

11/30/2016

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

Chain of Custody Record

490-114996 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

11/30/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-50093.1
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 #: 490-114996-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 11/22/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR GW - 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/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-11 (490-114996-1)	10/25/16	11:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-12 (490-114996-2)	10/25/16	15:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-13 (490-114996-3)	10/25/16	14:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-14 (490-114996-4)	10/25/16	13:00 Central		Water			X	X	1	Metals - run once, upload together.
Field Blank (490-114996-6)	10/25/16	16:05 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: RgJohnCl	Date/Time: 3:45 10/31/16	Company: TAN	Received by: Thomas Berg	Date/Time: 11/1/16 850	Company: 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:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-114996-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 114996
List Number: 1
Creator: Ngo, Phiet

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: 490-114996-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 114996
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 11/01/16 01:49 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: 490-114996-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 114996
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 11/01/16 03:20 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	18.0
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: Green Ash Pond CCR GW - Round 4

TestAmerica Job ID: 490-114996-1
SDG: Sebree Station, Green Ash Pond

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-114996-1	MW-11	85.8
490-114996-2	MW-12	87.7
490-114996-3	MW-13	91.7
490-114996-4	MW-14	85.8
490-114996-5	DUPE	82.1
490-114996-6	Field Blank	92.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
160-19783-B-2-B DU	Duplicate	84.9
LCS 160-277268/2-A	Lab Control Sample	74.4
LCS 160-277496/2-A	Lab Control Sample	93.7
MB 160-277268/1-A	Method Blank	86.9
MB 160-277496/1-A	Method Blank	96.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
160-19757-V-2-B DU	Duplicate	89.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-114996-1	MW-11	85.8	86.7
490-114996-2	MW-12	88.3	81.9
490-114996-3	MW-13	91.7	78.5
490-114996-4	MW-14	85.8	78.1
490-114996-5	DUPE	82.1	79.3
490-114996-6	Field Blank	92.9	84.1

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
160-19783-B-2-D DU	Duplicate	84.9	82.2
LCS 160-277276/2-A	Lab Control Sample	74.4	80.0
LCS 160-277524/2-A	Lab Control Sample	93.7	90.8
MB 160-277276/1-A	Method Blank	86.9	77.8
MB 160-277524/1-A	Method Blank	96.0	81.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
160-19757-V-2-D DU	Duplicate	89.5	85.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-120971-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR GW-Round 5

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

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:
3/23/2017 12:15:44 PM

Roxanne Cisneros, Senior Project Manager
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-120971-1	MW-11	Water	01/26/17 12:25	01/28/17 08:50
490-120971-2	MW-12	Water	01/27/17 12:45	01/28/17 08:50
490-120971-3	MW-13	Water	01/27/17 11:50	01/28/17 08:50
490-120971-4	MW-14	Water	01/27/17 10:40	01/28/17 08:50
490-120971-5	DUPE	Water	01/26/17 12:50	01/28/17 08:50
490-120971-6	FIELD BLANK	Water	01/27/17 13:30	01/28/17 08:50

Job ID: 490-120971-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-120971-1

Comments
No additional comments.

Receipt
The samples were received on 1/28/2017 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.4º C, 0.4º C and 3.9º C.

HPLC/IC
Method(s) 9056A: The following samples was diluted due to the nature of the sample matrix: MW-11 (490-120971-1), MW-12 (490-120971-2), MW-13 (490-120971-3), MW-14 (490-120971-4) and DUPE (490-120971-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-404493 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 method blank for analytical batch 490-404493 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 490-404493 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.

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 160-291025: The Ba carrier recovery is outside the upper control limit (110%) for the following sample: DUPE (490-120971-5) and FIELD BLANK (490-120971-6). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method(s) PrecSep_0: Radium 228 Prep Batch 160-291041: The Ba carrier recovery is outside the upper control limit (110%) for the following sample: DUPE (490-120971-5) and FIELD BLANK (490-120971-6). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-294455: Insufficient sample volume was available to perform a sample duplicate (DU). An LCS/LCSD was prepared to demonstrate batch precision. MW-11 (490-120971-1), MW-12 (490-120971-2), MW-13 (490-120971-3), MW-14 (490-120971-4), DUPE (490-120971-5) and FIELD BLANK (490-120971-6)

Method(s) PrecSep-21: Radium-226 Prep Batch 160-294461: Insufficient sample volume was available to perform a sample duplicate (DU). An LCS/LCSD was prepared to demonstrate batch precision. MW-11 (490-120971-1), MW-12 (490-120971-2), MW-13 (490-120971-3), MW-14 (490-120971-4), DUPE (490-120971-5) and FIELD BLANK (490-120971-6)

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

Job ID: 490-120971-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

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

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
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
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.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-11

Date Collected: 01/26/17 12:25
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1880**	**B**	300	20.0	mg/L			01/30/17 17:04	100
Fluoride	**0.209**	**J**	1.00	0.0100	mg/L			01/30/17 16:46	1
Sulfate	**1060**		500	3.00	mg/L			01/30/17 17:04	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0591**		0.0500	0.00959	mg/L		02/05/17 07:21	02/07/17 12:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000271**	**J B**	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 02:47	1
Arsenic	**0.00239**	**J**	0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:36	1
Barium	**0.0380**	**J**	0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 02:47	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 02:47	1
Boron	**0.920**	**J B**	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 14:11	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 02:47	1
Calcium	**276**		1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 02:47	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 02:47	1
Cobalt	**0.00131**	**J**	0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 02:47	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 02:47	1
Molybdenum	**0.00111**	**J**	0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 02:47	1
Selenium	**0.000354**	**J**	0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 14:11	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 02:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		01/30/17 08:11	01/30/17 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.08**		0.100	0.100	SU			01/31/17 10:18	1
Temperature	**19.5**		0.100	0.100	Degrees C			01/31/17 10:18	1
Total Dissolved Solids	**4930**		40.0	28.0	mg/L			01/28/17 17:50	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	**0.740**		0.164	0.177	1.00	0.123	pCi/L	02/25/17 13:24	03/20/17 20:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:24*	*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	**0.919**		0.286	0.299	1.00	0.382	pCi/L	02/25/17 13:02	03/13/17 14:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*1*

Client Sample ID: MW-11

Date Collected: 01/26/17 12:25
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-1

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*90.1*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*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	**1.66**		0.330	0.347	5.00	0.382	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-12

Date Collected: 01/27/17 12:45
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24.6	J B	30.0	2.00	mg/L			01/30/17 18:15	10
Fluoride	0.520	J	1.00	0.0100	mg/L			01/30/17 17:58	1
Sulfate	54.0		50.0	0.300	mg/L			01/30/17 18:15	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0215	J	0.0500	0.00959	mg/L		02/05/17 07:21	02/07/17 12:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000231	J B	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 02:49	1
Arsenic	0.00229	J	0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:38	1
Barium	0.118	J	0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 02:49	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 02:49	1
Boron	0.335	J B	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 14:16	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 02:49	1
Calcium	87.7		1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 02:49	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 02:49	1
Cobalt	0.000163	J	0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 02:49	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 02:49	1
Molybdenum	0.0100		0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 02:49	1
Selenium	ND		0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 14:16	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 02:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		01/30/17 08:11	01/30/17 16:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.35		0.100	0.100	SU			01/31/17 10:18	1
Temperature	19.5		0.100	0.100	Degrees C			01/31/17 10:18	1
Total Dissolved Solids	679		10.0	7.00	mg/L			01/28/17 17:50	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	0.201		0.0956	0.0972	1.00	0.115	pCi/L	02/25/17 13:24	03/20/17 20:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:24*	*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	0.160	U	0.208	0.209	1.00	0.346	pCi/L	02/25/17 13:02	03/13/17 14:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*1*

Client Sample ID: MW-12

Date Collected: 01/27/17 12:45
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-2

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*90.1*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*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	**0.361**		0.229	0.230	5.00	0.346	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-13

Date Collected: 01/27/17 11:50
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.2**	**J B**	30.0	2.00	mg/L			01/30/17 18:51	10
Fluoride	**0.342**	**J**	1.00	0.0100	mg/L			01/30/17 18:33	1
Sulfate	**96.2**		50.0	0.300	mg/L			01/30/17 18:51	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0113**	**J**	0.0500	0.00959	mg/L		02/05/17 07:21	02/07/17 12:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000293**	**J B**	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 02:55	1
Arsenic	**0.000648**	**J**	0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:41	1
Barium	**0.0747**	**J**	0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 02:55	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 02:55	1
Boron	**0.0437**	**J B**	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 14:21	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 02:55	1
Calcium	**82.8**		1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 02:55	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 02:55	1
Cobalt	**0.000720**	**J**	0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 02:55	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 02:55	1
Molybdenum	**0.00463**	**J**	0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 02:55	1
Selenium	ND		0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 14:21	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 02:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		01/30/17 08:11	01/30/17 17:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.92**		0.100	0.100	SU			01/31/17 10:18	1
Temperature	**19.6**		0.100	0.100	Degrees C			01/31/17 10:18	1
Total Dissolved Solids	**678**		10.0	7.00	mg/L			01/28/17 17:50	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	0.0895	U	0.0673	0.0678	1.00	0.0929	pCi/L	02/25/17 13:24	03/20/17 20:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:24*	*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	0.128	U	0.198	0.198	1.00	0.333	pCi/L	02/25/17 13:02	03/13/17 14:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13
Date Collected: 01/27/17 11:50
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-3
Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*88.6*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*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	0.217	U	0.209	0.209	5.00	0.333	pCi/L		03/21/17 14:31	1

Client Sample ID: MW-14

Date Collected: 01/27/17 10:40
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**191**	**B**	60.0	4.00	mg/L			01/30/17 19:27	20
Fluoride	**0.405**	**J**	1.00	0.0100	mg/L			01/30/17 19:09	1
Sulfate	**221**		100	0.600	mg/L			01/30/17 19:27	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0486**	**J**	0.0500	0.00959	mg/L		02/05/17 07:21	02/07/17 12:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000228**	**J B**	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 02:57	1
Arsenic	**0.000665**	**J**	0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:47	1
Barium	**0.0663**	**J**	0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 02:57	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 02:57	1
Boron	**0.250**	**J B**	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 14:26	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 02:57	1
Calcium	**183**		1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 02:57	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 02:57	1
Cobalt	**0.000252**	**J**	0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 02:57	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 02:57	1
Molybdenum	ND		0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 02:57	1
Selenium	ND		0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 14:26	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 02:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/01/17 11:37	02/01/17 16:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.20**		0.100	0.100	SU			01/31/17 10:18	1
Temperature	**19.7**		0.100	0.100	Degrees C			01/31/17 10:18	1
Total Dissolved Solids	**1150**		10.0	7.00	mg/L			01/28/17 17:50	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	**0.659**		0.144	0.156	1.00	0.0961	pCi/L	02/25/17 13:24	03/20/17 20:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:25*	*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	**0.648**		0.239	0.246	1.00	0.327	pCi/L	02/25/17 13:02	03/13/17 14:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*1*

Client Sample ID: MW-14

Date Collected: 01/27/17 10:40
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-4

Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*86.7*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*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**		0.279	0.291	5.00	0.327	pCi/L		03/21/17 14:31	1

Client Sample ID: DUPE

Date Collected: 01/26/17 12:50
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1900**	**B**	300	20.0	mg/L			01/30/17 20:03	100
Fluoride	**0.215**	**J**	1.00	0.0100	mg/L			01/30/17 19:45	1
Sulfate	**1100**		500	3.00	mg/L			01/30/17 20:03	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0561**		0.0500	0.00959	mg/L		02/05/17 07:21	02/07/17 12:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000221**	**J B**	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 02:59	1
Arsenic	**0.00145**	**J**	0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:49	1
Barium	**0.0364**	**J**	0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 02:59	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 02:59	1
Boron	**0.933**	**J B**	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 14:45	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 02:59	1
Calcium	**276**		1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 02:59	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 02:59	1
Cobalt	**0.000910**	**J**	0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 02:59	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 02:59	1
Molybdenum	**0.00154**	**J**	0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 02:59	1
Selenium	**0.000361**	**J**	0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 14:45	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 02:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/01/17 11:37	02/01/17 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.08**		0.100	0.100	SU			01/31/17 10:28	1
Temperature	**20.1**		0.100	0.100	Degrees C			01/31/17 10:28	1
Total Dissolved Solids	**4860**		40.0	28.0	mg/L			01/28/17 17:50	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	**0.771**		0.165	0.179	1.00	0.114	pCi/L	02/25/17 13:24	03/20/17 20:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:25*	*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	**1.07**		0.271	0.288	1.00	0.321	pCi/L	02/25/17 13:02	03/13/17 14:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:07*	*1*

Client Sample ID: DUPE

Date Collected: 01/26/17 12:50
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-5

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.8		40 - 110	02/25/17 13:02	03/13/17 14:07	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	1.84		0.317	0.339	5.00	0.321	pCi/L		03/21/17 14:31	1

Client Sample ID: FIELD BLANK

Date Collected: 01/27/17 13:30
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.944**	**J B**	3.00	0.200	mg/L			01/30/17 20:21	1
Fluoride	ND		1.00	0.0100	mg/L			01/30/17 20:21	1
Sulfate	**0.295**	**J**	5.00	0.0300	mg/L			01/30/17 20:21	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		02/05/17 07:21	02/07/17 12:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000275**	**J B**	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 03:02	1
Arsenic	**0.000132**	**J**	0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:51	1
Barium	ND		0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 03:02	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 03:02	1
Boron	**0.00535**	**J B**	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 14:51	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 03:02	1
Calcium	**0.133**	**J**	1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 03:02	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 03:02	1
Cobalt	ND		0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 03:02	1
Lead	**0.000262**	**J**	0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 03:02	1
Molybdenum	ND		0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 03:02	1
Selenium	ND		0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 14:51	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 03:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/01/17 11:37	02/01/17 17:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.78**		0.100	0.100	SU			01/31/17 10:28	1
Temperature	**20.1**		0.100	0.100	Degrees C			01/31/17 10:28	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			01/28/17 17:50	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	-0.00687	U	0.0508	0.0508	1.00	0.110	pCi/L	02/25/17 13:24	03/20/17 20:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:25*	*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	0.224	U	0.212	0.213	1.00	0.343	pCi/L	02/25/17 13:02	03/13/17 14:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:08*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 01/27/17 13:30
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-6

Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*89.7*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:08*	*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	0.218	U	0.218	0.219	5.00	0.343	pCi/L		03/21/17 14:31	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-404493/12
Matrix: Water
Analysis Batch: 404493

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3838	J	3.00	0.200	mg/L			01/30/17 12:54	1
Fluoride	ND		1.00	0.0100	mg/L			01/30/17 12:54	1
Sulfate	ND		5.00	0.0300	mg/L			01/30/17 12:54	1

Lab Sample ID: LCS 490-404493/13
Matrix: Water
Analysis Batch: 404493

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	9.740		mg/L		97	80 - 120
Fluoride	1.00	1.007		mg/L		101	80 - 120
Sulfate	10.0	9.949		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-404493/14
Matrix: Water
Analysis Batch: 404493

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	9.919		mg/L		99	80 - 120	2	20
Fluoride	1.00	1.013		mg/L		101	80 - 120	1	20
Sulfate	10.0	9.885		mg/L		99	80 - 120	1	20

Lab Sample ID: 490-120934-F-1 MS
Matrix: Water
Analysis Batch: 404493

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	701	E B	2.00	560.7	E 4	mg/L		-6990	80 - 120
Fluoride	2.83		0.200	2.443	4	mg/L		-191	80 - 120
Sulfate	699	E	2.00	552.8	E 4	mg/L		-7327	80 - 120

Lab Sample ID: 490-120934-F-1 MSD
Matrix: Water
Analysis Batch: 404493

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	701	E B	2.00	557.4	E 4	mg/L		-7154	80 - 120	1	20
Fluoride	2.83		0.200	2.434	4	mg/L		-196	80 - 120	0	20
Sulfate	699	E	2.00	549.9	E 4	mg/L		-7473	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-201816/1-A
Matrix: Water
Analysis Batch: 202081

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 201816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		02/05/17 07:21	02/07/17 11:17	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-201816/2-A
Matrix: Water
Analysis Batch: 202081

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 201816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9958		mg/L		100	80 - 120

Lab Sample ID: LCSD 180-201816/3-A
Matrix: Water
Analysis Batch: 202081

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 201816

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9855		mg/L		99	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-201817/1-A
Matrix: Water
Analysis Batch: 202566

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001480	J	0.00200	0.0000213	mg/L		02/05/17 07:24	02/09/17 02:30	1
Barium	ND		0.200	0.000270	mg/L		02/05/17 07:24	02/09/17 02:30	1
Beryllium	ND	^	0.00200	0.000102	mg/L		02/05/17 07:24	02/09/17 02:30	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/09/17 02:30	1
Calcium	ND		1.00	0.0412	mg/L		02/05/17 07:24	02/09/17 02:30	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/09/17 02:30	1
Cobalt	ND		0.00500	0.0000218	mg/L		02/05/17 07:24	02/09/17 02:30	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/09/17 02:30	1
Molybdenum	ND		0.0100	0.000873	mg/L		02/05/17 07:24	02/09/17 02:30	1
Thallium	ND		0.00100	0.0000360	mg/L		02/05/17 07:24	02/09/17 02:30	1

Lab Sample ID: MB 180-201817/1-A
Matrix: Water
Analysis Batch: 202567

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00500	0.000118	mg/L		02/05/17 07:24	02/10/17 03:15	1

Lab Sample ID: MB 180-201817/1-A
Matrix: Water
Analysis Batch: 202684

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00007700	J	0.00200	0.0000213	mg/L		02/05/17 07:24	02/11/17 13:40	1
Arsenic	ND		0.00500	0.000118	mg/L		02/05/17 07:24	02/11/17 13:40	1
Barium	ND		0.200	0.000270	mg/L		02/05/17 07:24	02/11/17 13:40	1
Beryllium	ND		0.00200	0.000102	mg/L		02/05/17 07:24	02/11/17 13:40	1
Boron	0.004136	J	1.00	0.00339	mg/L		02/05/17 07:24	02/11/17 13:40	1
Cadmium	ND		0.00100	0.000152	mg/L		02/05/17 07:24	02/11/17 13:40	1
Calcium	ND		1.00	0.0412	mg/L		02/05/17 07:24	02/11/17 13:40	1
Chromium	ND		0.00300	0.000339	mg/L		02/05/17 07:24	02/11/17 13:40	1
Cobalt	0.00003700	J	0.00500	0.0000218	mg/L		02/05/17 07:24	02/11/17 13:40	1
Lead	ND		0.00500	0.0000675	mg/L		02/05/17 07:24	02/11/17 13:40	1

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

Lab Sample ID: MB 180-201817/1-A
Matrix: Water
Analysis Batch: 202684

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0100	0.000873	mg/L		02/05/17 07:24	02/11/17 13:40	1
Selenium	ND		0.0100	0.000348	mg/L		02/05/17 07:24	02/11/17 13:40	1
Thallium	0.00004500	J	0.00100	0.0000360	mg/L		02/05/17 07:24	02/11/17 13:40	1

Lab Sample ID: LCS 180-201817/2-A
Matrix: Water
Analysis Batch: 202566

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4685		mg/L		94	80 - 120
Barium	2.00	1.884		mg/L		94	80 - 120
Beryllium	0.0500	0.04567	^	mg/L		91	80 - 120
Cadmium	0.0500	0.04958		mg/L		99	80 - 120
Calcium	50.0	46.92		mg/L		94	80 - 120
Chromium	0.200	0.1923		mg/L		96	80 - 120
Cobalt	0.500	0.5049		mg/L		101	80 - 120
Lead	0.0200	0.01844		mg/L		92	80 - 120
Molybdenum	1.00	0.9102		mg/L		91	80 - 120
Thallium	0.0500	0.04565		mg/L		91	80 - 120

Lab Sample ID: LCS 180-201817/2-A
Matrix: Water
Analysis Batch: 202567

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0400	0.03744		mg/L		94	80 - 120

Lab Sample ID: LCS 180-201817/2-A
Matrix: Water
Analysis Batch: 202684

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5783		mg/L		116	80 - 120
Arsenic	0.0400	0.04037		mg/L		101	80 - 120
Barium	2.00	2.259		mg/L		113	80 - 120
Beryllium	0.0500	0.05608		mg/L		112	80 - 120
Boron	1.00	1.014		mg/L		101	80 - 120
Cadmium	0.0500	0.05555		mg/L		111	80 - 120
Calcium	50.0	52.41		mg/L		105	80 - 120
Chromium	0.200	0.1763		mg/L		88	80 - 120
Cobalt	0.500	0.4979		mg/L		100	80 - 120
Lead	0.0200	0.02265		mg/L		113	80 - 120
Selenium	0.0100	0.01091		mg/L		109	80 - 120
Thallium	0.0500	0.05642		mg/L		113	80 - 120

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

Lab Sample ID: LCSD 180-201817/3-A
Matrix: Water
Analysis Batch: 202566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.4707		mg/L		94	80 - 120	0	20
Barium	2.00	1.893		mg/L		95	80 - 120	0	20
Beryllium	0.0500	0.04733	^	mg/L		95	80 - 120	4	20
Cadmium	0.0500	0.04958		mg/L		99	80 - 120	0	20
Calcium	50.0	47.54		mg/L		95	80 - 120	1	20
Chromium	0.200	0.1949		mg/L		97	80 - 120	1	20
Cobalt	0.500	0.5112		mg/L		102	80 - 120	1	20
Lead	0.0200	0.01886		mg/L		94	80 - 120	2	20
Molybdenum	1.00	0.9030		mg/L		90	80 - 120	1	20
Thallium	0.0500	0.04639		mg/L		93	80 - 120	2	20

Lab Sample ID: LCSD 180-201817/3-A
Matrix: Water
Analysis Batch: 202567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0400	0.03636		mg/L		91	80 - 120	3	20

Lab Sample ID: LCSD 180-201817/3-A
Matrix: Water
Analysis Batch: 202684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 201817

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5841		mg/L		117	80 - 120	1	20
Arsenic	0.0400	0.03891		mg/L		97	80 - 120	4	20
Barium	2.00	2.228		mg/L		111	80 - 120	1	20
Beryllium	0.0500	0.05419		mg/L		108	80 - 120	3	20
Boron	1.00	0.9827	J	mg/L		98	80 - 120	3	20
Cadmium	0.0500	0.05637		mg/L		113	80 - 120	1	20
Calcium	50.0	52.29		mg/L		105	80 - 120	0	20
Chromium	0.200	0.1714		mg/L		86	80 - 120	3	20
Cobalt	0.500	0.4799		mg/L		96	80 - 120	4	20
Lead	0.0200	0.02301		mg/L		115	80 - 120	2	20
Molybdenum	1.00	1.202		mg/L		120	80 - 120	1	20
Selenium	0.0100	0.01027		mg/L		103	80 - 120	6	20
Thallium	0.0500	0.05549		mg/L		111	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-404304/1-A
Matrix: Water
Analysis Batch: 404483

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404304

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		01/30/17 08:11	01/30/17 11:19	1

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

Lab Sample ID: LCS 490-404304/2-A
Matrix: Water
Analysis Batch: 404483

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 404304

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	1.004		ug/L		100	80 - 120		

Lab Sample ID: LCSD 490-404304/3-A
Matrix: Water
Analysis Batch: 404483

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 404304

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.9293		ug/L		93	80 - 120	8	20

Lab Sample ID: 490-120939-A-1-B MS
Matrix: Water
Analysis Batch: 404483

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 404304

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	1.159		ug/L		116	75 - 125		

Lab Sample ID: 490-120939-A-1-C MSD
Matrix: Water
Analysis Batch: 404483

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 404304

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.037		ug/L		104	75 - 125	11	20

Lab Sample ID: MB 490-405027/1-A
Matrix: Water
Analysis Batch: 405225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405027

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/01/17 11:37	02/01/17 16:42	1

Lab Sample ID: LCS 490-405027/2-A
Matrix: Water
Analysis Batch: 405225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405027

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.8824		ug/L		88	80 - 120		

Lab Sample ID: 490-120971-4 MS
Matrix: Water
Analysis Batch: 405225

Client Sample ID: MW-14
Prep Type: Total/NA
Prep Batch: 405027

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	1.001		ug/L		100	75 - 125		

Lab Sample ID: 490-120971-4 MSD
Matrix: Water
Analysis Batch: 405225

Client Sample ID: MW-14
Prep Type: Total/NA
Prep Batch: 405027

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9703		ug/L		97	75 - 125	3	20

Method: 9040C - pH

Lab Sample ID: LCS 490-404663/1
Matrix: Water
Analysis Batch: 404663

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	7.050		SU		101	98 - 103		

Lab Sample ID: 490-120971-4 DU
Matrix: Water
Analysis Batch: 404663

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.20			7.220		SU				0.3	20
Temperature	19.7			19.70		Degrees C				0	20

Lab Sample ID: LCS 490-404664/1
Matrix: Water
Analysis Batch: 404664

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	7.050		SU		101	98 - 103		

Lab Sample ID: 490-120971-6 DU
Matrix: Water
Analysis Batch: 404664

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.78			6.760		SU				0.3	20
Temperature	20.1			20.10		Degrees C				0	20

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

Lab Sample ID: MB 490-404213/1
Matrix: Water
Analysis Batch: 404213

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			01/28/17 17:50	1

Lab Sample ID: LCS 490-404213/2
Matrix: Water
Analysis Batch: 404213

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	108.0		mg/L		108	90 - 110		

Lab Sample ID: 490-120971-1 DU
Matrix: Water
Analysis Batch: 404213

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	4930			4652		mg/L				6	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-294461/1-A
Matrix: Water
Analysis Batch: 298258

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294461

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01346	U	0.0598	0.0598	1.00	0.125	pCi/L	02/25/17 13:24	03/20/17 20:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*02/25/17 13:24*	*03/20/17 20:23*	*1*

Lab Sample ID: LCS 160-294461/2-A
Matrix: Water
Analysis Batch: 298258

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294461

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	10.72		1.11	1.00	0.104	pCi/L	94	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: LCSD 160-294461/3-A
Matrix: Water
Analysis Batch: 298258

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294461

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	10.27		1.07	1.00	0.120	pCi/L	90	68 - 137	0.21	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-294455/1-A
Matrix: Water
Analysis Batch: 297320

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294455

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2095	U	0.207	0.208	1.00	0.335	pCi/L	02/25/17 13:02	03/13/17 14:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:06*	*1*
Y Carrier	*87.9*		*40 - 110*	*02/25/17 13:02*	*03/13/17 14:06*	*1*

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

Lab Sample ID: LCS 160-294455/2-A
Matrix: Water
Analysis Batch: 297320

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294455

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.7	12.84		1.37	1.00	0.312	pCi/L	94	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*93.1*		*40 - 110*

Lab Sample ID: LCSD 160-294455/3-A
Matrix: Water
Analysis Batch: 297320

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294455

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.7	14.20		1.50	1.00	0.315	pCi/L	103	56 - 140	0.47	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*
Y Carrier	*86.7*		*40 - 110*

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

Lab Sample ID: 400-133961-A-4 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	-0.0851	U		0.1961	U	0.234	5.00	0.379	pCi/L			0.57	

HPLC/IC

Analysis Batch: 404493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	9056A	
490-120971-1	MW-11	Total/NA	Water	9056A	
490-120971-2	MW-12	Total/NA	Water	9056A	
490-120971-2	MW-12	Total/NA	Water	9056A	
490-120971-3	MW-13	Total/NA	Water	9056A	
490-120971-3	MW-13	Total/NA	Water	9056A	
490-120971-4	MW-14	Total/NA	Water	9056A	
490-120971-4	MW-14	Total/NA	Water	9056A	
490-120971-5	DUPE	Total/NA	Water	9056A	
490-120971-5	DUPE	Total/NA	Water	9056A	
490-120971-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-404493/12	Method Blank	Total/NA	Water	9056A	
LCS 490-404493/13	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-404493/14	Lab Control Sample Dup	Total/NA	Water	9056A	
490-120934-F-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-120934-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 201816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total Recoverable	Water	3005A	
490-120971-2	MW-12	Total Recoverable	Water	3005A	
490-120971-3	MW-13	Total Recoverable	Water	3005A	
490-120971-4	MW-14	Total Recoverable	Water	3005A	
490-120971-5	DUPE	Total Recoverable	Water	3005A	
490-120971-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-201816/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-201816/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-201816/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 201817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total Recoverable	Water	3005A	
490-120971-2	MW-12	Total Recoverable	Water	3005A	
490-120971-3	MW-13	Total Recoverable	Water	3005A	
490-120971-4	MW-14	Total Recoverable	Water	3005A	
490-120971-5	DUPE	Total Recoverable	Water	3005A	
490-120971-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-201817/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-201817/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-201817/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 202081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total Recoverable	Water	6010C	201816
490-120971-2	MW-12	Total Recoverable	Water	6010C	201816
490-120971-3	MW-13	Total Recoverable	Water	6010C	201816
490-120971-4	MW-14	Total Recoverable	Water	6010C	201816
490-120971-5	DUPE	Total Recoverable	Water	6010C	201816

Metals (Continued)

Analysis Batch: 202081 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-6	FIELD BLANK	Total Recoverable	Water	6010C	201816
MB 180-201816/1-A	Method Blank	Total Recoverable	Water	6010C	201816
LCS 180-201816/2-A	Lab Control Sample	Total Recoverable	Water	6010C	201816
LCSD 180-201816/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	201816

Analysis Batch: 202566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total Recoverable	Water	6020A	201817
490-120971-2	MW-12	Total Recoverable	Water	6020A	201817
490-120971-3	MW-13	Total Recoverable	Water	6020A	201817
490-120971-4	MW-14	Total Recoverable	Water	6020A	201817
490-120971-5	DUPE	Total Recoverable	Water	6020A	201817
490-120971-6	FIELD BLANK	Total Recoverable	Water	6020A	201817
MB 180-201817/1-A	Method Blank	Total Recoverable	Water	6020A	201817
LCS 180-201817/2-A	Lab Control Sample	Total Recoverable	Water	6020A	201817
LCSD 180-201817/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	201817

Analysis Batch: 202567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total Recoverable	Water	6020A	201817
490-120971-2	MW-12	Total Recoverable	Water	6020A	201817
490-120971-3	MW-13	Total Recoverable	Water	6020A	201817
490-120971-4	MW-14	Total Recoverable	Water	6020A	201817
490-120971-5	DUPE	Total Recoverable	Water	6020A	201817
490-120971-6	FIELD BLANK	Total Recoverable	Water	6020A	201817
MB 180-201817/1-A	Method Blank	Total Recoverable	Water	6020A	201817
LCS 180-201817/2-A	Lab Control Sample	Total Recoverable	Water	6020A	201817
LCSD 180-201817/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	201817

Analysis Batch: 202684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total Recoverable	Water	6020A	201817
490-120971-2	MW-12	Total Recoverable	Water	6020A	201817
490-120971-3	MW-13	Total Recoverable	Water	6020A	201817
490-120971-4	MW-14	Total Recoverable	Water	6020A	201817
490-120971-5	DUPE	Total Recoverable	Water	6020A	201817
490-120971-6	FIELD BLANK	Total Recoverable	Water	6020A	201817
MB 180-201817/1-A	Method Blank	Total Recoverable	Water	6020A	201817
LCS 180-201817/2-A	Lab Control Sample	Total Recoverable	Water	6020A	201817
LCSD 180-201817/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	201817

Prep Batch: 404304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	7470A	
490-120971-2	MW-12	Total/NA	Water	7470A	
490-120971-3	MW-13	Total/NA	Water	7470A	
MB 490-404304/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-404304/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-404304/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-120939-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-120939-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 404483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-404304/1-A	Method Blank	Total/NA	Water	7470A	404304
LCS 490-404304/2-A	Lab Control Sample	Total/NA	Water	7470A	404304
LCSD 490-404304/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	404304
490-120939-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	404304
490-120939-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	404304

Analysis Batch: 404590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	7470A	404304
490-120971-2	MW-12	Total/NA	Water	7470A	404304
490-120971-3	MW-13	Total/NA	Water	7470A	404304

Prep Batch: 405027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-4	MW-14	Total/NA	Water	7470A	
490-120971-5	DUPE	Total/NA	Water	7470A	
490-120971-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-405027/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-405027/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-120971-4 MS	MW-14	Total/NA	Water	7470A	
490-120971-4 MSD	MW-14	Total/NA	Water	7470A	

Analysis Batch: 405225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-4	MW-14	Total/NA	Water	7470A	405027
490-120971-5	DUPE	Total/NA	Water	7470A	405027
490-120971-6	FIELD BLANK	Total/NA	Water	7470A	405027
MB 490-405027/1-A	Method Blank	Total/NA	Water	7470A	405027
LCS 490-405027/2-A	Lab Control Sample	Total/NA	Water	7470A	405027
490-120971-4 MS	MW-14	Total/NA	Water	7470A	405027
490-120971-4 MSD	MW-14	Total/NA	Water	7470A	405027

General Chemistry

Analysis Batch: 404213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	SM 2540C	
490-120971-2	MW-12	Total/NA	Water	SM 2540C	
490-120971-3	MW-13	Total/NA	Water	SM 2540C	
490-120971-4	MW-14	Total/NA	Water	SM 2540C	
490-120971-5	DUPE	Total/NA	Water	SM 2540C	
490-120971-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-404213/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-404213/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-120971-1 DU	MW-11	Total/NA	Water	SM 2540C	

Analysis Batch: 404663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	9040C	
490-120971-2	MW-12	Total/NA	Water	9040C	
490-120971-3	MW-13	Total/NA	Water	9040C	
490-120971-4	MW-14	Total/NA	Water	9040C	
LCS 490-404663/1	Lab Control Sample	Total/NA	Water	9040C	

General Chemistry (Continued)

Analysis Batch: 404663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-4 DU	MW-14	Total/NA	Water	9040C	

Analysis Batch: 404664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-5	DUPE	Total/NA	Water	9040C	
490-120971-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-404664/1	Lab Control Sample	Total/NA	Water	9040C	
490-120971-6 DU	FIELD BLANK	Total/NA	Water	9040C	

Rad

Prep Batch: 294455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	PrecSep_0	
490-120971-2	MW-12	Total/NA	Water	PrecSep_0	
490-120971-3	MW-13	Total/NA	Water	PrecSep_0	
490-120971-4	MW-14	Total/NA	Water	PrecSep_0	
490-120971-5	DUPE	Total/NA	Water	PrecSep_0	
490-120971-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-294455/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-294455/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-294455/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 294461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-120971-1	MW-11	Total/NA	Water	PrecSep-21	
490-120971-2	MW-12	Total/NA	Water	PrecSep-21	
490-120971-3	MW-13	Total/NA	Water	PrecSep-21	
490-120971-4	MW-14	Total/NA	Water	PrecSep-21	
490-120971-5	DUPE	Total/NA	Water	PrecSep-21	
490-120971-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-294461/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-294461/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-294461/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Client Sample ID: MW-11

Date Collected: 01/26/17 12:25
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-1

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			404493	01/30/17 16:46	JHS	TAL NSH
Total/NA	Analysis	9056A		100			404493	01/30/17 17:04	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	201816	02/05/17 07:21	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			202081	02/07/17 12:00	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202566	02/09/17 02:47	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202567	02/10/17 03:36	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202684	02/11/17 14:11	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	404304	01/30/17 08:11	CAH	TAL NSH
Total/NA	Analysis	7470A		1			404590	01/30/17 16:56	LCS	TAL NSH
Total/NA	Analysis	9040C		1			404663	01/31/17 10:18	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	404213	01/28/17 17:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1003.70 mL	1.0 g	294461	02/25/17 13:24	RTM	TAL SL
Total/NA	Analysis	903.0		1			298258	03/20/17 20:24	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1003.70 mL	1.0 g	294455	02/25/17 13:02	RTM	TAL SL
Total/NA	Analysis	904.0		1			297320	03/13/17 14:07	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 01/27/17 12:45
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-2

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			404493	01/30/17 17:58	JHS	TAL NSH
Total/NA	Analysis	9056A		10			404493	01/30/17 18:15	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	201816	02/05/17 07:21	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			202081	02/07/17 12:21	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202566	02/09/17 02:49	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202567	02/10/17 03:38	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202684	02/11/17 14:16	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	404304	01/30/17 08:11	CAH	TAL NSH
Total/NA	Analysis	7470A		1			404590	01/30/17 16:58	LCS	TAL NSH
Total/NA	Analysis	9040C		1			404663	01/31/17 10:18	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404213	01/28/17 17:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.21 mL	1.0 g	294461	02/25/17 13:24	RTM	TAL SL
Total/NA	Analysis	903.0		1			298258	03/20/17 20:24	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1000.21 mL	1.0 g	294455	02/25/17 13:02	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 01/27/17 12:45
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-2

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	904.0		1			297320	03/13/17 14:07	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: MW-13

Date Collected: 01/27/17 11:50
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-3

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			404493	01/30/17 18:33	JHS	TAL NSH
Total/NA	Analysis	9056A		10			404493	01/30/17 18:51	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	201816	02/05/17 07:21	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			202081	02/07/17 12:26	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202566	02/09/17 02:55	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202567	02/10/17 03:41	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202684	02/11/17 14:21	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	404304	01/30/17 08:11	CAH	TAL NSH
Total/NA	Analysis	7470A		1			404590	01/30/17 17:01	LCS	TAL NSH
Total/NA	Analysis	9040C		1			404663	01/31/17 10:18	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404213	01/28/17 17:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1003.11 mL	1.0 g	294461	02/25/17 13:24	RTM	TAL SL
Total/NA	Analysis	903.0		1			298258	03/20/17 20:24	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1003.11 mL	1.0 g	294455	02/25/17 13:02	RTM	TAL SL
Total/NA	Analysis	904.0		1			297320	03/13/17 14:07	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 01/27/17 10:40
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-4

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			404493	01/30/17 19:09	JHS	TAL NSH
Total/NA	Analysis	9056A		20			404493	01/30/17 19:27	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	201816	02/05/17 07:21	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			202081	02/07/17 12:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202566	02/09/17 02:57	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202567	02/10/17 03:47	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT

Client Sample ID: MW-14

Date Collected: 01/27/17 10:40
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020A		1			202684	02/11/17 14:26	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405027	02/01/17 11:37	LCS	TAL NSH
Total/NA	Analysis	7470A		1			405225	02/01/17 16:52	LCS	TAL NSH
Total/NA	Analysis	9040C		1			404663	01/31/17 10:18	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404213	01/28/17 17:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1005.93 mL	1.0 g	294461	02/25/17 13:24	RTM	TAL SL
Total/NA	Analysis	903.0		1			298258	03/20/17 20:25	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1005.93 mL	1.0 g	294455	02/25/17 13:02	RTM	TAL SL
Total/NA	Analysis	904.0		1			297320	03/13/17 14:07	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			298860	03/21/17 14:31	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 01/26/17 12:50
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-5

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			404493	01/30/17 19:45	JHS	TAL NSH
Total/NA	Analysis	9056A		100			404493	01/30/17 20:03	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	201816	02/05/17 07:21	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			202081	02/07/17 12:37	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202566	02/09/17 02:59	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202567	02/10/17 03:49	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202684	02/11/17 14:45	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405027	02/01/17 11:37	LCS	TAL NSH
Total/NA	Analysis	7470A		1			405225	02/01/17 17:00	LCS	TAL NSH
Total/NA	Analysis	9040C		1			404664	01/31/17 10:28	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	404213	01/28/17 17:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1006.37 mL	1.0 g	294461	02/25/17 13:24	RTM	TAL SL
Total/NA	Analysis	903.0		1			298258	03/20/17 20:25	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1006.37 mL	1.0 g	294455	02/25/17 13:02	RTM	TAL SL
Total/NA	Analysis	904.0		1			297320	03/13/17 14:07	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: 01/27/17 13:30
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-6

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			404493	01/30/17 20:21	JHS	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: FIELD BLANK

Date Collected: 01/27/17 13:30
Date Received: 01/28/17 08:50

Lab Sample ID: 490-120971-6

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	201816	02/05/17 07:21	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			202081	02/07/17 12:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202566	02/09/17 03:02	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202567	02/10/17 03:51	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	201817	02/05/17 07:24	RJR	TAL PIT
Total Recoverable	Analysis	6020A		1			202684	02/11/17 14:51	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405027	02/01/17 11:37	LCS	TAL NSH
Total/NA	Analysis	7470A		1			405225	02/01/17 17:03	LCS	TAL NSH
Total/NA	Analysis	9040C		1			404664	01/31/17 10:28	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404213	01/28/17 17:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1002.03 mL	1.0 g	294461	02/25/17 13:24	RTM	TAL SL
Total/NA	Analysis	903.0		1			298258	03/20/17 20:25	MLK	TAL SL
Total/NA	Prep	PrecSep_0			1002.03 mL	1.0 g	294455	02/25/17 13:02	RTM	TAL SL
Total/NA	Analysis	904.0		1			297321	03/13/17 14:08	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: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17 *
North Carolina (WW/SW)	State Program	4	434	12-31-17
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-120971-01 Chain of Custody

Cooler Received/Opened On 01-28-2017 @ 08:50

Time Samples Removed From Cooler 1155 Time Samples Placed In Storage 1308 (2 Hour Window)

1. Tracking # 7734 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 160656838 pH Strip Lot HC693124 Chlorine Strip Lot 081116K

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: 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) KA

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) SCN

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) SCN

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) SCN

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

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
120971

COOLER RECEIPT FORM

Cooler Received/Opened On 1/28/2017 @ 0850

Time Samples Removed From Cooler 1155 Time Samples Placed In Storage 1308 (2 Hour Window)

1. Tracking # 7790 (last 4 digits, FedEx) Courier: ____FedEx____

IR Gun ID 31470368 pH Strip Lot HC697824 Chlorine Strip Lot 0511164

2. Temperature of rep. sample or temp blank when opened: 3.9 *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: 2 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) HKG

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

3/23/2017

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
120971

COOLER RECEIPT FORM

Cooler Received/Opened On 1/28/2017 @ 0850

Time Samples Removed From Cooler 1155 Time Samples Placed In Storage 1300 (2 Hour Window)

1. Tracking # 7767 (last 4 digits, FedEx) Courier: ____FedEx____

IR Gun ID 31470368 pH Strip Lot HC693124 Chlorine Strip Lot 0816K

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: 2 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) HKG

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

3/23/2017

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.

3/23/2017

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 1/27/2017**	490-62474-18049.1
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: Green Ash Pond CCR Groundwater-Round 5	☐ 1 week			
Site: Sebree Station, Green Ash Pond	☐ 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	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-11	1/26/17	1225	G	Water	6	N	N	x	x	x	x	
MW-12	1/27/17	1245	G	Water	6	N	N	x	x	x	x	
MW-13	1/27/17	1150	G	Water	6	N	N	x	x	x	x	
MW-14	1/27/17	1040	G	Water	6	N	N	x	x	x	x	
DUPE	1/26/17	1250	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	1/27/17	1330	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

490-120971

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: Greg Dick	Company: BREC	Date/Time: 1/27/2017 1630	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 04,39,04	Date/Time: 1/28/17 0850	

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Loc: 490
120971

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

Meg Dick
BREC
1630

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

Chain of Custody Record

490-120971 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-53156.1
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 #: 490-120971-1
Address: 13715 Rider Trail North,	Due Date Requested: 2/27/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR GW-Round 5	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)	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-11 (490-120971-1)	1/26/17	12:25 Eastern		Water			X	X	X	2	Historical Review required
MW-12 (490-120971-2)	1/27/17	12:45 Eastern		Water			X	X	X	2	Historical Review required
MW-13 (490-120971-3)	1/27/17	11:50 Eastern		Water			X	X	X	2	Historical Review required
MW-14 (490-120971-4)	1/27/17	10:40 Eastern		Water			X	X	X	2	Historical Review required
DUPE (490-120971-5)	1/26/17	12:50 Eastern		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-120971-6)	1/27/17	13:30 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 *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: 1-30-17	Company: TAL	Received by:	Date/Time: 1-31-17 0910	Company: TAS+L
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

490-120971 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

157.1

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)	Job #: 490-120971-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 2/22/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Green Ash Pond CCR GW-Round 5	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)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-11 (490-120971-1)	1/26/17	12:25 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-12 (490-120971-2)	1/27/17	12:45 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-13 (490-120971-3)	1/27/17	11:50 Eastern		Water			X	X	1	Metals - run once, upload together.
MW-14 (490-120971-4)	1/27/17	10:40 Eastern		Water			X	X	1	Metals - run once, upload together.
DUPE (490-120971-5)	1/26/17	12:50 Eastern		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-120971-6)	1/27/17	13:30 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:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		1-30-17	TAN	D Watson	1-31-17	TAL
2					850	
3						

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

3/23/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-120971-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 120971
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	0.4,3.9,0.4
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?	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: 490-120971-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 120971
List Number: 3
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 01/31/17 03:27 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: 490-120971-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 120971
List Number: 2
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 01/31/17 12:43 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	18.0
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: Green Ash Pond CCR GW-Round 5

TestAmerica Job ID: 490-120971-1
SDG: Sebree Station, Green Ash Pond

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-120971-1	MW-11	92.3
490-120971-2	MW-12	98.5
490-120971-3	MW-13	97.1
490-120971-4	MW-14	102
490-120971-5	DUPE	92.9
490-120971-6	FIELD BLANK	97.3
LCS 160-294461/2-A	Lab Control Sample	101
LCSD 160-294461/3-A	Lab Control Sample Dup	103
MB 160-294461/1-A	Method Blank	102

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-120971-1	MW-11	92.3	90.1
490-120971-2	MW-12	98.5	90.1
490-120971-3	MW-13	97.1	88.6
490-120971-4	MW-14	102	86.7
490-120971-5	DUPE	92.9	90.8
490-120971-6	FIELD BLANK	97.3	89.7
LCS 160-294455/2-A	Lab Control Sample	101	93.1
LCSD 160-294455/3-A	Lab Control Sample Dup	103	86.7
MB 160-294455/1-A	Method Blank	102	87.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-127756-1
TestAmerica SDG: SEBREE STATION - GREEN ASH POND
Client Project/Site: Green Ash Pond CCR Event 6
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
6/20/2017 3:01:20 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-127756-1	MW-11	Ground Water	05/01/17 11:00	05/04/17 09:45
490-127756-2	MW-12	Ground Water	05/01/17 15:45	05/04/17 09:45
490-127756-3	MW-13	Ground Water	05/01/17 14:30	05/04/17 09:45
490-127756-4	MW-14	Ground Water	05/01/17 13:15	05/04/17 09:45
490-127756-5	DUPE	Water	05/01/17 12:00	05/04/17 09:45
490-127756-6	FIELD BLANK	Water	05/01/17 16:23	05/04/17 09:45

Job ID: 490-127756-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-127756-1

Comments
No additional comments.

Receipt
The samples were received on 5/4/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.7º C and 1.9º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-430555 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-430936 were outside control limits for chloride and 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 method blank for analytical batch 490-430936 contained chloride and fluoride 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-11 (490-127756-1), MW-12 (490-127756-2), MW-13 (490-127756-3), MW-14 (490-127756-4), DUPE (490-127756-5), (490-128738-B-2), (490-128738-B-2 MS) and (490-128738-B-2 MSD). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-431114 were outside control limits sulfate and/or chloride. 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 method blank for analytical batch 490-431114 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.

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 160-307831: 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-11 (490-127756-1), MW-12 (490-127756-2), MW-13 (490-127756-3), MW-14 (490-127756-4), DUPE (490-127756-5) and FIELD BLANK (490-127756-6)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-307830: 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-11 (490-127756-1), MW-12 (490-127756-2), MW-13 (490-127756-3), MW-14 (490-127756-4), DUPE (490-127756-5) and FIELD BLANK (490-127756-6)

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

Metals
Method(s) 6020A: The serial dilution performed for the following sample associated with batch 213518 was outside of the control limits for cobalt and antimony.: MW-11 (490-127756-1)

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

Job ID: 490-127756-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

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: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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-11

Date Collected: 05/01/17 11:00
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1910	B	600	40.0	mg/L			05/18/17 01:28	200
Fluoride	0.514	J	5.00	0.0500	mg/L			05/18/17 01:11	5
Sulfate	1010	B	1000	6.00	mg/L			05/18/17 14:58	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0545		0.0500	0.00959	mg/L		06/02/17 18:53	06/06/17 18:55	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		06/07/17 14:54	06/16/17 02:47	1
Arsenic	0.00291	J B	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 02:47	1
Barium	0.0395	J	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 02:47	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 02:47	1
Boron	0.754	J B	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 02:47	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 02:47	1
Calcium	326	B	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 02:47	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 02:47	1
Cobalt	0.00129	J	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 02:47	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 02:47	1
Molybdenum	0.00148	J	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 02:47	1
Selenium	0.000369	J B	0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 02:47	1
Thallium	0.0000390	J	0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 02:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1	0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.00		0.100	0.100	SU			05/09/17 11:09	1
Temperature	22.2		0.100	0.100	Degrees C			05/09/17 11:09	1
Total Dissolved Solids	4830		100	70.0	mg/L			05/06/17 12:25	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	0.757		0.168	0.181	1.00	0.116	pCi/L	05/09/17 11:04	05/31/17 08:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*05/09/17 11:04*	*05/31/17 08:30*	*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	1.42		0.337	0.361	1.00	0.393	pCi/L	05/09/17 11:25	05/23/17 11:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:05*	*1*

Client Sample ID: MW-11
Date Collected: 05/01/17 11:00
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-1
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	76.6		40 - 110	05/09/17 11:25	05/23/17 11:05	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	2.18		0.376	0.404	5.00	0.393	pCi/L		05/31/17 14:25	1

Client Sample ID: MW-12

Date Collected: 05/01/17 15:45
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.7	B	15.0	1.00	mg/L			05/18/17 01:46	5
Fluoride	0.487	J B	1.00	0.0100	mg/L			05/17/17 04:10	1
Sulfate	41.3	B	25.0	0.150	mg/L			05/18/17 15:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0169	J	0.0500	0.00959	mg/L		06/02/17 18:53	06/06/17 19:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000487	J B	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 03:20	1
Arsenic	0.00172	J B	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 03:20	1
Barium	0.135	J	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 03:20	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 03:20	1
Boron	0.306	J B	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 03:20	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 03:20	1
Calcium	90.9	B	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 03:20	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 03:20	1
Cobalt	0.000220	J	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 03:20	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 03:20	1
Molybdenum	0.00842	J	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 03:20	1
Selenium	0.000417	J B	0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 03:20	1
Thallium	0.0000660	J	0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 03:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.21		0.100	0.100	SU			05/09/17 11:09	1
Temperature	22.2		0.100	0.100	Degrees C			05/09/17 11:09	1
Total Dissolved Solids	676		10.0	7.00	mg/L			05/06/17 12:25	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	0.299		0.113	0.117	1.00	0.120	pCi/L	05/09/17 11:04	05/31/17 08:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*05/09/17 11:04*	*05/31/17 08:30*	*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	0.256	U	0.238	0.239	1.00	0.384	pCi/L	05/09/17 11:25	05/23/17 11:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:05*	*1*

Client Sample ID: MW-12
Date Collected: 05/01/17 15:45
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-2
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	77.0		40 - 110	05/09/17 11:25	05/23/17 11:05	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	0.556		0.264	0.266	5.00	0.384	pCi/L		05/31/17 14:25	1

Client Sample ID: MW-13

Date Collected: 05/01/17 14:30
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.4**	**B**	15.0	1.00	mg/L			05/18/17 02:04	5
Fluoride	**0.291**	**J B**	1.00	0.0100	mg/L			05/17/17 04:28	1
Sulfate	**98.1**	**B**	50.0	0.300	mg/L			05/18/17 15:34	10

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 18:53	06/06/17 19:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000432**	**J B**	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 03:24	1
Arsenic	**0.00136**	**J B**	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 03:24	1
Barium	**0.0775**	**J**	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 03:24	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 03:24	1
Boron	**0.0397**	**J B**	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 03:24	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 03:24	1
Calcium	**90.2**	**B**	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 03:24	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 03:24	1
Cobalt	**0.00115**	**J**	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 03:24	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 03:24	1
Molybdenum	**0.00297**	**J**	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 03:24	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 03:24	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 03:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.79**		0.100	0.100	SU			05/09/17 11:09	1
Temperature	**22.1**		0.100	0.100	Degrees C			05/09/17 11:09	1
Total Dissolved Solids	**714**		10.0	7.00	mg/L			05/06/17 12:25	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	0.0963	U	0.0714	0.0719	1.00	0.0984	pCi/L	05/09/17 11:04	05/31/17 08:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*05/09/17 11:04*	*05/31/17 08:30*	*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	0.0678	U	0.205	0.205	1.00	0.357	pCi/L	05/09/17 11:25	05/23/17 11:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:06*	*1*

Client Sample ID: MW-13
Date Collected: 05/01/17 14:30
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-3
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	79.6		40 - 110	05/09/17 11:25	05/23/17 11:06	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	0.164	U	0.217	0.217	5.00	0.357	pCi/L		05/31/17 14:25	1

Client Sample ID: MW-14

Date Collected: 05/01/17 13:15
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	185	B	60.0	4.00	mg/L			05/18/17 03:16	20
Fluoride	0.312	J B	1.00	0.0100	mg/L			05/17/17 04:46	1
Sulfate	197	B	100	0.600	mg/L			05/18/17 15:52	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0437	J	0.0500	0.00959	mg/L		06/02/17 18:53	06/06/17 19:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000407	J B	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 03:29	1
Arsenic	0.00113	J B	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 03:29	1
Barium	0.0655	J	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 03:29	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 03:29	1
Boron	0.234	J B	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 03:29	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 03:29	1
Calcium	193	B	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 03:29	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 03:29	1
Cobalt	0.000298	J	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 03:29	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 03:29	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 03:29	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 03:29	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 03:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.11		0.100	0.100	SU			05/09/17 11:09	1
Temperature	22.1		0.100	0.100	Degrees C			05/09/17 11:09	1
Total Dissolved Solids	1170		10.0	7.00	mg/L			05/06/17 12:25	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	1.05		0.195	0.217	1.00	0.105	pCi/L	05/09/17 11:04	05/31/17 08:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*05/09/17 11:04*	*05/31/17 08:30*	*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	1.12		0.298	0.315	1.00	0.351	pCi/L	05/09/17 11:25	05/23/17 11:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:06*	*1*

Client Sample ID: MW-14
Date Collected: 05/01/17 13:15
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-4
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	75.5		40 - 110	05/09/17 11:25	05/23/17 11:06	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	2.17		0.356	0.382	5.00	0.351	pCi/L		05/31/17 14:25	1

Client Sample ID: DUPE

Date Collected: 05/01/17 12:00
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1820	B	600	40.0	mg/L			05/18/17 03:34	200
Fluoride	0.518	J B	10.0	0.100	mg/L			05/17/17 05:57	10
Sulfate	1000	B	1000	6.00	mg/L			05/18/17 16:10	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0539		0.0500	0.00959	mg/L		06/02/17 18:53	06/06/17 19:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000333	J B	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 03:33	1
Arsenic	0.00152	J B	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 03:33	1
Barium	0.0365	J	0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 03:33	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 03:33	1
Boron	0.741	J B	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 03:33	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 03:33	1
Calcium	295	B	1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 03:33	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 03:33	1
Cobalt	0.000753	J	0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 03:33	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 03:33	1
Molybdenum	0.00152	J	0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 03:33	1
Selenium	0.000447	J B	0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 03:33	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 03:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.255		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.97		0.100	0.100	SU			05/09/17 11:09	1
Temperature	22.1		0.100	0.100	Degrees C			05/09/17 11:09	1
Total Dissolved Solids	4900		100	70.0	mg/L			05/06/17 12:25	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	0.675		0.156	0.168	1.00	0.101	pCi/L	05/09/17 11:04	05/31/17 08:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*05/09/17 11:04*	*05/31/17 08:30*	*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	1.65		0.354	0.385	1.00	0.400	pCi/L	05/09/17 11:25	05/23/17 11:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:06*	*1*

Client Sample ID: DUPE
Date Collected: 05/01/17 12:00
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-5
Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*75.5*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:06*	*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	**2.33**		0.386	0.420	5.00	0.400	pCi/L		05/31/17 14:25	1

Client Sample ID: FIELD BLANK

Date Collected: 05/01/17 16:23
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.91**	**J B**	3.00	0.200	mg/L			05/17/17 06:15	1
Fluoride	**0.0238**	**J B**	1.00	0.0100	mg/L			05/17/17 06:15	1
Sulfate	**1.66**	**J**	5.00	0.0300	mg/L			05/17/17 06:15	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 18:53	06/06/17 19:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000420**	**J B**	0.00200	0.0000213	mg/L		06/07/17 14:54	06/16/17 03:38	1
Arsenic	**0.000261**	**J B**	0.00500	0.000118	mg/L		06/07/17 14:54	06/16/17 03:38	1
Barium	ND		0.200	0.000270	mg/L		06/07/17 14:54	06/16/17 03:38	1
Beryllium	ND		0.00200	0.000102	mg/L		06/07/17 14:54	06/16/17 03:38	1
Boron	**0.00659**	**J B**	1.00	0.00339	mg/L		06/07/17 14:54	06/16/17 03:38	1
Cadmium	ND		0.00100	0.000152	mg/L		06/07/17 14:54	06/16/17 03:38	1
Calcium	ND		1.00	0.0412	mg/L		06/07/17 14:54	06/16/17 03:38	1
Chromium	ND		0.00300	0.000339	mg/L		06/07/17 14:54	06/16/17 03:38	1
Cobalt	ND		0.00500	0.0000218	mg/L		06/07/17 14:54	06/16/17 03:38	1
Lead	ND		0.00500	0.0000675	mg/L		06/07/17 14:54	06/16/17 03:38	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/07/17 14:54	06/16/17 03:38	1
Selenium	ND		0.0100	0.000348	mg/L		06/07/17 14:54	06/16/17 03:38	1
Thallium	ND		0.00100	0.0000360	mg/L		06/07/17 14:54	06/16/17 03:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.85**		0.100	0.100	SU			05/09/17 11:09	1
Temperature	**22.3**		0.100	0.100	Degrees C			05/09/17 11:09	1
Total Dissolved Solids	**20.0**		10.0	7.00	mg/L			05/06/17 12:25	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	-0.0404	U	0.0315	0.0317	1.00	0.103	pCi/L	05/09/17 11:04	05/31/17 08:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*05/09/17 11:04*	*05/31/17 08:30*	*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	0.146	U	0.196	0.197	1.00	0.328	pCi/L	05/09/17 11:25	05/23/17 11:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*05/09/17 11:25*	*05/23/17 11:06*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 05/01/17 16:23
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-6
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	74.8		40 - 110	05/09/17 11:25	05/23/17 11:06	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	0.105	U	0.199	0.199	5.00	0.328	pCi/L		05/31/17 14:25	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-430555/3
Matrix: Water
Analysis Batch: 430555

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3713	J	3.00	0.200	mg/L			05/17/17 00:36	1
Fluoride	0.02251	J	1.00	0.0100	mg/L			05/17/17 00:36	1
Sulfate	ND		5.00	0.0300	mg/L			05/17/17 00:36	1

Lab Sample ID: LCS 490-430555/4
Matrix: Water
Analysis Batch: 430555

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	10.58		mg/L		106	80 - 120
Fluoride	1.00	1.012		mg/L		101	80 - 120
Sulfate	10.0	10.05		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-430555/5
Matrix: Water
Analysis Batch: 430555

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	10.54		mg/L		105	80 - 120	0	20
Fluoride	1.00	1.017		mg/L		102	80 - 120	1	20
Sulfate	10.0	10.11		mg/L		101	80 - 120	1	20

Lab Sample ID: 490-127934-E-4 MS
Matrix: Water
Analysis Batch: 430555

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
Fluoride	1.06	B	0.200	0.8764	J 4	mg/L		-93	80 - 120

Lab Sample ID: 490-127934-E-4 MSD
Matrix: Water
Analysis Batch: 430555

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
Fluoride	1.06	B	0.200	0.8810	J 4	mg/L		-91	80 - 120	1	20

Lab Sample ID: MB 490-430936/3
Matrix: Water
Analysis Batch: 430936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3825	J	3.00	0.200	mg/L			05/17/17 22:30	1
Fluoride	ND		1.00	0.0100	mg/L			05/17/17 22:30	1

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

Lab Sample ID: LCS 490-430936/4
Matrix: Water
Analysis Batch: 430936

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	10.26		mg/L		103	80 - 120
Fluoride	1.00	0.9842	J	mg/L		98	80 - 120

Lab Sample ID: LCSD 490-430936/5
Matrix: Water
Analysis Batch: 430936

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	10.64		mg/L		106	80 - 120	4	20
Fluoride	1.00	1.019		mg/L		102	80 - 120	3	20

Lab Sample ID: 490-128738-B-2 MS
Matrix: Water
Analysis Batch: 430936

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	76.2	F1 B	40.0	105.0	F1	mg/L		72	80 - 120
Fluoride	0.768	J	4.00	4.428	J	mg/L		92	80 - 120

Lab Sample ID: 490-128738-B-2 MSD
Matrix: Water
Analysis Batch: 430936

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	76.2	F1 B	40.0	111.8		mg/L		89	80 - 120	6	20
Fluoride	0.768	J	4.00	4.430	J	mg/L		92	80 - 120	0	20

Lab Sample ID: MB 490-431114/3
Matrix: Water
Analysis Batch: 431114

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.5265	J	3.00	0.200	mg/L			05/18/17 11:52	1
Fluoride	ND		1.00	0.0100	mg/L			05/18/17 11:52	1
Sulfate	0.1122	J	5.00	0.0300	mg/L			05/18/17 11:52	1

Lab Sample ID: LCS 490-431114/4
Matrix: Water
Analysis Batch: 431114

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	10.00		mg/L		100	80 - 120
Fluoride	1.00	0.9469	J	mg/L		95	80 - 120
Sulfate	10.0	9.540		mg/L		95	80 - 120

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

Lab Sample ID: LCSD 490-431114/5
Matrix: Water
Analysis Batch: 431114

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	9.943		mg/L		99	80 - 120	1	20
Fluoride			1.00	0.9604	J	mg/L		96	80 - 120	1	20
Sulfate			10.0	9.645		mg/L		96	80 - 120	1	20

Lab Sample ID: 490-128738-B-2 MS
Matrix: Water
Analysis Batch: 431114

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	79.7	B F1	40.0	105.5	F1	mg/L		65	80 - 120
Fluoride	0.766	J	4.00	4.809	J	mg/L		101	80 - 120
Sulfate	359	B	40.0	327.9	4	mg/L		-78	80 - 120

Lab Sample ID: 490-128738-B-2 MSD
Matrix: Water
Analysis Batch: 431114

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	79.7	B F1	40.0	114.1		mg/L		86	80 - 120	8	20
Fluoride	0.766	J	4.00	4.599	J	mg/L		96	80 - 120	4	20
Sulfate	359	B	40.0	331.6	4	mg/L		-69	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-213098/1-A
Matrix: Water
Analysis Batch: 213433

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 213098

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/02/17 18:53	06/06/17 16:52	1

Lab Sample ID: LCS 180-213098/2-A
Matrix: Water
Analysis Batch: 213433

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 213098

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium			1.00	0.9940		mg/L		99	80 - 120

Lab Sample ID: 180-66031-K-4-D MS ^10
Matrix: Water
Analysis Batch: 213433

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 213098

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.411	J	1.00	1.433		mg/L		102	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 180-66031-K-4-E MSD ^10
Matrix: Water
Analysis Batch: 213433

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 213098

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.411	J	1.00	1.433		mg/L		102	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: 490-127756-1 MS
Matrix: Ground Water
Analysis Batch: 214690

Client Sample ID: MW-11
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

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

Lab Sample ID: 490-127756-1 MS
Matrix: Ground Water
Analysis Batch: 214690

Client Sample ID: MW-11
Prep Type: Total Recoverable
Prep Batch: 213518

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
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
Thallium	0.0000390	J	0.0500	0.05183		mg/L		104	75 - 125

Lab Sample ID: 490-127756-1 MSD
Matrix: Ground Water
Analysis Batch: 214690

Client Sample ID: MW-11
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 490-428205/1-A
Matrix: Water
Analysis Batch: 428390

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428205

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/08/17 10:34	05/08/17 16:01	1

Lab Sample ID: LCS 490-428205/2-A
Matrix: Water
Analysis Batch: 428390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428205

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.200		ug/L		120	80 - 120

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

Lab Sample ID: 490-127756-1 MS
Matrix: Ground Water
Analysis Batch: 428390

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 428205

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1	1.00	1.277	F1	ug/L		128	75 - 125

Lab Sample ID: 490-127756-1 MSD
Matrix: Ground Water
Analysis Batch: 428390

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 428205

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	1.00	1.226		ug/L		123	75 - 125	4	20

Method: 9040C - pH

Lab Sample ID: LCS 490-428532/12
Matrix: Water
Analysis Batch: 428532

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: 490-127551-A-3 DU
Matrix: Water
Analysis Batch: 428532

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	11.1		11.14		SU		0	20
Temperature	22.2		22.10		Degrees C		0.5	20

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

Lab Sample ID: MB 490-427864/1
Matrix: Water
Analysis Batch: 427864

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			05/06/17 12:25	1

Lab Sample ID: LCS 490-427864/2
Matrix: Water
Analysis Batch: 427864

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: 490-127603-F-1 DU
Matrix: Water
Analysis Batch: 427864

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	5360		5004		mg/L		7	20

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

Lab Sample ID: 490-127756-4 DU
Matrix: Ground Water
Analysis Batch: 427864

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1170			1203		mg/L				3	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-307830/1-A
Matrix: Water
Analysis Batch: 311334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307830

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1159	U	0.0885	0.0891	1.00	0.129	pCi/L	05/09/17 11:04	05/31/17 05:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*05/09/17 11:04*	*05/31/17 05:48*	*1*

Lab Sample ID: LCS 160-307830/2-A
Matrix: Water
Analysis Batch: 311334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307830

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	11.42		1.19	1.00	0.111	pCi/L	100	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.9*		*40 - 110*

Lab Sample ID: LCSD 160-307830/3-A
Matrix: Water
Analysis Batch: 311334

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307830

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	11.09		1.16	1.00	0.121	pCi/L	98	68 - 137	0.14	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*96.2*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-307831/1-A
Matrix: Water
Analysis Batch: 309863

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307831

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2287	U	0.242	0.243	1.00	0.395	pCi/L	05/09/17 11:25	05/23/17 11:02	1

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

Lab Sample ID: MB 160-307831/1-A
Matrix: Water
Analysis Batch: 309863

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307831

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110	05/09/17 11:25	05/23/17 11:02	1
Y Carrier	75.9		40 - 110	05/09/17 11:25	05/23/17 11:02	1

Lab Sample ID: LCS 160-307831/2-A
Matrix: Water
Analysis Batch: 309863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307831

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.4	14.25		1.54	1.00	0.358	pCi/L	106	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.9		40 - 110
Y Carrier	79.3		40 - 110

Lab Sample ID: LCSD 160-307831/3-A
Matrix: Water
Analysis Batch: 309863

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307831

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.4	16.48		1.74	1.00	0.343	pCi/L	123	56 - 140	0.68	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.2		40 - 110
Y Carrier	79.3		40 - 110

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

Lab Sample ID: 400-137272-A-4 DU
Matrix: Water
Analysis Batch: 311374

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	0.675			1.418		0.350	5.00	0.428	pCi/L			1.11	

HPLC/IC

Analysis Batch: 430555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-2	MW-12	Total/NA	Ground Water	9056A	
490-127756-3	MW-13	Total/NA	Ground Water	9056A	
490-127756-4	MW-14	Total/NA	Ground Water	9056A	
490-127756-5	DUPE	Total/NA	Water	9056A	
490-127756-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-430555/3	Method Blank	Total/NA	Water	9056A	
LCS 490-430555/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-430555/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-127934-E-4 MS	Matrix Spike	Total/NA	Water	9056A	
490-127934-E-4 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 430936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	9056A	
490-127756-1	MW-11	Total/NA	Ground Water	9056A	
490-127756-2	MW-12	Total/NA	Ground Water	9056A	
490-127756-3	MW-13	Total/NA	Ground Water	9056A	
490-127756-4	MW-14	Total/NA	Ground Water	9056A	
490-127756-5	DUPE	Total/NA	Water	9056A	
MB 490-430936/3	Method Blank	Total/NA	Water	9056A	
LCS 490-430936/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-430936/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-128738-B-2 MS	Matrix Spike	Total/NA	Water	9056A	
490-128738-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 431114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	9056A	
490-127756-2	MW-12	Total/NA	Ground Water	9056A	
490-127756-3	MW-13	Total/NA	Ground Water	9056A	
490-127756-4	MW-14	Total/NA	Ground Water	9056A	
490-127756-5	DUPE	Total/NA	Water	9056A	
MB 490-431114/3	Method Blank	Total/NA	Water	9056A	
LCS 490-431114/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-431114/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-128738-B-2 MS	Matrix Spike	Total/NA	Water	9056A	
490-128738-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 213098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total Recoverable	Ground Water	3005A	
490-127756-2	MW-12	Total Recoverable	Ground Water	3005A	
490-127756-3	MW-13	Total Recoverable	Ground Water	3005A	
490-127756-4	MW-14	Total Recoverable	Ground Water	3005A	
490-127756-5	DUPE	Total Recoverable	Water	3005A	
490-127756-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-213098/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-213098/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 213098 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-66031-K-4-D MS ^10	Matrix Spike	Total Recoverable	Water	3005A	
180-66031-K-4-E MSD ^10	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 213433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total Recoverable	Ground Water	6010C	213098
490-127756-2	MW-12	Total Recoverable	Ground Water	6010C	213098
490-127756-3	MW-13	Total Recoverable	Ground Water	6010C	213098
490-127756-4	MW-14	Total Recoverable	Ground Water	6010C	213098
490-127756-5	DUPE	Total Recoverable	Water	6010C	213098
490-127756-6	FIELD BLANK	Total Recoverable	Water	6010C	213098
MB 180-213098/1-A	Method Blank	Total Recoverable	Water	6010C	213098
LCS 180-213098/2-A	Lab Control Sample	Total Recoverable	Water	6010C	213098
180-66031-K-4-D MS ^10	Matrix Spike	Total Recoverable	Water	6010C	213098
180-66031-K-4-E MSD ^10	Matrix Spike Duplicate	Total Recoverable	Water	6010C	213098

Prep Batch: 213518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total Recoverable	Ground Water	3005A	
490-127756-2	MW-12	Total Recoverable	Ground Water	3005A	
490-127756-3	MW-13	Total Recoverable	Ground Water	3005A	
490-127756-4	MW-14	Total Recoverable	Ground Water	3005A	
490-127756-5	DUPE	Total Recoverable	Water	3005A	
490-127756-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-213518/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-213518/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-127756-1 MS	MW-11	Total Recoverable	Ground Water	3005A	
490-127756-1 MSD	MW-11	Total Recoverable	Ground Water	3005A	

Analysis Batch: 214690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total Recoverable	Ground Water	6020A	213518
490-127756-2	MW-12	Total Recoverable	Ground Water	6020A	213518
490-127756-3	MW-13	Total Recoverable	Ground Water	6020A	213518
490-127756-4	MW-14	Total Recoverable	Ground Water	6020A	213518
490-127756-5	DUPE	Total Recoverable	Water	6020A	213518
490-127756-6	FIELD BLANK	Total Recoverable	Water	6020A	213518
MB 180-213518/1-A	Method Blank	Total Recoverable	Water	6020A	213518
LCS 180-213518/2-A	Lab Control Sample	Total Recoverable	Water	6020A	213518
490-127756-1 MS	MW-11	Total Recoverable	Ground Water	6020A	213518
490-127756-1 MSD	MW-11	Total Recoverable	Ground Water	6020A	213518

Prep Batch: 428205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	7470A	
490-127756-2	MW-12	Total/NA	Ground Water	7470A	
490-127756-3	MW-13	Total/NA	Ground Water	7470A	
490-127756-4	MW-14	Total/NA	Ground Water	7470A	
490-127756-5	DUPE	Total/NA	Water	7470A	
490-127756-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-428205/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 428205 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-428205/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-127756-1 MS	MW-11	Total/NA	Ground Water	7470A	
490-127756-1 MSD	MW-11	Total/NA	Ground Water	7470A	

Analysis Batch: 428390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	7470A	428205
490-127756-2	MW-12	Total/NA	Ground Water	7470A	428205
490-127756-3	MW-13	Total/NA	Ground Water	7470A	428205
490-127756-4	MW-14	Total/NA	Ground Water	7470A	428205
490-127756-5	DUPE	Total/NA	Water	7470A	428205
490-127756-6	FIELD BLANK	Total/NA	Water	7470A	428205
MB 490-428205/1-A	Method Blank	Total/NA	Water	7470A	428205
LCS 490-428205/2-A	Lab Control Sample	Total/NA	Water	7470A	428205
490-127756-1 MS	MW-11	Total/NA	Ground Water	7470A	428205
490-127756-1 MSD	MW-11	Total/NA	Ground Water	7470A	428205

General Chemistry

Analysis Batch: 427864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-127756-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-127756-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-127756-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-127756-5	DUPE	Total/NA	Water	SM 2540C	
490-127756-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-427864/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-427864/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-127603-F-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-127756-4 DU	MW-14	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 428532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	9040C	
490-127756-2	MW-12	Total/NA	Ground Water	9040C	
490-127756-3	MW-13	Total/NA	Ground Water	9040C	
490-127756-4	MW-14	Total/NA	Ground Water	9040C	
490-127756-5	DUPE	Total/NA	Water	9040C	
490-127756-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-428532/12	Lab Control Sample	Total/NA	Water	9040C	
490-127551-A-3 DU	Duplicate	Total/NA	Water	9040C	

Rad

Prep Batch: 307830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	PrecSep-21	
490-127756-2	MW-12	Total/NA	Ground Water	PrecSep-21	
490-127756-3	MW-13	Total/NA	Ground Water	PrecSep-21	

Rad (Continued)

Prep Batch: 307830 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-4	MW-14	Total/NA	Ground Water	PrecSep-21	
490-127756-5	DUPE	Total/NA	Water	PrecSep-21	
490-127756-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-307830/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-307830/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-307830/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 307831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-127756-1	MW-11	Total/NA	Ground Water	PrecSep_0	
490-127756-2	MW-12	Total/NA	Ground Water	PrecSep_0	
490-127756-3	MW-13	Total/NA	Ground Water	PrecSep_0	
490-127756-4	MW-14	Total/NA	Ground Water	PrecSep_0	
490-127756-5	DUPE	Total/NA	Water	PrecSep_0	
490-127756-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-307831/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-307831/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-307831/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

Client Sample ID: MW-11

Date Collected: 05/01/17 11:00
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-1

Matrix: Ground 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		5			430936	05/18/17 01:11	JHS	TAL NSH
Total/NA	Analysis	9056A		200			430936	05/18/17 01:28	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 14:58	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213098	06/02/17 18:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213433	06/06/17 18:55	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 02:47	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:08	CAH	TAL NSH
Total/NA	Analysis	9040C		1			428532	05/09/17 11:09	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	427864	05/06/17 12:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.49 mL	1.0 g	307830	05/09/17 11:04	LDE	TAL SL
Total/NA	Analysis	903.0		1			311334	05/31/17 08:30	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.49 mL	1.0 g	307831	05/09/17 11:25	LDE	TAL SL
Total/NA	Analysis	904.0		1			309863	05/23/17 11:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311374	05/31/17 14:25	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 05/01/17 15:45
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-2

Matrix: Ground 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			430555	05/17/17 04:10	JHS	TAL NSH
Total/NA	Analysis	9056A		5			430936	05/18/17 01:46	JHS	TAL NSH
Total/NA	Analysis	9056A		5			431114	05/18/17 15:16	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213098	06/02/17 18:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213433	06/06/17 19:01	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 03:20	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:17	CAH	TAL NSH
Total/NA	Analysis	9040C		1			428532	05/09/17 11:09	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427864	05/06/17 12:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.90 mL	1.0 g	307830	05/09/17 11:04	LDE	TAL SL
Total/NA	Analysis	903.0		1			311334	05/31/17 08:30	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.90 mL	1.0 g	307831	05/09/17 11:25	LDE	TAL SL
Total/NA	Analysis	904.0		1			309863	05/23/17 11:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311374	05/31/17 14:25	RTM	TAL SL

Client Sample ID: MW-13

Date Collected: 05/01/17 14:30
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-3

Matrix: Ground 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			430555	05/17/17 04:28	JHS	TAL NSH
Total/NA	Analysis	9056A		5			430936	05/18/17 02:04	JHS	TAL NSH
Total/NA	Analysis	9056A		10			431114	05/18/17 15:34	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213098	06/02/17 18:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213433	06/06/17 19:16	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 03:24	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:21	CAH	TAL NSH
Total/NA	Analysis	9040C		1			428532	05/09/17 11:09	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427864	05/06/17 12:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.48 mL	1.0 g	307830	05/09/17 11:04	LDE	TAL SL
Total/NA	Analysis	903.0		1			311334	05/31/17 08:30	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.48 mL	1.0 g	307831	05/09/17 11:25	LDE	TAL SL
Total/NA	Analysis	904.0		1			309975	05/23/17 11:06	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311374	05/31/17 14:25	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 05/01/17 13:15
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-4

Matrix: Ground 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			430555	05/17/17 04:46	JHS	TAL NSH
Total/NA	Analysis	9056A		20			430936	05/18/17 03:16	JHS	TAL NSH
Total/NA	Analysis	9056A		20			431114	05/18/17 15:52	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213098	06/02/17 18:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213433	06/06/17 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 03:29	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:24	CAH	TAL NSH
Total/NA	Analysis	9040C		1			428532	05/09/17 11:09	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427864	05/06/17 12:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.97 mL	1.0 g	307830	05/09/17 11:04	LDE	TAL SL
Total/NA	Analysis	903.0		1			311334	05/31/17 08:30	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.97 mL	1.0 g	307831	05/09/17 11:25	LDE	TAL SL
Total/NA	Analysis	904.0		1			309975	05/23/17 11:06	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311374	05/31/17 14:25	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 05/01/17 12:00
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-5

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		10			430555	05/17/17 05:57	JHS	TAL NSH
Total/NA	Analysis	9056A		200			430936	05/18/17 03:34	JHS	TAL NSH
Total/NA	Analysis	9056A		200			431114	05/18/17 16:10	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213098	06/02/17 18:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213433	06/06/17 19:26	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 03:33	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:27	CAH	TAL NSH
Total/NA	Analysis	9040C		1			428532	05/09/17 11:09	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	427864	05/06/17 12:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.78 mL	1.0 g	307830	05/09/17 11:04	LDE	TAL SL
Total/NA	Analysis	903.0		1			311334	05/31/17 08:30	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.78 mL	1.0 g	307831	05/09/17 11:25	LDE	TAL SL
Total/NA	Analysis	904.0		1			309975	05/23/17 11:06	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311374	05/31/17 14:25	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 05/01/17 16:23
Date Received: 05/04/17 09:45

Lab Sample ID: 490-127756-6

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			430555	05/17/17 06:15	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	213098	06/02/17 18:53	RJR	TAL PIT
Total Recoverable	Analysis	6010C		1			213433	06/06/17 19:31	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 03:38	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	428205	05/08/17 10:34	CAH	TAL NSH
Total/NA	Analysis	7470A		1			428390	05/08/17 16:30	CAH	TAL NSH
Total/NA	Analysis	9040C		1			428532	05/09/17 11:09	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	427864	05/06/17 12:25	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.40 mL	1.0 g	307830	05/09/17 11:04	LDE	TAL SL
Total/NA	Analysis	903.0		1			311334	05/31/17 08:30	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.40 mL	1.0 g	307831	05/09/17 11:25	LDE	TAL SL
Total/NA	Analysis	904.0		1			309975	05/23/17 11:06	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			311374	05/31/17 14:25	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: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

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: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

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	06-30-17

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		Ground Water	pH
9040C		Ground Water	Temperature
9040C		Water	pH
9040C		Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Ground Water	Total Dissolved Solids
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
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	06-30-17
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-17
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	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17 *
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

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	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-17 *
Illinois	NELAP	5	200023	11-30-17

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

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

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
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17 *
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

190-127756 Chain of Custody

Cooler Received/Opened On 5/4/2017 @ 0945

Time Samples Removed From Cooler 1520 Time Samples Placed In Storage 1644 (2 Hour Window)

1. Tracking # 5923 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 160656843 pH Strip Lot NA Chlorine Strip Lot NA

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) 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) AA

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) JLW

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) JLW

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

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

490-127756

Cooler Received/Opened On 5/4/2017 @ 0945

Time Samples Removed From Cooler 1520 Time Samples Placed In Storage 1644 (2 Hour Window)

1. Tracking # 5945 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 160656843 pH Strip Lot NA Chlorine Strip Lot NA

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? HG 5/4/17 (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) AA

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) [signature]

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) [signature]

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

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	Project Manager: Brad Coyle	Site Contact: Greg Dick	DATE: 5/3/2017	COC No:
Big Rivers Electric Corporation	Tel/Fax: 270-844-6032	Lab Contact: Roxanne Cisneros	Carrier: FedEx	1 of 1 COCs
201 3rd Street	Analysis Turnaround Time - STANDARD			Sampler:
Henderson, KY 42420	☐CALENDAR DAYS ☐WORKING DAYS			For Lab Use Only:
(270)844-6032 OR (270)844-6000	TAT if different from Below STANDARD TAT			Walk-in Client:
bradley.coyle@bigrivers.com	☐ 2 weeks			Lab Sampling:
Green Ash Pond CCR Event 6	☐ 1 week			Job / SDG No.:
SEBREE STATION - GREEN ASH POND	☐ 2 days			
P O #	☐ 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	6010B, 7470A	904C, 9056_ORGFM_28D	2540C_CALCD_TDS	Sample Specific Notes:
MW-11	5/1/2017	1100	G	WATER	6	N	N	X	X	X	X	
MW-12	5/1/2017	1545	G	WATER	6	N	N	X	X	X	X	
MW-13	5/1/2017	1430	G	WATER	6	N	N	X	X	X	X	
MW-14	5/1/2017	1315	G	WATER	6	N	N	X	X	X	X	
DUPE	5/1/2017	1200	G	WATER	6	N	N	X	X	X	X	
FIELD BLANK	5/1/2017	1623	G	WATER	6	N	N	X	X	X	X	

Loc: 490
127756

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

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: SEE PREVIOUS SAMPLING EVENTS TO ENSURE SAME PARAMETERS ARE RUN. RUN SAMPLES PER PROTOCOL/METHODOLOGY PRESCRIBED IN 40 CFR PART 257 (FEDERAL CCR REGULATIONS).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: 1.4, 0.7 Corr'd: _____		Therm ID No.: _____
Relinquished by: BRADLEY COYLE	Company: BIG RIVERS ELEC	Date/Time: 5/3/17 1415	Received by:	Company: TAN	Date/Time: 5/4/17@0945
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

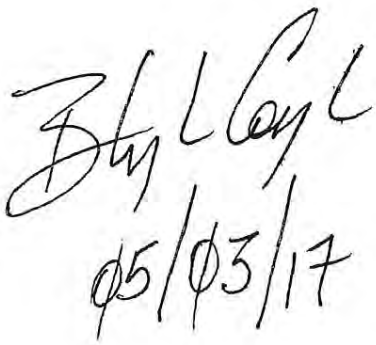
Form No. CA-C-WI-002, Rev. 4.11, dated 1/24/2017

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





.oc: 490
127756


FedEx Saturday
TestAm
THE LEADER IN ENVIRONMENTAL
RT 639
ST F1
ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US
SHIP DATE: 05MAY17
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: S490-68168
FedEx
Expres
SATURDAY 12:0
TRK# 0201 7346 1349 8081
PRIORITY OVERNIGH
XO AGCA
1523
PA-US
Uncorrected temp 13.3 °C
Thermometer ID 12
No Ice
CF 0 Initials TB
PT-WI-SR-001 effective 7/26/13
490-127756 Waybill

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

Chain of Custody Record

490-127756 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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 #: 490-127756-1
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: Green Ash Pond CCR Event 6	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)	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-11 (490-127756-1)	5/1/17	11:00 Central		Water			X	X	X	2	Historical Review required
MW-12 (490-127756-2)	5/1/17	15:45 Central		Water			X	X	X	2	Historical Review required
MW-13 (490-127756-3)	5/1/17	14:30 Central		Water			X	X	X	2	Historical Review required
MW-14 (490-127756-4)	5/1/17	13:15 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-127756-6)	5/1/17	16:23 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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	5.5.17	TAN	Clarke	5.6.17 0840	TASL
Relinquished by:					
Relinquished by:					

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

6/20/2017

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: 490-56966.1
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 #: 490-127756-1
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: Green Ash Pond CCR Event 6	Project #: 49010431			
Site: Big Rivers CCR	SSOW#:			

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)	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:								
DUPE (490-127756-5)	5/1/17	12:00 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
[signature]	5.5.17	TAN	[signature] Clarke	5.6.17 0840	TASR
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	COC No: 90-56963.1
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 #: 490-127756-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 5/30/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Green Ash Pond CCR Event 6	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

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/3006A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-11 (490-127756-1)	5/1/17	11:00 Central		Water			X	X	1	Metals - run once, upload together.
MW-12 (490-127756-2)	5/1/17	15:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-13 (490-127756-3)	5/1/17	14:30 Central		Water			X	X	1	Metals - run once, upload together.
MW-14 (490-127756-4)	5/1/17	13:15 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-127756-5)	5/1/17	12:00 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-127756-6)	5/1/17	16:23 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: 5.5.17	Company: TAL	Received by:	Date/Time: 5/6/17 900	Company: 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:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-127756-1
SDG Number: SEBREE STATION - GREEN ASH POND

Login Number: 127756
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: 490-127756-1
SDG Number: SEBREE STATION - GREEN ASH POND

Login Number: 127756
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 05/06/17 09:44 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: 490-127756-1
SDG Number: SEBREE STATION - GREEN ASH POND

Login Number: 127756
List Number: 3
Creator: Castillo, Robert L

List Source: TestAmerica St. Louis
List Creation: 05/06/17 10:53 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.	N/A	
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	18.0
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: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-127756-1	MW-11	91.7
490-127756-2	MW-12	95.9
490-127756-3	MW-13	96.8
490-127756-4	MW-14	95.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-127756-5	DUPE	95.3
490-127756-6	FIELD BLANK	100
LCS 160-307830/2-A	Lab Control Sample	97.9
LCSD 160-307830/3-A	Lab Control Sample Dup	96.2
MB 160-307830/1-A	Method Blank	92.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-127756-1	MW-11	91.7	76.6
490-127756-2	MW-12	95.9	77.0
490-127756-3	MW-13	96.8	79.6
490-127756-4	MW-14	95.3	75.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-127756-5	DUPE	95.3	75.5
490-127756-6	FIELD BLANK	100	74.8
LCS 160-307831/2-A	Lab Control Sample	97.9	79.3
LCSD 160-307831/3-A	Lab Control Sample Dup	96.2	79.3
MB 160-307831/1-A	Method Blank	92.0	75.9

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Event 6

TestAmerica Job ID: 490-127756-1
SDG: SEBREE STATION - GREEN ASH POND

Ba = Ba Carrier
Y = 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: 490-134629-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR Groundwater-Round 7
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
9/13/2017 12:50:24 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-134629-1	MW-11	Ground Water	08/11/17 09:35	08/12/17 10:15
490-134629-2	MW-12	Ground Water	08/11/17 12:55	08/12/17 10:15
490-134629-3	MW-13	Ground Water	08/11/17 12:05	08/12/17 10:15
490-134629-4	MW-14	Ground Water	08/11/17 10:55	08/12/17 10:15
490-134629-5	DUPE	Ground Water	08/11/17 10:08	08/12/17 10:15
490-134629-6	FIELD BLANK	Water	08/11/17 13:44	08/12/17 10:15

Job ID: 490-134629-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-134629-1

Comments
No additional comments.

Receipt
The samples were received on 8/12/2017 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.8º C and 1.0º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-456432 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 following samples was diluted due to the nature of the sample matrix: MW-11 (490-134629-1), MW-12 (490-134629-2), MW-13 (490-134629-3), MW-14 (490-134629-4) and DUPE (490-134629-5). 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 160-322676: 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-11 (490-134629-1), MW-12 (490-134629-2), MW-13 (490-134629-3), MW-14 (490-134629-4), DUPE (490-134629-5) and FIELD BLANK (490-134629-6)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-322679: 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-11 (490-134629-1), MW-12 (490-134629-2), MW-13 (490-134629-3), MW-14 (490-134629-4), DUPE (490-134629-5) and FIELD BLANK (490-134629-6)

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
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.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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-11

Date Collected: 08/11/17 09:35
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2360**	**B**	600	40.0	mg/L			08/30/17 19:35	200
Fluoride	ND	F1	1.00	0.0100	mg/L			08/17/17 16:10	1
Sulfate	**1410**		500	3.00	mg/L			08/30/17 19:17	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0615**		0.0500	0.00959	mg/L		09/06/17 08:14	09/07/17 15:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000270**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 01:58	1
Arsenic	**0.00106**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 01:58	1
Barium	**0.0313**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 01:58	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 01:58	1
Boron	**0.695**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 01:58	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 01:58	1
Calcium	**321**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 01:58	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 01:58	1
Cobalt	**0.000654**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 01:58	1
Lead	**0.0000790**	**J**	0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 01:58	1
Molybdenum	**0.00186**	**J**	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 01:58	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 01:58	1
Thallium	**0.0000860**	**J**	0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 01:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.96**		0.100	0.100	SU			08/14/17 19:19	1
Temperature	**19.0**		0.100	0.100	Degrees C			08/14/17 19:19	1
Total Dissolved Solids	**5100**		100	70.0	mg/L			08/16/17 15:05	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	**0.889**		0.158	0.177	1.00	0.0814	pCi/L	08/17/17 08:40	09/08/17 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*08/17/17 08:40*	*09/08/17 07:16*	*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	**1.80**		0.321	0.361	1.00	0.325	pCi/L	08/17/17 08:52	08/24/17 20:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:16*	*1*

Client Sample ID: MW-11
Date Collected: 08/11/17 09:35
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-1
Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*83.4*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:16*	*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	**2.69**		0.357	0.402	5.00	0.325	pCi/L		09/08/17 15:56	1

Client Sample ID: MW-12

Date Collected: 08/11/17 12:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.0	J B	30.0	2.00	mg/L			08/30/17 19:53	10
Fluoride	0.842	J	1.00	0.0100	mg/L			08/17/17 16:45	1
Sulfate	33.8	J	50.0	0.300	mg/L			08/30/17 19:53	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0244	J	0.0500	0.00959	mg/L		09/06/17 08:14	09/07/17 15:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000263	J B	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 02:02	1
Arsenic	0.000865	J	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 02:02	1
Barium	0.138	J	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 02:02	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 02:02	1
Boron	0.296	J B	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 02:02	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 02:02	1
Calcium	88.5		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 02:02	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 02:02	1
Cobalt	0.0000890	J	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 02:02	1
Lead	0.000103	J	0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 02:02	1
Molybdenum	0.00881	J	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 02:02	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 02:02	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 02:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.22		0.100	0.100	SU			08/14/17 19:19	1
Temperature	17.6		0.100	0.100	Degrees C			08/14/17 19:19	1
Total Dissolved Solids	674		10.0	7.00	mg/L			08/16/17 15:05	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	0.191		0.0868	0.0885	1.00	0.100	pCi/L	08/17/17 08:40	09/08/17 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*08/17/17 08:40*	*09/08/17 07:16*	*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	0.375		0.212	0.215	1.00	0.316	pCi/L	08/17/17 08:52	08/24/17 20:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:16*	*1*

Client Sample ID: MW-12
Date Collected: 08/11/17 12:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-2
Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*87.1*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:16*	*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	**0.566**		0.229	0.232	5.00	0.316	pCi/L		09/08/17 15:56	1

Client Sample ID: MW-13

Date Collected: 08/11/17 12:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.6**	**J B**	30.0	2.00	mg/L			08/30/17 20:11	10
Fluoride	**0.503**	**J**	1.00	0.0100	mg/L			08/17/17 16:57	1
Sulfate	**96.6**		50.0	0.300	mg/L			08/30/17 20:11	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0111**	**J**	0.0500	0.00959	mg/L		09/06/17 08:14	09/07/17 15:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000160**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 02:07	1
Arsenic	**0.000962**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 02:07	1
Barium	**0.0793**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 02:07	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 02:07	1
Boron	**0.0512**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 02:07	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 02:07	1
Calcium	**92.3**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 02:07	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 02:07	1
Cobalt	**0.000868**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 02:07	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 02:07	1
Molybdenum	**0.00312**	**J**	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 02:07	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 02:07	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 02:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.78**		0.100	0.100	SU			08/14/17 19:19	1
Temperature	**18.3**		0.100	0.100	Degrees C			08/14/17 19:19	1
Total Dissolved Solids	**702**		10.0	7.00	mg/L			08/16/17 15:05	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	**0.264**		0.0927	0.0956	1.00	0.0685	pCi/L	08/17/17 08:40	09/08/17 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*08/17/17 08:40*	*09/08/17 07:16*	*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	0.206	U	0.210	0.211	1.00	0.342	pCi/L	08/17/17 08:52	08/24/17 20:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:16*	*1*

Client Sample ID: MW-13

Date Collected: 08/11/17 12:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-3

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.9*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:16*	*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	**0.470**		0.230	0.232	5.00	0.342	pCi/L		09/08/17 15:56	1

Client Sample ID: MW-14

Date Collected: 08/11/17 10:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	212	B	60.0	4.00	mg/L			08/30/17 20:29	20
Fluoride	0.605	J	1.00	0.0100	mg/L			08/17/17 17:08	1
Sulfate	179		100	0.600	mg/L			08/30/17 20:29	20

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		09/06/17 08:14	09/07/17 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000254	J B	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 02:12	1
Arsenic	0.00107	J	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 02:12	1
Barium	0.0590	J	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 02:12	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 02:12	1
Boron	0.277	J B	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 02:12	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 02:12	1
Calcium	193		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 02:12	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 02:12	1
Cobalt	0.000155	J	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 02:12	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 02:12	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 02:12	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 02:12	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 02:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.11		0.100	0.100	SU			08/14/17 19:19	1
Temperature	19.2		0.100	0.100	Degrees C			08/14/17 19:19	1
Total Dissolved Solids	1150		20.0	14.0	mg/L			08/16/17 15:05	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	0.670		0.142	0.154	1.00	0.0661	pCi/L	08/17/17 08:40	09/08/17 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*08/17/17 08:40*	*09/08/17 07:16*	*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	2.18		0.344	0.398	1.00	0.335	pCi/L	08/17/17 08:52	08/24/17 20:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:17*	*1*

Client Sample ID: MW-14

Date Collected: 08/11/17 10:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-4

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*85.6*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:17*	*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	**2.85**		0.372	0.427	5.00	0.335	pCi/L		09/08/17 15:56	1

Client Sample ID: DUPE

Date Collected: 08/11/17 10:08
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2120**	**B**	600	40.0	mg/L			08/30/17 21:06	200
Fluoride	ND		1.00	0.0100	mg/L			08/17/17 17:20	1
Sulfate	**1540**		500	3.00	mg/L			08/30/17 20:47	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0560**		0.0500	0.00959	mg/L		09/06/17 08:14	09/07/17 15:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000214**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 02:16	1
Arsenic	**0.000943**	**J**	0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 02:16	1
Barium	**0.0276**	**J**	0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 02:16	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 02:16	1
Boron	**0.716**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 02:16	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 02:16	1
Calcium	**314**		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 02:16	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 02:16	1
Cobalt	**0.000546**	**J**	0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 02:16	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 02:16	1
Molybdenum	**0.00150**	**J**	0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 02:16	1
Selenium	**0.000535**	**J**	0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 02:16	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 02:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.96**		0.100	0.100	SU			08/14/17 19:19	1
Temperature	**18.3**		0.100	0.100	Degrees C			08/14/17 19:19	1
Total Dissolved Solids	**4980**		100	70.0	mg/L			08/16/17 15:05	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	**0.803**		0.155	0.171	1.00	0.0679	pCi/L	08/17/17 08:40	09/08/17 07:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*08/17/17 08:40*	*09/08/17 07:16*	*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	**3.00**		0.397	0.484	1.00	0.363	pCi/L	08/17/17 08:52	08/24/17 20:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:17*	*1*

Client Sample ID: DUPE

Date Collected: 08/11/17 10:08
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-5

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*86.4*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:17*	*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	**3.80**		0.427	0.513	5.00	0.363	pCi/L		09/08/17 15:56	1

Client Sample ID: FIELD BLANK

Date Collected: 08/11/17 13:44
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.391**	**J B**	3.00	0.200	mg/L			08/17/17 17:32	1
Fluoride	ND		1.00	0.0100	mg/L			08/17/17 17:32	1
Sulfate	ND		5.00	0.0300	mg/L			08/17/17 17:32	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		09/06/17 08:14	09/07/17 16:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000268**	**J B**	0.00200	0.0000213	mg/L		09/06/17 08:26	09/07/17 02:21	1
Arsenic	ND		0.00500	0.000118	mg/L		09/06/17 08:26	09/07/17 02:21	1
Barium	ND		0.200	0.000270	mg/L		09/06/17 08:26	09/07/17 02:21	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/07/17 02:21	1
Boron	**0.0214**	**J B**	1.00	0.00339	mg/L		09/06/17 08:26	09/07/17 02:21	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/07/17 02:21	1
Calcium	ND		1.00	0.0412	mg/L		09/06/17 08:26	09/07/17 02:21	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/07/17 02:21	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/06/17 08:26	09/07/17 02:21	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/07/17 02:21	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/07/17 02:21	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/07/17 02:21	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/07/17 02:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.98**		0.100	0.100	SU			08/14/17 19:19	1
Temperature	**19.3**		0.100	0.100	Degrees C			08/14/17 19:19	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/16/17 15:05	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	**0.112**		0.0651	0.0659	1.00	0.0850	pCi/L	08/17/17 08:40	09/08/17 07:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*08/17/17 08:40*	*09/08/17 07:13*	*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	**0.515**		0.229	0.234	1.00	0.325	pCi/L	08/17/17 08:52	08/24/17 20:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*08/17/17 08:52*	*08/24/17 20:17*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 08/11/17 13:44
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-6

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.1		40 - 110	08/17/17 08:52	08/24/17 20:17	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	0.627		0.238	0.243	5.00	0.325	pCi/L		09/08/17 15:56	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-453454/3
Matrix: Water
Analysis Batch: 453454

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3891	J	3.00	0.200	mg/L			08/17/17 15:35	1
Fluoride	ND		1.00	0.0100	mg/L			08/17/17 15:35	1
Sulfate	ND		5.00	0.0300	mg/L			08/17/17 15:35	1

Lab Sample ID: LCS 490-453454/4
Matrix: Water
Analysis Batch: 453454

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	9.262		mg/L		93	80 - 120
Fluoride	1.00	0.9570	J	mg/L		96	80 - 120
Sulfate	10.0	9.102		mg/L		91	80 - 120

Lab Sample ID: LCSD 490-453454/5
Matrix: Water
Analysis Batch: 453454

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	9.228		mg/L		92	80 - 120	0	20
Fluoride	1.00	0.8933	J	mg/L		89	80 - 120	7	20
Sulfate	10.0	9.096		mg/L		91	80 - 120	0	20

Lab Sample ID: MB 490-456432/3
Matrix: Water
Analysis Batch: 456432

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3231	J	3.00	0.200	mg/L			08/30/17 17:47	1
Fluoride	ND		1.00	0.0100	mg/L			08/30/17 17:47	1
Sulfate	ND		5.00	0.0300	mg/L			08/30/17 17:47	1

Lab Sample ID: LCS 490-456432/4
Matrix: Water
Analysis Batch: 456432

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	10.60		mg/L		106	80 - 120
Fluoride	1.00	1.048		mg/L		105	80 - 120
Sulfate	10.0	10.46		mg/L		105	80 - 120

Lab Sample ID: LCSD 490-456432/5
Matrix: Water
Analysis Batch: 456432

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	10.36		mg/L		104	80 - 120	2	20
Fluoride	1.00	1.030		mg/L		103	80 - 120	2	20
Sulfate	10.0	10.18		mg/L		102	80 - 120	3	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-222116/1-A
Matrix: Water
Analysis Batch: 222351

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 222116

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/06/17 08:14	09/07/17 14:43	1

Lab Sample ID: LCS 180-222116/2-A
Matrix: Water
Analysis Batch: 222351

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 222116

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9884		mg/L		99	80 - 120

Lab Sample ID: 180-69616-C-3-B MS
Matrix: Water
Analysis Batch: 222351

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 222116

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	1.003		mg/L		100	75 - 125

Lab Sample ID: 180-69616-C-3-C MSD
Matrix: Water
Analysis Batch: 222351

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 222116

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	1.008		mg/L		101	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-222124/1-A
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00006300	J	0.00200	0.0000213	mg/L		09/06/17 08:26	09/06/17 23:59	1
Arsenic	ND		0.00500	0.000118	mg/L		09/06/17 08:26	09/06/17 23:59	1
Barium	ND		0.200	0.000270	mg/L		09/06/17 08:26	09/06/17 23:59	1
Beryllium	ND		0.00200	0.000102	mg/L		09/06/17 08:26	09/06/17 23:59	1
Boron	0.04428	J	1.00	0.00339	mg/L		09/06/17 08:26	09/06/17 23:59	1
Cadmium	ND		0.00100	0.000152	mg/L		09/06/17 08:26	09/06/17 23:59	1
Calcium	ND		1.00	0.0412	mg/L		09/06/17 08:26	09/06/17 23:59	1
Chromium	ND		0.00300	0.000339	mg/L		09/06/17 08:26	09/06/17 23:59	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/06/17 08:26	09/06/17 23:59	1
Lead	ND		0.00500	0.0000675	mg/L		09/06/17 08:26	09/06/17 23:59	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/06/17 08:26	09/06/17 23:59	1
Selenium	ND		0.0100	0.000348	mg/L		09/06/17 08:26	09/06/17 23:59	1
Thallium	ND		0.00100	0.0000360	mg/L		09/06/17 08:26	09/06/17 23:59	1

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

Lab Sample ID: LCS 180-222124/2-A
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5099		mg/L		102	80 - 120
Arsenic	0.0400	0.03868		mg/L		97	80 - 120
Barium	2.00	1.838		mg/L		92	80 - 120
Beryllium	0.0500	0.05233		mg/L		105	80 - 120
Boron	1.00	1.048		mg/L		105	80 - 120
Cadmium	0.0500	0.05266		mg/L		105	80 - 120
Calcium	50.0	47.86		mg/L		96	80 - 120
Chromium	0.200	0.1715		mg/L		86	80 - 120
Cobalt	0.500	0.4590		mg/L		92	80 - 120
Lead	0.0200	0.02033		mg/L		102	80 - 120
Molybdenum	1.00	1.037		mg/L		104	80 - 120
Selenium	0.0100	0.009554	J	mg/L		96	80 - 120
Thallium	0.0500	0.04884		mg/L		98	80 - 120

Lab Sample ID: 180-69810-C-7-B MS
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000796	J B	0.500	0.4879		mg/L		97	75 - 125
Arsenic	0.0260	F1	0.0400	0.05337	F1	mg/L		68	75 - 125
Barium	1.04		2.00	2.890		mg/L		93	75 - 125
Beryllium	0.00508		0.0500	0.05662		mg/L		103	75 - 125
Boron	0.0885	J B	1.00	0.9851	J	mg/L		90	75 - 125
Cadmium	0.00359		0.0500	0.05297		mg/L		99	75 - 125
Calcium	119		50.0	163.0		mg/L		89	75 - 125
Chromium	0.0136		0.200	0.1739		mg/L		80	75 - 125
Cobalt	0.0525	F1	0.500	0.4192	F1	mg/L		73	75 - 125
Lead	0.193		0.0200	0.2390	4	mg/L		230	75 - 125
Molybdenum	ND		1.00	0.9267		mg/L		93	75 - 125
Selenium	0.00197	J F1	0.0100	0.009186	J F1	mg/L		72	75 - 125
Thallium	0.000196	J	0.0500	0.04906		mg/L		98	75 - 125

Lab Sample ID: 180-69810-C-7-C MSD
Matrix: Water
Analysis Batch: 222307

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 222124

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000796	J B	0.500	0.4895		mg/L		98	75 - 125	0	20
Arsenic	0.0260	F1	0.0400	0.05272	F1	mg/L		67	75 - 125	1	20
Barium	1.04		2.00	2.901		mg/L		93	75 - 125	0	20
Beryllium	0.00508		0.0500	0.05768		mg/L		105	75 - 125	2	20
Boron	0.0885	J B	1.00	1.013		mg/L		92	75 - 125	3	20
Cadmium	0.00359		0.0500	0.05332		mg/L		99	75 - 125	1	20
Calcium	119		50.0	164.2		mg/L		91	75 - 125	1	20
Chromium	0.0136		0.200	0.1740		mg/L		80	75 - 125	0	20
Cobalt	0.0525	F1	0.500	0.4232	F1	mg/L		74	75 - 125	1	20
Lead	0.193		0.0200	0.2369	4	mg/L		220	75 - 125	1	20

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

Lab Sample ID: 180-69810-C-7-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 222307 — **Prep Batch: 222124**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	ND		1.00	0.9295		mg/L		93	75 - 125	0	20
Selenium	0.00197	J F1	0.0100	0.009346	J F1	mg/L		74	75 - 125	2	20
Thallium	0.000196	J	0.0500	0.04874		mg/L		97	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-452586/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453207 — **Prep Batch: 452586**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/14/17 15:57	08/16/17 15:57	1

Lab Sample ID: LCS 490-452586/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453207 — **Prep Batch: 452586**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.027		ug/L		103	80 - 120

Lab Sample ID: 490-134486-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453207 — **Prep Batch: 452586**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.051		ug/L		105	75 - 125

Lab Sample ID: 490-134486-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453207 — **Prep Batch: 452586**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9890		ug/L		99	75 - 125	6	20

Method: 9040C - pH

Lab Sample ID: LCS 490-452629/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452629

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.030		SU		100	98 - 103

Lab Sample ID: 490-134402-A-3 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452629

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	10.5		10.56		SU		0.2	20

Method: 9040C - pH (Continued)

Lab Sample ID: 490-134402-A-3 DU
Matrix: Water
Analysis Batch: 452629

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Temperature	22.7			22.70		Degrees C				0	20

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

Lab Sample ID: MB 490-452904/1
Matrix: Water
Analysis Batch: 452904

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			08/16/17 15:05	1

Lab Sample ID: LCS 490-452904/2
Matrix: Water
Analysis Batch: 452904

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 490-452904/3
Matrix: Water
Analysis Batch: 452904

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	103.0		mg/L		103	90 - 110	0	20

Lab Sample ID: 490-134629-1 DU
Matrix: Ground Water
Analysis Batch: 452904

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	5100			5180		mg/L				2	20

Lab Sample ID: 490-134683-B-1 DU
Matrix: Water
Analysis Batch: 452904

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	1460			1486		mg/L				2	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-322676/1-A
Matrix: Water
Analysis Batch: 326360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322676

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1362		0.0655	0.0666	1.00	0.0662	pCi/L	08/17/17 08:40	09/08/17 07:15	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-322676/1-A
Matrix: Water
Analysis Batch: 326360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322676

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110	08/17/17 08:40	09/08/17 07:15	1

Lab Sample ID: LCS 160-322676/2-A
Matrix: Water
Analysis Batch: 326360

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322676

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.695		1.00	1.00	0.0678	pCi/L	101	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	92.3		40 - 110

Lab Sample ID: LCSD 160-322676/3-A
Matrix: Water
Analysis Batch: 326360

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 322676

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			9.60	8.238		0.867	1.00	0.0625	pCi/L	86	68 - 137	0.78	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	99.1		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-322679/1-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322679

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1220	U	0.190	0.190	1.00	0.320	pCi/L	08/17/17 08:52	08/24/17 20:15	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110	08/17/17 08:52	08/24/17 20:15	1
Y Carrier	83.0		40 - 110	08/17/17 08:52	08/24/17 20:15	1

Lab Sample ID: LCS 160-322679/2-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322679

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.0	14.68		1.56	1.00	0.327	pCi/L	113	56 - 140		

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

Lab Sample ID: LCS 160-322679/2-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322679

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	92.3		40 - 110
Y Carrier	86.4		40 - 110

Lab Sample ID: LCSD 160-322679/3-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 322679

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			13.0	13.83		1.46	1.00	0.298	pCi/L	106	56 - 140	0.28	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	99.1		40 - 110
Y Carrier	87.5		40 - 110

HPLC/IC

Analysis Batch: 453454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	9056A	
490-134629-2	MW-12	Total/NA	Ground Water	9056A	
490-134629-3	MW-13	Total/NA	Ground Water	9056A	
490-134629-4	MW-14	Total/NA	Ground Water	9056A	
490-134629-5	DUPE	Total/NA	Ground Water	9056A	
490-134629-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-453454/3	Method Blank	Total/NA	Water	9056A	
LCS 490-453454/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-453454/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 456432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	9056A	
490-134629-1	MW-11	Total/NA	Ground Water	9056A	
490-134629-2	MW-12	Total/NA	Ground Water	9056A	
490-134629-3	MW-13	Total/NA	Ground Water	9056A	
490-134629-4	MW-14	Total/NA	Ground Water	9056A	
490-134629-5	DUPE	Total/NA	Ground Water	9056A	
490-134629-5	DUPE	Total/NA	Ground Water	9056A	
MB 490-456432/3	Method Blank	Total/NA	Water	9056A	
LCS 490-456432/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-456432/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 222116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total Recoverable	Ground Water	3005A	
490-134629-2	MW-12	Total Recoverable	Ground Water	3005A	
490-134629-3	MW-13	Total Recoverable	Ground Water	3005A	
490-134629-4	MW-14	Total Recoverable	Ground Water	3005A	
490-134629-5	DUPE	Total Recoverable	Ground Water	3005A	
490-134629-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-222116/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-222116/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-69616-C-3-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-69616-C-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 222124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total Recoverable	Ground Water	3005A	
490-134629-2	MW-12	Total Recoverable	Ground Water	3005A	
490-134629-3	MW-13	Total Recoverable	Ground Water	3005A	
490-134629-4	MW-14	Total Recoverable	Ground Water	3005A	
490-134629-5	DUPE	Total Recoverable	Ground Water	3005A	
490-134629-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-222124/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-222124/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-69810-C-7-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-69810-C-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 222307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total Recoverable	Ground Water	6020A	222124
490-134629-2	MW-12	Total Recoverable	Ground Water	6020A	222124
490-134629-3	MW-13	Total Recoverable	Ground Water	6020A	222124
490-134629-4	MW-14	Total Recoverable	Ground Water	6020A	222124
490-134629-5	DUPE	Total Recoverable	Ground Water	6020A	222124
490-134629-6	FIELD BLANK	Total Recoverable	Water	6020A	222124
MB 180-222124/1-A	Method Blank	Total Recoverable	Water	6020A	222124
LCS 180-222124/2-A	Lab Control Sample	Total Recoverable	Water	6020A	222124
180-69810-C-7-B MS	Matrix Spike	Total Recoverable	Water	6020A	222124
180-69810-C-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	222124

Analysis Batch: 222351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total Recoverable	Ground Water	6010C	222116
490-134629-2	MW-12	Total Recoverable	Ground Water	6010C	222116
490-134629-3	MW-13	Total Recoverable	Ground Water	6010C	222116
490-134629-4	MW-14	Total Recoverable	Ground Water	6010C	222116
490-134629-5	DUPE	Total Recoverable	Ground Water	6010C	222116
490-134629-6	FIELD BLANK	Total Recoverable	Water	6010C	222116
MB 180-222116/1-A	Method Blank	Total Recoverable	Water	6010C	222116
LCS 180-222116/2-A	Lab Control Sample	Total Recoverable	Water	6010C	222116
180-69616-C-3-B MS	Matrix Spike	Total Recoverable	Water	6010C	222116
180-69616-C-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	222116

Prep Batch: 452586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	7470A	
490-134629-2	MW-12	Total/NA	Ground Water	7470A	
490-134629-3	MW-13	Total/NA	Ground Water	7470A	
490-134629-4	MW-14	Total/NA	Ground Water	7470A	
490-134629-5	DUPE	Total/NA	Ground Water	7470A	
490-134629-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-452586/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-452586/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-134486-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-134486-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 453207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	7470A	452586
490-134629-2	MW-12	Total/NA	Ground Water	7470A	452586
490-134629-3	MW-13	Total/NA	Ground Water	7470A	452586
490-134629-4	MW-14	Total/NA	Ground Water	7470A	452586
490-134629-5	DUPE	Total/NA	Ground Water	7470A	452586
490-134629-6	FIELD BLANK	Total/NA	Water	7470A	452586
MB 490-452586/1-A	Method Blank	Total/NA	Water	7470A	452586
LCS 490-452586/2-A	Lab Control Sample	Total/NA	Water	7470A	452586
490-134486-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	452586
490-134486-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	452586

General Chemistry

Analysis Batch: 452629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	9040C	
490-134629-2	MW-12	Total/NA	Ground Water	9040C	
490-134629-3	MW-13	Total/NA	Ground Water	9040C	
490-134629-4	MW-14	Total/NA	Ground Water	9040C	
490-134629-5	DUPE	Total/NA	Ground Water	9040C	
490-134629-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-452629/1	Lab Control Sample	Total/NA	Water	9040C	
490-134402-A-3 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 452904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-134629-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-134629-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-134629-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-134629-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-134629-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-452904/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-452904/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-452904/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-134629-1 DU	MW-11	Total/NA	Ground Water	SM 2540C	
490-134683-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 322676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	PrecSep-21	
490-134629-2	MW-12	Total/NA	Ground Water	PrecSep-21	
490-134629-3	MW-13	Total/NA	Ground Water	PrecSep-21	
490-134629-4	MW-14	Total/NA	Ground Water	PrecSep-21	
490-134629-5	DUPE	Total/NA	Ground Water	PrecSep-21	
490-134629-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-322676/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-322676/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-322676/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 322679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134629-1	MW-11	Total/NA	Ground Water	PrecSep_0	
490-134629-2	MW-12	Total/NA	Ground Water	PrecSep_0	
490-134629-3	MW-13	Total/NA	Ground Water	PrecSep_0	
490-134629-4	MW-14	Total/NA	Ground Water	PrecSep_0	
490-134629-5	DUPE	Total/NA	Ground Water	PrecSep_0	
490-134629-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-322679/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-322679/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-322679/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-11

Date Collected: 08/11/17 09:35
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-1

Matrix: Ground 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			453454	08/17/17 16:10	JML	TAL NSH
Total/NA	Analysis	9056A		100			456432	08/30/17 19:17	JML	TAL NSH
Total/NA	Analysis	9056A		200			456432	08/30/17 19:35	JML	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222116	09/06/17 08:14	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222351	09/07/17 15:34	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 01:58	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:02	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452629	08/14/17 19:19	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	452904	08/16/17 15:05	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.51 mL	1.0 g	322676	08/17/17 08:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			326360	09/08/17 07:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.51 mL	1.0 g	322679	08/17/17 08:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 20:16	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326428	09/08/17 15:56	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 08/11/17 12:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-2

Matrix: Ground 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			453454	08/17/17 16:45	JML	TAL NSH
Total/NA	Analysis	9056A		10			456432	08/30/17 19:53	JML	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222116	09/06/17 08:14	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222351	09/07/17 15:39	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 02:02	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:04	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452629	08/14/17 19:19	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452904	08/16/17 15:05	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.60 mL	1.0 g	322676	08/17/17 08:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			326360	09/08/17 07:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.60 mL	1.0 g	322679	08/17/17 08:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 20:16	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326428	09/08/17 15:56	RTM	TAL SL

Client Sample ID: MW-13

Date Collected: 08/11/17 12:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-3

Matrix: Ground 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			453454	08/17/17 16:57	JML	TAL NSH
Total/NA	Analysis	9056A		10			456432	08/30/17 20:11	JML	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222116	09/06/17 08:14	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222351	09/07/17 15:44	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 02:07	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:07	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452629	08/14/17 19:19	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452904	08/16/17 15:05	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.08 mL	1.0 g	322676	08/17/17 08:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			326360	09/08/17 07:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.08 mL	1.0 g	322679	08/17/17 08:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 20:16	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326428	09/08/17 15:56	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 08/11/17 10:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-4

Matrix: Ground 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			453454	08/17/17 17:08	JML	TAL NSH
Total/NA	Analysis	9056A		20			456432	08/30/17 20:29	JML	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222116	09/06/17 08:14	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222351	09/07/17 15:49	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 02:12	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:09	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452629	08/14/17 19:19	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	452904	08/16/17 15:05	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.55 mL	1.0 g	322676	08/17/17 08:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			326360	09/08/17 07:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.55 mL	1.0 g	322679	08/17/17 08:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 20:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326428	09/08/17 15:56	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: DUPE

Date Collected: 08/11/17 10:08
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-5

Matrix: Ground 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			453454	08/17/17 17:20	JML	TAL NSH
Total/NA	Analysis	9056A		100			456432	08/30/17 20:47	JML	TAL NSH
Total/NA	Analysis	9056A		200			456432	08/30/17 21:06	JML	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222116	09/06/17 08:14	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222351	09/07/17 15:55	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 02:16	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:11	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452629	08/14/17 19:19	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	452904	08/16/17 15:05	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.44 mL	1.0 g	322676	08/17/17 08:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			326360	09/08/17 07:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			1000.44 mL	1.0 g	322679	08/17/17 08:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 20:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326428	09/08/17 15:56	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 08/11/17 13:44
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134629-6

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			453454	08/17/17 17:32	JML	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	222116	09/06/17 08:14	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222351	09/07/17 16:00	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	222124	09/06/17 08:26	SES	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	222307	09/07/17 02:21	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	452586	08/14/17 15:57	JLJ	TAL NSH
Total/NA	Analysis	7470A		1			453207	08/16/17 17:13	JLJ	TAL NSH
Total/NA	Analysis	9040C		1			452629	08/14/17 19:19	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452904	08/16/17 15:05	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.63 mL	1.0 g	322676	08/17/17 08:40	LDE	TAL SL
Total/NA	Analysis	903.0		1			326359	09/08/17 07:13	ALD	TAL SL
Total/NA	Prep	PrecSep_0			999.63 mL	1.0 g	322679	08/17/17 08:52	LDE	TAL SL
Total/NA	Analysis	904.0		1			323927	08/24/17 20:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			326428	09/08/17 15:56	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: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

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: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

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		Ground Water	pH
9040C		Ground Water	Temperature
9040C		Water	pH
9040C		Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Ground Water	Total Dissolved Solids
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	12-31-17
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	09-14-17 *
West Virginia DEP	State Program	3	142	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19

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

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

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
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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	06-30-17 *
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	06-30-17 *
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
Washington	State Program	10	C592	08-30-17 *
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

490-134629 Chain of Custody

Cooler Received/Opened On 08-12-2017 @ 10:15

Time Samples Removed From Cooler 14:05 Time Samples Placed In Storage 1531 (2 Hour Window)

1. Tracking # 7332 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470366 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 (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 #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial) JZ

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) ASH

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) ASH

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

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
134629

COOLER RECEIPT FORM

Cooler Received/Opened On 8/12/2017 @01015

Time Samples Removed From Cooler 14:00 Time Samples Placed In Storage 1531 (2 Hour Window)

1. Tracking # 7376 (last 4 digits, FedEx) Courier: FEDEX

IR Gun ID 17960358 pH Strip Lot N/A Chlorine Strip Lot N/A

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) MK

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) 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

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: 08/11/2017**
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: Green Ash Pond CCR Groundwater-Round 7	☐ 1 week		
Site: Sebree Station, Green Ash Pond	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

490-68817-21291.2
___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, 9056A_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-11	8/11/2017	0935	G	Water	6	N	N	x	x	x	x	
MW-12	8/11/2017	1255	G	Water	6	N	N	x	x	x	x	
MW-13	8/11/2017	1205	G	Water	6	N	N	x	x	x	x	
MW-14	8/11/2017	1055	G	Water	6	N	N	x	x	x	x	
DUPE	8/11/2017	1008	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	8/11/2017	1344	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Loc: 490
134629

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: 1.0 Corr'd: _____ | Therm ID No.: _____

Relinquished by: Greg Quick	Company: BREC	Date/Time: 8/11/2017 1611	Received by:	Company: TAN	Date/Time: 8/12/17 1015
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 36 of 45

9/13/2017

40 CFR PART 257 Constituent List:

Appendix III to Part 257
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

BREE
8/11/2017
1611

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

TestA

THE LEADER IN ENVIRONMENTAL TESTING

Part # 159470-434 REIT2 EXP 04/18

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 14AUG17
ACTWGT: 10.00 LB MAN
CAD: 820425/CAFE3011

BILL RECIPIENT

490-134629 Waybill

TO **SHIPPING/RECEIVING**
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490-71927

FedEx Express

TRK# 0201 **7449 8096 5826**

TUE - 15 AUG 10:30A
PRIORITY OVERNIGHT

EV AGCA

15238
PA-US **PIT**

Uncorrected temp 17.4 °C
Thermometer ID 12
CF 0 Initials TB

MJ
Ice

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

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-61348.1
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 #: 490-134629-1
Address: 13715 Rider Trail North,	Due Date Requested: 9/12/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Green Ash Pond CCR Groundwater-Round 7	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)	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-11 (490-134629-1)	8/11/17	09:35 Central		Water			X	X	X	2	Historical Review required
MW-12 (490-134629-2)	8/11/17	12:55 Central		Water			X	X	X	2	Historical Review required
MW-13 (490-134629-3)	8/11/17	12:05 Central		Water			X	X	X	2	Historical Review required
MW-14 (490-134629-4)	8/11/17	10:55 Central		Water			X	X	X	2	Historical Review required
DUPE (490-134629-5)	8/11/17	10:08 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-134629-6)	8/11/17	13:44 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 compliance 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	Date/Time	Company
	8-14-17	TAN		8/15/17 0900	TASL
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:

9/13/2017

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

Chain of Custody Record



stAmerica
ADER IN ENVIRONMENTAL TESTING

346.1

Page 1 of 1

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamer
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 9/7/2017	Job #: 490-134629-1
City: Pittsburgh	TAT Requested (days):	
State, Zip: PA, 15238		
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:	
Email:	WO #:	
Project Name: Green Ash Pond CCR Groundwater-Round 7	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)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-11 (490-134629-1)	8/11/17	09:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-12 (490-134629-2)	8/11/17	12:55 Central		Water			X	X	1	Metals - run once, upload together.
MW-13 (490-134629-3)	8/11/17	12:05 Central		Water			X	X	1	Metals - run once, upload together.
MW-14 (490-134629-4)	8/11/17	10:55 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-134629-5)	8/11/17	10:08 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-134629-6)	8/11/17	13:44 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: 8.14.17	Company: TAL	Received by:	Date/Time: 8-15-17 900	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:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-134629-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 134629
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: 490-134629-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 134629
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 08/15/17 12:58 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: 490-134629-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 134629
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 08/15/17 03:34 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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	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: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-134629-1	MW-11	95.6
490-134629-2	MW-12	94.1
490-134629-3	MW-13	97.1
490-134629-4	MW-14	94.1
490-134629-5	DUPE	93.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-134629-6	FIELD BLANK	97.3
LCS 160-322676/2-A	Lab Control Sample	92.3
LCSD 160-322676/3-A	Lab Control Sample Dup	99.1
MB 160-322676/1-A	Method Blank	94.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-134629-1	MW-11	95.6	83.4
490-134629-2	MW-12	94.1	87.1
490-134629-3	MW-13	97.1	84.9
490-134629-4	MW-14	94.1	85.6
490-134629-5	DUPE	93.8	86.4

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-134629-6	FIELD BLANK	97.3	81.1
LCS 160-322679/2-A	Lab Control Sample	92.3	86.4
LCSD 160-322679/3-A	Lab Control Sample Dup	99.1	87.5
MB 160-322679/1-A	Method Blank	94.7	83.0

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 7

TestAmerica Job ID: 490-134629-1
SDG: Sebree Station, Green Ash Pond

Ba = Ba Carrier
Y = 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: 490-137311-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR Groundwater-Round 8
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
10/23/2017 1:29:50 PM

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

LINKS

Review your project results through TotalAccess

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-137311-1	MW-11	Ground Water	09/20/17 11:25	09/23/17 09:40
490-137311-2	MW-12	Ground Water	09/20/17 15:20	09/23/17 09:40
490-137311-3	MW-13	Ground Water	09/20/17 13:50	09/23/17 09:40
490-137311-4	MW-14	Ground Water	09/20/17 12:57	09/23/17 09:40
490-137311-5	DUPE	Ground Water	09/20/17 11:55	09/23/17 09:40
490-137311-6	BLANK	Water	09/20/17 15:48	09/23/17 09:40

Job ID: 490-137311-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-137311-1

Comments
No additional comments.

Receipt
The samples were received on 9/23/2017 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.8º C and 1.3º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-462845 contained Chloride 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 490-462845 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-11 (490-137311-1), MW-12 (490-137311-2), MW-13 (490-137311-3), MW-14 (490-137311-4) and DUPE (490-137311-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-463479 contained fluoride 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 160-329229: 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-11 (490-137311-1), MW-12 (490-137311-2), MW-13 (490-137311-3), MW-14 (490-137311-4), DUPE (490-137311-5) and BLANK (490-137311-6)

Method(s) PrecSep_0: Radium 228 Prep batch 160-329234: 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-11 (490-137311-1), MW-12 (490-137311-2), MW-13 (490-137311-3), MW-14 (490-137311-4), DUPE (490-137311-5) and BLANK (490-137311-6)

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

Metals
Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 490-462837 and analytical batch 490-463073 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.

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: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
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
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

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-11

Date Collected: 09/20/17 11:25
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1520	B	600	40.0	mg/L			09/25/17 15:47	200
Fluoride	0.891	J B	5.00	0.0500	mg/L			09/27/17 17:32	5
Sulfate	797	J	1000	6.00	mg/L			09/25/17 15:47	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0596		0.0500	0.00959	mg/L		09/27/17 08:46	09/28/17 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000705	J B	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 11:08	1
Arsenic	0.00110	J B	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 11:08	1
Barium	0.0293	J	0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 11:08	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 11:08	1
Boron	0.802	J	1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:17	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 11:08	1
Calcium	299		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 11:08	1
Chromium	0.000457	J	0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 11:08	1
Cobalt	0.000619	J	0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 11:08	1
Lead	ND		0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 11:08	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 11:08	1
Selenium	0.000382	J	0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 11:08	1
Thallium	ND		0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 11:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/25/17 12:52	09/26/17 00:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.11	^	0.100	0.100	SU			09/28/17 14:58	1
Temperature	20.0		0.100	0.100	Degrees C			09/28/17 14:58	1
Total Dissolved Solids	4880		100	70.0	mg/L			09/26/17 13:13	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	0.573		0.129	0.139	1.00	0.0785	pCi/L	09/27/17 09:50	10/19/17 06:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:08*	*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	1.51		0.388	0.412	1.00	0.502	pCi/L	09/27/17 10:04	10/03/17 16:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*

Client Sample ID: MW-11
Date Collected: 09/20/17 11:25
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-1
Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*80.7*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*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	**2.08**		0.409	0.435	5.00	0.502	pCi/L		10/23/17 10:32	1

Client Sample ID: MW-12

Date Collected: 09/20/17 15:20
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.8	B	3.00	0.200	mg/L			09/25/17 14:28	1
Fluoride	0.415	J B	1.00	0.0100	mg/L			09/27/17 17:43	1
Sulfate	25.3	J	50.0	0.300	mg/L			09/25/17 15:56	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0229	J	0.0500	0.00959	mg/L		09/27/17 08:46	09/28/17 11:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000576	J B	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 11:11	1
Arsenic	0.00104	J B	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 11:11	1
Barium	0.160	J	0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 11:11	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 11:11	1
Boron	0.334	J	1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:22	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 11:11	1
Calcium	94.5		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 11:11	1
Chromium	0.000360	J	0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 11:11	1
Cobalt	0.000191	J	0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 11:11	1
Lead	0.0000930	J	0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 11:11	1
Molybdenum	0.00827	J	0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 11:11	1
Selenium	ND		0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 11:11	1
Thallium	ND		0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 11:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/25/17 12:52	09/26/17 00:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.46	^	0.100	0.100	SU			09/28/17 14:58	1
Temperature	20.6		0.100	0.100	Degrees C			09/28/17 14:58	1
Total Dissolved Solids	758		10.0	7.00	mg/L			09/26/17 13:13	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	0.210		0.0818	0.0839	1.00	0.0758	pCi/L	09/27/17 09:50	10/19/17 06:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:08*	*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	0.199	U	0.267	0.267	1.00	0.444	pCi/L	09/27/17 10:04	10/03/17 16:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*

Client Sample ID: MW-12

Date Collected: 09/20/17 15:20
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-2

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*81.5*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*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	0.409	U	0.279	0.280	5.00	0.444	pCi/L		10/23/17 10:32	1

Client Sample ID: MW-13

Date Collected: 09/20/17 13:50
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.3	J B	30.0	2.00	mg/L			09/25/17 16:06	10
Fluoride	0.267	J B	1.00	0.0100	mg/L			09/27/17 17:55	1
Sulfate	88.0		50.0	0.300	mg/L			09/25/17 16:06	10

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		09/27/17 08:46	09/28/17 11:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000641	J B	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 11:13	1
Arsenic	0.000984	J B	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 11:13	1
Barium	0.0817	J	0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 11:13	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 11:13	1
Boron	0.0376	J	1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:27	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 11:13	1
Calcium	94.3		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 11:13	1
Chromium	0.000561	J	0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 11:13	1
Cobalt	0.000981	J	0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 11:13	1
Lead	ND		0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 11:13	1
Molybdenum	0.00113	J	0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 11:13	1
Selenium	ND		0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 11:13	1
Thallium	ND		0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 11:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/25/17 12:52	09/26/17 00:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.98	^	0.100	0.100	SU			09/28/17 14:58	1
Temperature	20.9		0.100	0.100	Degrees C			09/28/17 14:58	1
Total Dissolved Solids	727		10.0	7.00	mg/L			09/26/17 13:13	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	0.254		0.0876	0.0906	1.00	0.0752	pCi/L	09/27/17 09:50	10/19/17 06:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:08*	*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	0.495		0.275	0.279	1.00	0.415	pCi/L	09/27/17 10:04	10/03/17 16:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*

Client Sample ID: MW-13

Date Collected: 09/20/17 13:50
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-3

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*79.3*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*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	**0.749**		0.289	0.293	5.00	0.415	pCi/L		10/23/17 10:32	1

Client Sample ID: MW-14

Date Collected: 09/20/17 12:57
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	230	B	150	10.0	mg/L			09/25/17 16:16	50
Fluoride	0.312	J B	1.00	0.0100	mg/L			09/27/17 18:06	1
Sulfate	198	J	250	1.50	mg/L			09/25/17 16:16	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0496	J	0.0500	0.00959	mg/L		09/27/17 08:46	09/28/17 11:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000757	J B	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 11:16	1
Arsenic	0.000786	J B	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 11:16	1
Barium	0.0627	J	0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 11:16	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 11:16	1
Boron	0.273	J	1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:32	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 11:16	1
Calcium	187		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 11:16	1
Chromium	0.000421	J	0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 11:16	1
Cobalt	0.000221	J	0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 11:16	1
Lead	0.000133	J	0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 11:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 11:16	1
Selenium	ND		0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 11:16	1
Thallium	ND		0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 11:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/25/17 12:52	09/26/17 00:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.33	^	0.100	0.100	SU			09/28/17 14:58	1
Temperature	20.5		0.100	0.100	Degrees C			09/28/17 14:58	1
Total Dissolved Solids	1240		20.0	14.0	mg/L			09/26/17 13:13	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	0.862		0.154	0.173	1.00	0.0878	pCi/L	09/27/17 09:50	10/19/17 06:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:08*	*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	0.935		0.291	0.304	1.00	0.383	pCi/L	09/27/17 10:04	10/03/17 16:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*

Client Sample ID: MW-14
Date Collected: 09/20/17 12:57
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-4
Matrix: Ground Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	82.2		40 - 110	09/27/17 10:04	10/03/17 16:10	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	1.80		0.329	0.350	5.00	0.383	pCi/L		10/23/17 10:32	1

Client Sample ID: DUPE

Date Collected: 09/20/17 11:55
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1550	B	600	40.0	mg/L			09/25/17 16:35	200
Fluoride	0.427	J B	5.00	0.0500	mg/L			09/27/17 18:18	5
Sulfate	837	J	1000	6.00	mg/L			09/25/17 16:35	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0577		0.0500	0.00959	mg/L		09/27/17 08:46	09/28/17 11:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000599	J B	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 11:19	1
Arsenic	0.000824	J B	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 11:19	1
Barium	0.0268	J	0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 11:19	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 11:19	1
Boron	0.835	J	1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:37	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 11:19	1
Calcium	295		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 11:19	1
Chromium	0.000371	J	0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 11:19	1
Cobalt	0.000457	J	0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 11:19	1
Lead	ND		0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 11:19	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 11:19	1
Selenium	0.000692	J	0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 11:19	1
Thallium	ND		0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 11:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/25/17 12:52	09/26/17 00:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.05		0.100	0.100	SU			09/28/17 15:16	1
Temperature	20.8		0.100	0.100	Degrees C			09/28/17 15:16	1
Total Dissolved Solids	4650		100	70.0	mg/L			09/26/17 13:13	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	0.486		0.119	0.127	1.00	0.0786	pCi/L	09/27/17 09:50	10/19/17 06:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:07*	*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	1.27		0.308	0.329	1.00	0.364	pCi/L	09/27/17 10:04	10/03/17 16:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*

Client Sample ID: DUPE

Date Collected: 09/20/17 11:55
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-5

Matrix: Ground Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*80.4*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*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	**1.75**		0.330	0.353	5.00	0.364	pCi/L		10/23/17 10:32	1

Client Sample ID: BLANK

Date Collected: 09/20/17 15:48
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.449**	**J B**	3.00	0.200	mg/L			09/25/17 15:08	1
Fluoride	**0.0555**	**J B**	1.00	0.0100	mg/L			09/27/17 18:29	1
Sulfate	ND		5.00	0.0300	mg/L			09/25/17 15:08	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		09/27/17 08:46	09/28/17 11:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000846**	**J B**	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 11:21	1
Arsenic	**0.000197**	**J B**	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 11:21	1
Barium	ND		0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 11:21	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 11:21	1
Boron	**0.00708**	**J**	1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:42	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 11:21	1
Calcium	ND		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 11:21	1
Chromium	**0.000411**	**J**	0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 11:21	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 11:21	1
Lead	**0.0000810**	**J**	0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 11:21	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 11:21	1
Selenium	**0.000482**	**J**	0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 11:21	1
Thallium	ND		0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 11:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.167**	**J**	0.200	0.100	ug/L		09/25/17 12:53	09/26/17 00:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.46**		0.100	0.100	SU			09/28/17 15:16	1
Temperature	**20.5**		0.100	0.100	Degrees C			09/28/17 15:16	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			09/26/17 13:13	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	0.0505	U	0.0508	0.0510	1.00	0.0779	pCi/L	09/27/17 09:50	10/19/17 06:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:07*	*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	-0.0989	U	0.180	0.181	1.00	0.345	pCi/L	09/27/17 10:04	10/03/17 16:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:11*	*1*

Client Sample ID: BLANK

Date Collected: 09/20/17 15:48
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-6

Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*87.9*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:11*	*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	-0.0484	U	0.187	0.188	5.00	0.345	pCi/L		10/23/17 10:32	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-462845/3
Matrix: Water
Analysis Batch: 462845

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3547	J	3.00	0.200	mg/L			09/25/17 13:01	1
Sulfate	ND		5.00	0.0300	mg/L			09/25/17 13:01	1

Lab Sample ID: LCS 490-462845/4
Matrix: Water
Analysis Batch: 462845

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	9.952		mg/L		99	80 - 120
Sulfate	10.0	9.585		mg/L		96	80 - 120

Lab Sample ID: LCSD 490-462845/5
Matrix: Water
Analysis Batch: 462845

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	9.965		mg/L		100	80 - 120	0	20
Sulfate	10.0	9.641		mg/L		96	80 - 120	1	20

Lab Sample ID: 490-137120-I-1 MS
Matrix: Water
Analysis Batch: 462845

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	19.1	B	2.00	17.73	4	mg/L		-67	80 - 120
Sulfate	8.96		2.00	9.171	4	mg/L		11	80 - 120

Lab Sample ID: 490-137120-I-1 MSD
Matrix: Water
Analysis Batch: 462845

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	19.1	B	2.00	17.86	4	mg/L		-60	80 - 120	1	20
Sulfate	8.96		2.00	9.197	4	mg/L		12	80 - 120	0	20

Lab Sample ID: MB 490-463479/3
Matrix: Water
Analysis Batch: 463479

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.04939	J	1.00	0.0100	mg/L			09/27/17 15:59	1

Lab Sample ID: LCS 490-463479/4
Matrix: Water
Analysis Batch: 463479

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	0.9332	J	mg/L		93	80 - 120

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

Lab Sample ID: LCSD 490-463479/5
Matrix: Water
Analysis Batch: 463479

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			1.00	0.9466	J	mg/L		94	80 - 120	1	20

Lab Sample ID: 490-137120-I-1 MS
Matrix: Water
Analysis Batch: 463479

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		
Fluoride	0.232	J B F1	0.200	0.3564	J F1	mg/L		62	80 - 120		

Lab Sample ID: 490-137120-I-1 MSD
Matrix: Water
Analysis Batch: 463479

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
Fluoride	0.232	J B F1	0.200	0.3598	J F1	mg/L		64	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-224111/1-A
Matrix: Water
Analysis Batch: 224330

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 224111

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/27/17 08:46	09/28/17 10:03	1

Lab Sample ID: LCS 180-224111/2-A
Matrix: Water
Analysis Batch: 224330

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 224111

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium			1.00	1.025		mg/L		103	80 - 120		

Lab Sample ID: 180-70659-C-2-B MS
Matrix: Water
Analysis Batch: 224330

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 224111

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium	0.0766		1.00	1.146		mg/L		107	75 - 125		

Lab Sample ID: 180-70659-C-2-C MSD
Matrix: Water
Analysis Batch: 224330

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 224111

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0766		1.00	1.157		mg/L		108	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-224109/1-A
Matrix: Water
Analysis Batch: 225133

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 224109

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.001137	J	0.00200	0.0000213	mg/L		09/27/17 08:37	10/06/17 09:59	1
Arsenic	0.0001280	J	0.00500	0.000118	mg/L		09/27/17 08:37	10/06/17 09:59	1
Barium	ND		0.200	0.000270	mg/L		09/27/17 08:37	10/06/17 09:59	1
Beryllium	ND		0.00200	0.000102	mg/L		09/27/17 08:37	10/06/17 09:59	1
Cadmium	ND		0.00100	0.000152	mg/L		09/27/17 08:37	10/06/17 09:59	1
Calcium	ND		1.00	0.0412	mg/L		09/27/17 08:37	10/06/17 09:59	1
Chromium	ND		0.00300	0.000339	mg/L		09/27/17 08:37	10/06/17 09:59	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/27/17 08:37	10/06/17 09:59	1
Lead	ND		0.00500	0.0000675	mg/L		09/27/17 08:37	10/06/17 09:59	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/27/17 08:37	10/06/17 09:59	1
Selenium	ND		0.0100	0.000348	mg/L		09/27/17 08:37	10/06/17 09:59	1
Thallium	0.00003900	J	0.00100	0.0000360	mg/L		09/27/17 08:37	10/06/17 09:59	1

Lab Sample ID: MB 180-224109/1-A
Matrix: Water
Analysis Batch: 225183

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 224109

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		09/27/17 08:37	10/08/17 06:07	1

Lab Sample ID: LCS 180-224109/2-A
Matrix: Water
Analysis Batch: 225133

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 224109

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5132		mg/L		103	80 - 120
Arsenic	0.0400	0.04104		mg/L		103	80 - 120
Barium	2.00	1.881		mg/L		94	80 - 120
Beryllium	0.0500	0.04516		mg/L		90	80 - 120
Cadmium	0.0500	0.05548		mg/L		111	80 - 120
Calcium	50.0	51.33		mg/L		103	80 - 120
Chromium	0.200	0.1965		mg/L		98	80 - 120
Cobalt	0.500	0.4992		mg/L		100	80 - 120
Lead	0.0200	0.02109		mg/L		105	80 - 120
Molybdenum	1.00	0.9877		mg/L		99	80 - 120
Selenium	0.0100	0.01010		mg/L		101	80 - 120
Thallium	0.0500	0.05213		mg/L		104	80 - 120

Lab Sample ID: LCS 180-224109/2-A
Matrix: Water
Analysis Batch: 225183

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 224109

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.018		mg/L		102	80 - 120

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

Lab Sample ID: 180-70552-G-7-C MS
Matrix: Water
Analysis Batch: 225133

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 224109

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00176	J B	0.500	0.5222		mg/L		104	75 - 125
Arsenic	0.0133	B	0.0400	0.05434		mg/L		103	75 - 125
Barium	0.339		2.00	2.214		mg/L		94	75 - 125
Beryllium	ND		0.0500	0.04719		mg/L		94	75 - 125
Cadmium	ND		0.0500	0.05573		mg/L		111	75 - 125
Calcium	57.6		50.0	110.4		mg/L		105	75 - 125
Chromium	0.000625	J	0.200	0.1968		mg/L		98	75 - 125
Cobalt	0.00154	J	0.500	0.5039		mg/L		100	75 - 125
Lead	ND		0.0200	0.02143		mg/L		107	75 - 125
Molybdenum	ND		1.00	1.008		mg/L		101	75 - 125
Selenium	ND		0.0100	0.009982	J	mg/L		100	75 - 125
Thallium	ND		0.0500	0.05342		mg/L		107	75 - 125

Lab Sample ID: 180-70552-G-7-B DU
Matrix: Water
Analysis Batch: 225133

Client Sample ID: Duplicate
Prep Type: Total Recoverable
Prep Batch: 224109

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	0.00176	J B	0.001134	J F5	mg/L		43	20
Arsenic	0.0133	B	0.01308		mg/L		2	20
Barium	0.339		0.3357		mg/L		0.9	20
Beryllium	ND		ND		mg/L		NC	20
Cadmium	ND		ND		mg/L		NC	20
Calcium	57.6		56.54		mg/L		2	20
Chromium	0.000625	J	0.0004560	J F5	mg/L		31	20
Cobalt	0.00154	J	0.001489	J	mg/L		3	20
Lead	ND		0.0004260	J	mg/L		NC	20
Molybdenum	ND		ND		mg/L		NC	20
Selenium	ND		ND		mg/L		NC	20
Thallium	ND		ND		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-462837/1-A
Matrix: Water
Analysis Batch: 463073

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 462837

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/25/17 12:52	09/25/17 23:33	1

Lab Sample ID: LCS 490-462837/2-A
Matrix: Water
Analysis Batch: 463073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 462837

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.8317		ug/L		83	80 - 120

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

Lab Sample ID: LCSD 490-462837/3-A
Matrix: Water
Analysis Batch: 463073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 462837

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.9439		ug/L		94	80 - 120	13	20

Lab Sample ID: 490-137275-A-1-B MS
Matrix: Water
Analysis Batch: 463073

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 462837

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1 F2	1.00	0.7343	F1	ug/L		73	75 - 125

Lab Sample ID: 490-137275-A-1-C MSD
Matrix: Water
Analysis Batch: 463073

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 462837

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	0.5909	F1 F2	ug/L		59	75 - 125	22	20

Method: 9040C - pH

Lab Sample ID: LCS 490-463870/12
Matrix: Water
Analysis Batch: 463870

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: 490-137310-F-23 DU
Matrix: Water
Analysis Batch: 463870

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.74	^	7.740	^	SU		0	20
Temperature	19.8		19.80		Degrees C		0	20

Lab Sample ID: LCS 490-463879/7
Matrix: Water
Analysis Batch: 463879

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: 490-137311-5 DU
Matrix: Ground Water
Analysis Batch: 463879

Client Sample ID: DUPE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.05		7.050		SU		0	20
Temperature	20.8		20.80		Degrees C		0	20

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

Lab Sample ID: MB 490-462650/1
Matrix: Water
Analysis Batch: 462650

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			09/26/17 13:13	1

Lab Sample ID: LCS 490-462650/2
Matrix: Water
Analysis Batch: 462650

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: 490-137266-A-1 DU
Matrix: Water
Analysis Batch: 462650

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	9080		9240		mg/L		2	20

Lab Sample ID: 490-137266-A-14 DU
Matrix: Water
Analysis Batch: 462650

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	14100		14300		mg/L		1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-329229/1-A
Matrix: Water
Analysis Batch: 332589

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 329229

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02482	U	0.0301	0.0302	1.00	0.0470	pCi/L	09/27/17 09:50	10/19/17 06:08	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/27/17 09:50*	*10/19/17 06:08*	*1*

Lab Sample ID: LCS 160-329229/2-A
Matrix: Water
Analysis Batch: 332589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 329229

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	9.60	9.564		0.988	1.00	0.0672	pCi/L	100	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.5*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-329229/3-A
Matrix: Water
Analysis Batch: 332589

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 329229

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			9.60	9.064		0.942	1.00	0.0746	pCi/L	94	68 - 137	0.26	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-329234/1-A
Matrix: Water
Analysis Batch: 330102

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 329234

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1069	U	0.200	0.201	1.00	0.342	pCi/L	09/27/17 10:04	10/03/17 16:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*
Y Carrier	*80.0*		*40 - 110*	*09/27/17 10:04*	*10/03/17 16:10*	*1*

Lab Sample ID: LCS 160-329234/2-A
Matrix: Water
Analysis Batch: 330102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 329234

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.8	13.73		1.48	1.00	0.377	pCi/L	107	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.5*		*40 - 110*
Y Carrier	*81.5*		*40 - 110*

Lab Sample ID: LCSD 160-329234/3-A
Matrix: Water
Analysis Batch: 330102

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 329234

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			12.8	13.95		1.50	1.00	0.369	pCi/L	109	56 - 140	0.07	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

HPLC/IC

Analysis Batch: 462845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	9056A	
490-137311-2	MW-12	Total/NA	Ground Water	9056A	
490-137311-2	MW-12	Total/NA	Ground Water	9056A	
490-137311-3	MW-13	Total/NA	Ground Water	9056A	
490-137311-4	MW-14	Total/NA	Ground Water	9056A	
490-137311-5	DUPE	Total/NA	Ground Water	9056A	
490-137311-6	BLANK	Total/NA	Water	9056A	
MB 490-462845/3	Method Blank	Total/NA	Water	9056A	
LCS 490-462845/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-462845/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-137120-I-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-137120-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 463479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	9056A	
490-137311-2	MW-12	Total/NA	Ground Water	9056A	
490-137311-3	MW-13	Total/NA	Ground Water	9056A	
490-137311-4	MW-14	Total/NA	Ground Water	9056A	
490-137311-5	DUPE	Total/NA	Ground Water	9056A	
490-137311-6	BLANK	Total/NA	Water	9056A	
MB 490-463479/3	Method Blank	Total/NA	Water	9056A	
LCS 490-463479/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-463479/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-137120-I-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-137120-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 224109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total Recoverable	Ground Water	3005A	
490-137311-2	MW-12	Total Recoverable	Ground Water	3005A	
490-137311-3	MW-13	Total Recoverable	Ground Water	3005A	
490-137311-4	MW-14	Total Recoverable	Ground Water	3005A	
490-137311-5	DUPE	Total Recoverable	Ground Water	3005A	
490-137311-6	BLANK	Total Recoverable	Water	3005A	
MB 180-224109/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-224109/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70552-G-7-C MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70552-G-7-B DU	Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 224111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total Recoverable	Ground Water	3005A	
490-137311-2	MW-12	Total Recoverable	Ground Water	3005A	
490-137311-3	MW-13	Total Recoverable	Ground Water	3005A	
490-137311-4	MW-14	Total Recoverable	Ground Water	3005A	
490-137311-5	DUPE	Total Recoverable	Ground Water	3005A	
490-137311-6	BLANK	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 224111 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-224111/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-224111/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70659-C-2-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70659-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 224330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total Recoverable	Ground Water	6010C	224111
490-137311-2	MW-12	Total Recoverable	Ground Water	6010C	224111
490-137311-3	MW-13	Total Recoverable	Ground Water	6010C	224111
490-137311-4	MW-14	Total Recoverable	Ground Water	6010C	224111
490-137311-5	DUPE	Total Recoverable	Ground Water	6010C	224111
490-137311-6	BLANK	Total Recoverable	Water	6010C	224111
MB 180-224111/1-A	Method Blank	Total Recoverable	Water	6010C	224111
LCS 180-224111/2-A	Lab Control Sample	Total Recoverable	Water	6010C	224111
180-70659-C-2-B MS	Matrix Spike	Total Recoverable	Water	6010C	224111
180-70659-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	224111

Analysis Batch: 225133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total Recoverable	Ground Water	6020A	224109
490-137311-2	MW-12	Total Recoverable	Ground Water	6020A	224109
490-137311-3	MW-13	Total Recoverable	Ground Water	6020A	224109
490-137311-4	MW-14	Total Recoverable	Ground Water	6020A	224109
490-137311-5	DUPE	Total Recoverable	Ground Water	6020A	224109
490-137311-6	BLANK	Total Recoverable	Water	6020A	224109
MB 180-224109/1-A	Method Blank	Total Recoverable	Water	6020A	224109
LCS 180-224109/2-A	Lab Control Sample	Total Recoverable	Water	6020A	224109
180-70552-G-7-C MS	Matrix Spike	Total Recoverable	Water	6020A	224109
180-70552-G-7-B DU	Duplicate	Total Recoverable	Water	6020A	224109

Analysis Batch: 225183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total Recoverable	Ground Water	6020A	224109
490-137311-2	MW-12	Total Recoverable	Ground Water	6020A	224109
490-137311-3	MW-13	Total Recoverable	Ground Water	6020A	224109
490-137311-4	MW-14	Total Recoverable	Ground Water	6020A	224109
490-137311-5	DUPE	Total Recoverable	Ground Water	6020A	224109
490-137311-6	BLANK	Total Recoverable	Water	6020A	224109
MB 180-224109/1-A	Method Blank	Total Recoverable	Water	6020A	224109
LCS 180-224109/2-A	Lab Control Sample	Total Recoverable	Water	6020A	224109

Prep Batch: 462837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	7470A	
490-137311-2	MW-12	Total/NA	Ground Water	7470A	
490-137311-3	MW-13	Total/NA	Ground Water	7470A	
490-137311-4	MW-14	Total/NA	Ground Water	7470A	
490-137311-5	DUPE	Total/NA	Ground Water	7470A	
490-137311-6	BLANK	Total/NA	Water	7470A	
MB 490-462837/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 462837 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-462837/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-462837/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-137275-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-137275-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 463073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	7470A	462837
490-137311-2	MW-12	Total/NA	Ground Water	7470A	462837
490-137311-3	MW-13	Total/NA	Ground Water	7470A	462837
490-137311-4	MW-14	Total/NA	Ground Water	7470A	462837
490-137311-5	DUPE	Total/NA	Ground Water	7470A	462837
490-137311-6	BLANK	Total/NA	Water	7470A	462837
MB 490-462837/1-A	Method Blank	Total/NA	Water	7470A	462837
LCS 490-462837/2-A	Lab Control Sample	Total/NA	Water	7470A	462837
LCSD 490-462837/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	462837
490-137275-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	462837
490-137275-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	462837

General Chemistry

Analysis Batch: 462650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-137311-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-137311-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-137311-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-137311-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-137311-6	BLANK	Total/NA	Water	SM 2540C	
MB 490-462650/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-462650/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-137266-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-137266-A-14 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 463870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	9040C	
490-137311-2	MW-12	Total/NA	Ground Water	9040C	
490-137311-3	MW-13	Total/NA	Ground Water	9040C	
490-137311-4	MW-14	Total/NA	Ground Water	9040C	
LCS 490-463870/12	Lab Control Sample	Total/NA	Water	9040C	
490-137310-F-23 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 463879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-5	DUPE	Total/NA	Ground Water	9040C	
490-137311-6	BLANK	Total/NA	Water	9040C	
LCS 490-463879/7	Lab Control Sample	Total/NA	Water	9040C	
490-137311-5 DU	DUPE	Total/NA	Ground Water	9040C	

Rad

Prep Batch: 329229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	PrecSep-21	
490-137311-2	MW-12	Total/NA	Ground Water	PrecSep-21	
490-137311-3	MW-13	Total/NA	Ground Water	PrecSep-21	
490-137311-4	MW-14	Total/NA	Ground Water	PrecSep-21	
490-137311-5	DUPE	Total/NA	Ground Water	PrecSep-21	
490-137311-6	BLANK	Total/NA	Water	PrecSep-21	
MB 160-329229/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-329229/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-329229/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 329234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137311-1	MW-11	Total/NA	Ground Water	PrecSep_0	
490-137311-2	MW-12	Total/NA	Ground Water	PrecSep_0	
490-137311-3	MW-13	Total/NA	Ground Water	PrecSep_0	
490-137311-4	MW-14	Total/NA	Ground Water	PrecSep_0	
490-137311-5	DUPE	Total/NA	Ground Water	PrecSep_0	
490-137311-6	BLANK	Total/NA	Water	PrecSep_0	
MB 160-329234/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-329234/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-329234/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-11

Date Collected: 09/20/17 11:25
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-1

Matrix: Ground 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		200	5 mL	1.0 mL	462845	09/25/17 15:47	SW1	TAL NSH
Total/NA	Analysis	9056A		5			463479	09/27/17 17:32	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224111	09/27/17 08:46	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224330	09/28/17 11:06	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225133	10/06/17 11:08	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225183	10/08/17 06:17	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	462837	09/25/17 12:52	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463073	09/26/17 00:06	RDF	TAL NSH
Total/NA	Analysis	9040C		1			463870	09/28/17 14:58	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	462650	09/26/17 13:13	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.23 mL	1.0 g	329229	09/27/17 09:50	LDE	TAL SL
Total/NA	Analysis	903.0		1			332589	10/19/17 06:08	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.23 mL	1.0 g	329234	09/27/17 10:04	LDE	TAL SL
Total/NA	Analysis	904.0		1			330102	10/03/17 16:10	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333391	10/23/17 10:32	RTM	TAL SL

Client Sample ID: MW-12

Date Collected: 09/20/17 15:20
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-2

Matrix: Ground 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	5 mL	1.0 mL	462845	09/25/17 14:28	SW1	TAL NSH
Total/NA	Analysis	9056A		10	5 mL	1.0 mL	462845	09/25/17 15:56	SW1	TAL NSH
Total/NA	Analysis	9056A		1			463479	09/27/17 17:43	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224111	09/27/17 08:46	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224330	09/28/17 11:12	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225133	10/06/17 11:11	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225183	10/08/17 06:22	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	462837	09/25/17 12:52	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463073	09/26/17 00:09	RDF	TAL NSH
Total/NA	Analysis	9040C		1			463870	09/28/17 14:58	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	462650	09/26/17 13:13	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.44 mL	1.0 g	329229	09/27/17 09:50	LDE	TAL SL
Total/NA	Analysis	903.0		1			332589	10/19/17 06:08	CDR	TAL SL
Total/NA	Prep	PrecSep_0			999.44 mL	1.0 g	329234	09/27/17 10:04	LDE	TAL SL
Total/NA	Analysis	904.0		1			330102	10/03/17 16:10	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333391	10/23/17 10:32	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13

Date Collected: 09/20/17 13:50
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-3

Matrix: Ground 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		10	5 mL	1.0 mL	462845	09/25/17 16:06	SW1	TAL NSH
Total/NA	Analysis	9056A		1			463479	09/27/17 17:55	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224111	09/27/17 08:46	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224330	09/28/17 11:17	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225133	10/06/17 11:13	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225183	10/08/17 06:27	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	462837	09/25/17 12:52	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463073	09/26/17 00:12	RDF	TAL NSH
Total/NA	Analysis	9040C		1			463870	09/28/17 14:58	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	462650	09/26/17 13:13	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.53 mL	1.0 g	329229	09/27/17 09:50	LDE	TAL SL
Total/NA	Analysis	903.0		1			332589	10/19/17 06:08	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.53 mL	1.0 g	329234	09/27/17 10:04	LDE	TAL SL
Total/NA	Analysis	904.0		1			330102	10/03/17 16:10	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333391	10/23/17 10:32	RTM	TAL SL

Client Sample ID: MW-14

Date Collected: 09/20/17 12:57
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-4

Matrix: Ground 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	5 mL	1.0 mL	462845	09/25/17 16:16	SW1	TAL NSH
Total/NA	Analysis	9056A		1			463479	09/27/17 18:06	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224111	09/27/17 08:46	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224330	09/28/17 11:22	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225133	10/06/17 11:16	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225183	10/08/17 06:32	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	462837	09/25/17 12:52	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463073	09/26/17 00:15	RDF	TAL NSH
Total/NA	Analysis	9040C		1			463870	09/28/17 14:58	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	462650	09/26/17 13:13	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.56 mL	1.0 g	329229	09/27/17 09:50	LDE	TAL SL
Total/NA	Analysis	903.0		1			332589	10/19/17 06:08	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.56 mL	1.0 g	329234	09/27/17 10:04	LDE	TAL SL
Total/NA	Analysis	904.0		1			330102	10/03/17 16:10	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333391	10/23/17 10:32	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 09/20/17 11:55
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-5

Matrix: Ground 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		200	5 mL	1.0 mL	462845	09/25/17 16:35	SW1	TAL NSH
Total/NA	Analysis	9056A		5			463479	09/27/17 18:18	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224111	09/27/17 08:46	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224330	09/28/17 11:28	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225133	10/06/17 11:19	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225183	10/08/17 06:37	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	462837	09/25/17 12:52	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463073	09/26/17 00:17	RDF	TAL NSH
Total/NA	Analysis	9040C		1			463879	09/28/17 15:16	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	462650	09/26/17 13:13	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.25 mL	1.0 g	329229	09/27/17 09:50	LDE	TAL SL
Total/NA	Analysis	903.0		1			332589	10/19/17 06:07	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	329234	09/27/17 10:04	LDE	TAL SL
Total/NA	Analysis	904.0		1			330102	10/03/17 16:10	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333391	10/23/17 10:32	RTM	TAL SL

Client Sample ID: BLANK

Date Collected: 09/20/17 15:48
Date Received: 09/23/17 09:40

Lab Sample ID: 490-137311-6

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	5 mL	1.0 mL	462845	09/25/17 15:08	SW1	TAL NSH
Total/NA	Analysis	9056A		1			463479	09/27/17 18:29	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224111	09/27/17 08:46	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224330	09/28/17 11:33	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225133	10/06/17 11:21	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224109	09/27/17 08:37	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			225183	10/08/17 06:42	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	462837	09/25/17 12:53	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463073	09/26/17 00:20	RDF	TAL NSH
Total/NA	Analysis	9040C		1			463879	09/28/17 15:16	MS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	462650	09/26/17 13:13	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.34 mL	1.0 g	329229	09/27/17 09:50	LDE	TAL SL
Total/NA	Analysis	903.0		1			332589	10/19/17 06:07	CDR	TAL SL
Total/NA	Prep	PrecSep_0			999.34 mL	1.0 g	329234	09/27/17 10:04	LDE	TAL SL
Total/NA	Analysis	904.0		1			330102	10/03/17 16:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333391	10/23/17 10:32	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

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: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

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: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

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		Ground Water	pH
9040C		Ground Water	Temperature
9040C		Water	pH
9040C		Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Ground Water	Total Dissolved Solids
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	12-31-17
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	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19

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

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

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
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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
Washington	State Program	10	C592	08-30-18
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

490-137311 Chain of Custody

Cooler Received/Opened On 9/23/17 0940

Time Samples Removed From Cooler 20:55 Time Samples Placed In Storage 21:14 (2 Hour Window)

1. Tracking # 1329 (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: 1.3 *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: 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) KG

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) KG

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) ADH

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) ADH

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

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
137311

COOLER RECEIPT FORM

Cooler Received/Opened On 9/23/17 0940

Time Samples Removed From Cooler 2055 Time Samples Placed In Storage 2114 (2 Hour Window)

1. Tracking # 1270 (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: 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/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) HZG

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) JG

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) ASH

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 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: 09/22/2017
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: Green Ash Pond CCR Groundwater-Round 8	☐ 1 week		
Site: Sebree Station, Green Ash Pond	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

490-65877-18049.1
___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,	9040C, 9056A_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-11	9/20/17	1125	G	Water	6	N	N	x	x	x	x	
MW-12	9/20/17	1520	G	Water	6	N	N	x	x	x	x	
MW-13	9/20/17	1350	G	Water	6	N	N	x	x	x	x	
MW-14	9/20/17	1257	G	Water	6	N	N	x	x	x	x	
DUPE	9/20/17	1155	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	9/20/17	1548	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Loc: 490
137311

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: Greg Dick	Company: BREC	Date/Time: 9/22/2017 1100	Received by:	Company: TAN 1.3	Date/Time: 9/23/17 0940
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

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10/23/2017

40 CFR PART 257 Constituent List:

Appendix III to Part 257

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

BREC
9/22/2017
1100

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

Part # 159470-434 REV 2 EXP 01/18

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 25SEP17
ACTWGT: 1.00 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-.73504

FedEx Express

TRK# 0201 4091 0225 8347

TUE - 26 SEP 10:30A
PRIORITY OVERNIGHT

EV AGCA

15238
PA-US PIT

Uncorrected temp 21.2 °C 20.9
Thermometer ID 11

CF -0.3 Initials TB

PT-WI-SR-001 effective 7/26/13

490-137311 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: 490-63167.1
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 #: 490-137311-1
Address: 13715 Rider Trail North,	Due Date Requested: 10/23/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #			
Email:	WO #			
Project Name: Green Ash Pond CCR Groundwater-Round 8	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)	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-11 (490-137311-1)	9/20/17	11:25 Central		Water			X	X	X	2	Historical Review required
MW-12 (490-137311-2)	9/20/17	15:20 Central		Water			X	X	X	2	Historical Review required
MW-13 (490-137311-3)	9/20/17	13:50 Central		Water			X	X	X	2	Historical Review required
MW-14 (490-137311-4)	9/20/17	12:57 Central		Water			X	X	X	2	Historical Review required
DUPE (490-137311-5)	9/20/17	11:55 Central		Water			X	X	X	2	Historical Review required
BLANK (490-137311-6)	9/20/17	15:48 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		9.25.17	TAN		9/26/17 0900	TDSR
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

10/23/2017

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

Not SEL

Chain of Custody Record

490-137311 Chain of Custody

TestAmerica
EADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		o 3162.1	
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 #: 490-137311-1	
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/18/2017				
City: Pittsburgh	TAT Requested (days):				
State, Zip: PA, 15238					
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:				
Email:	WO #:				
Project Name: Green Ash Pond CCR Groundwater-Round 8	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)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-11 (490-137311-1)	9/20/17	11:25 Central		Water			X	X	1	Metals - run once, upload together.
MW-12 (490-137311-2)	9/20/17	15:20 Central		Water			X	X	1	Metals - run once, upload together.
MW-13 (490-137311-3)	9/20/17	13:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-14 (490-137311-4)	9/20/17	12:57 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-137311-5)	9/20/17	11:55 Central		Water			X	X	1	Metals - run once, upload together.
BLANK (490-137311-6)	9/20/17	15:48 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 compliance 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: 9.25.17	Company: TAN	Received by:	Date/Time: 9/26/17 1120	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:

10/23/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-137311-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 137311
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: 490-137311-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 137311
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 09/26/17 10:44 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.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	False	
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: 490-137311-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 137311
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 09/26/17 02:58 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	19.0,19.0,19.0,19.0,19.0
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: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-137311-1	MW-11	89.1
490-137311-2	MW-12	94.1
490-137311-3	MW-13	96.5
490-137311-4	MW-14	96.8
490-137311-5	DUPE	96.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-137311-6	BLANK	93.8
LCS 160-329229/2-A	Lab Control Sample	98.5
LCSD 160-329229/3-A	Lab Control Sample Dup	101
MB 160-329229/1-A	Method Blank	101

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-137311-1	MW-11	89.1	80.7
490-137311-2	MW-12	94.1	81.5
490-137311-3	MW-13	96.5	79.3
490-137311-4	MW-14	96.8	82.2
490-137311-5	DUPE	96.2	80.4

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
490-137311-6	BLANK	93.8	87.9
LCS 160-329234/2-A	Lab Control Sample	98.5	81.5
LCSD 160-329234/3-A	Lab Control Sample Dup	101	81.9
MB 160-329234/1-A	Method Blank	101	80.0

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 8

TestAmerica Job ID: 490-137311-1
SDG: Sebree Station, Green Ash Pond

Ba = Ba Carrier
Y = 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: 490-138495-1
TestAmerica SDG: Sebree Station, Green Ash Pond
Client Project/Site: Green Ash Pond CCR Groundwater-Round 9
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
10/19/2017 2:17:20 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Table of Contents 2
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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-138495-1	MW-11	Ground Water	10/09/17 11:40	10/11/17 15:07
490-138495-2	MW-12	Ground Water	10/09/17 14:30	10/11/17 15:07
490-138495-3	MW-13	Ground Water	10/09/17 13:45	10/11/17 15:07
490-138495-4	MW-14	Ground Water	10/09/17 12:35	10/11/17 15:07
490-138495-5	DUPE	Ground Water	10/09/17 12:45	10/11/17 15:07
490-138495-6	FIELD BLANK	Water	10/09/17 14:42	10/11/17 09:40

Job ID: 490-138495-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-138495-1

Comments
No additional comments.

Receipt
The samples were received on 10/11/2017 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.4º C and 0.6º C.

Receipt Exceptions
COC says 6 containers per sample. Only 3 containers per sample received. MW-11 (490-138495-1), MW-12 (490-138495-2), MW-13 (490-138495-3), MW-14 (490-138495-4), DUPE (490-138495-5) and FIELD BLANK (490-138495-6)

903.0 and 904.0 requested on COC, however no 1-liter nitric perserved containers received. MW-11 (490-138495-1), MW-12 (490-138495-2), MW-13 (490-138495-3), MW-14 (490-138495-4), DUPE (490-138495-5) and FIELD BLANK (490-138495-6)

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-467536 contained Chloride, Fluoride and Sulfate 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: The method blank for analytical batch 490-467536 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 490-468282 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 490-468519 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 490-467536 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 was diluted due to the nature of the sample matrix: MW-11 (490-138495-1), MW-12 (490-138495-2), MW-13 (490-138495-3), MW-14 (490-138495-4) and DUPE (490-138495-5). 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.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
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-11

Date Collected: 10/09/17 11:40
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1940	B	300	20.0	mg/L			10/12/17 14:45	100
Fluoride	0.115	J F1	1.00	0.0100	mg/L			10/12/17 13:32	1
Sulfate	1050	B	500	3.00	mg/L			10/12/17 14:45	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.769	J	1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:21	1
Calcium	315	B	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 09:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.93		0.100	0.100	SU			10/12/17 12:30	1
Temperature	21.5		0.100	0.100	Degrees C			10/12/17 12:30	1
Total Dissolved Solids	5080		100	70.0	mg/L			10/11/17 21:17	1

Client Sample ID: MW-12

Date Collected: 10/09/17 14:30
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.4	B	3.00	0.200	mg/L			10/12/17 15:03	1
Fluoride	0.441	J	1.00	0.0100	mg/L			10/12/17 15:03	1
Sulfate	19.7	B	5.00	0.0300	mg/L			10/12/17 15:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.274	J	1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:25	1
Calcium	92.0	B	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 09:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.02		0.100	0.100	SU			10/12/17 12:30	1
Temperature	21.2		0.100	0.100	Degrees C			10/12/17 12:30	1
Total Dissolved Solids	641		10.0	7.00	mg/L			10/11/17 21:17	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13

Date Collected: 10/09/17 13:45
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.9	B	6.00	0.400	mg/L			10/17/17 12:40	2
Fluoride	0.294	J	1.00	0.0100	mg/L			10/12/17 15:57	1
Sulfate	96.4	B	50.0	0.300	mg/L			10/12/17 16:15	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0324	J	1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:29	1
Calcium	92.2	B	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 09:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.80		0.100	0.100	SU			10/12/17 12:30	1
Temperature	21.5		0.100	0.100	Degrees C			10/12/17 12:30	1
Total Dissolved Solids	695		10.0	7.00	mg/L			10/11/17 21:17	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-14

Date Collected: 10/09/17 12:35
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	199	B	60.0	4.00	mg/L			10/16/17 12:28	20
Fluoride	0.353	J	1.00	0.0100	mg/L			10/12/17 17:27	1
Sulfate	185		100	0.600	mg/L			10/16/17 12:28	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.241	J	1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:34	1
Calcium	194	B	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 10:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.08		0.100	0.100	SU			10/12/17 12:30	1
Temperature	21.5		0.100	0.100	Degrees C			10/12/17 12:30	1
Total Dissolved Solids	1170		10.0	7.00	mg/L			10/11/17 21:17	1

Client Sample ID: DUPE

Date Collected: 10/09/17 12:45
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-5

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	227	B	60.0	4.00	mg/L			10/16/17 12:46	20
Fluoride	0.360	J	1.00	0.0100	mg/L			10/12/17 18:21	1
Sulfate	219		100	0.600	mg/L			10/16/17 12:46	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.250	J	1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:39	1
Calcium	193	B	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 10:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.12		0.100	0.100	SU			10/12/17 12:30	1
Temperature	21.5		0.100	0.100	Degrees C			10/12/17 12:30	1
Total Dissolved Solids	1180		10.0	7.00	mg/L			10/11/17 21:17	1

Client Sample ID: FIELD BLANK

Date Collected: 10/09/17 14:42
Date Received: 10/11/17 09:40

Lab Sample ID: 490-138495-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.470**	**J B**	3.00	0.200	mg/L			10/12/17 19:16	1
Fluoride	ND		1.00	0.0100	mg/L			10/12/17 19:16	1
Sulfate	**0.192**	**J B**	5.00	0.0300	mg/L			10/12/17 19:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.0103**	**J**	1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:43	1
Calcium	**0.107**	**J B**	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 10:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.65**		0.100	0.100	SU			10/12/17 12:30	1
Temperature	**21.7**		0.100	0.100	Degrees C			10/12/17 12:30	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/11/17 21:17	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-467536/3
Matrix: Water
Analysis Batch: 467536

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.5482	J	3.00	0.200	mg/L			10/12/17 12:20	1
Fluoride	ND		1.00	0.0100	mg/L			10/12/17 12:20	1
Sulfate	0.1896	J	5.00	0.0300	mg/L			10/12/17 12:20	1

Lab Sample ID: LCS 490-467536/4
Matrix: Water
Analysis Batch: 467536

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	10.17		mg/L		102	80 - 120
Fluoride	1.00	0.9855	J	mg/L		98	80 - 120
Sulfate	10.0	10.31		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-467536/5
Matrix: Water
Analysis Batch: 467536

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	10.24		mg/L		102	80 - 120	1	20
Fluoride	1.00	1.001		mg/L		100	80 - 120	2	20
Sulfate	10.0	10.30		mg/L		103	80 - 120	0	20

Lab Sample ID: 490-138495-1 MS
Matrix: Ground Water
Analysis Batch: 467536

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.115	J F1	1.00	0.5365	J F1	mg/L		42	80 - 120

Lab Sample ID: 490-138495-1 MSD
Matrix: Ground Water
Analysis Batch: 467536

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.115	J F1	1.00	0.5194	J F1	mg/L		40	80 - 120	3	20

Lab Sample ID: MB 490-468282/3
Matrix: Water
Analysis Batch: 468282

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4634	J	3.00	0.200	mg/L			10/16/17 11:16	1
Fluoride	ND		1.00	0.0100	mg/L			10/16/17 11:16	1
Sulfate	ND		5.00	0.0300	mg/L			10/16/17 11:16	1

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

Lab Sample ID: LCS 490-468282/4
Matrix: Water
Analysis Batch: 468282

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	9.502		mg/L		95	80 - 120
Fluoride	1.00	0.9013	J	mg/L		90	80 - 120
Sulfate	10.0	9.460		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-468282/5
Matrix: Water
Analysis Batch: 468282

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	9.394		mg/L		94	80 - 120	1	20
Fluoride	1.00	0.8925	J	mg/L		89	80 - 120	1	20
Sulfate	10.0	9.331		mg/L		93	80 - 120	1	20

Lab Sample ID: 490-138677-E-1 MS
Matrix: Water
Analysis Batch: 468282

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	3.65	B	10.0	14.12		mg/L		105	80 - 120
Fluoride	0.295	J	1.00	1.307		mg/L		101	80 - 120

Lab Sample ID: 490-138677-E-1 MSD
Matrix: Water
Analysis Batch: 468282

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	3.65	B	10.0	15.14		mg/L		115	80 - 120	7	20
Fluoride	0.295	J	1.00	1.465		mg/L		117	80 - 120	11	20

Lab Sample ID: MB 490-468519/3
Matrix: Water
Analysis Batch: 468519

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4483	J	3.00	0.200	mg/L			10/17/17 10:52	1
Sulfate	ND		5.00	0.0300	mg/L			10/17/17 10:52	1

Lab Sample ID: LCS 490-468519/4
Matrix: Water
Analysis Batch: 468519

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	9.103		mg/L		91	80 - 120
Sulfate	10.0	8.988		mg/L		90	80 - 120

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

Lab Sample ID: LCSD 490-468519/5
Matrix: Water
Analysis Batch: 468519

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	9.335		mg/L		93	80 - 120	3	20
Sulfate	10.0	9.144		mg/L		91	80 - 120	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-225951/1-A
Matrix: Water
Analysis Batch: 226126

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 225951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.04175	J	1.00	0.0412	mg/L		10/16/17 11:44	10/17/17 09:17	1

Lab Sample ID: MB 180-225951/1-A
Matrix: Water
Analysis Batch: 226398

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 225951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		10/16/17 11:44	10/18/17 22:12	1

Lab Sample ID: LCS 180-225951/2-A
Matrix: Water
Analysis Batch: 226126

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 225951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50.0	51.85		mg/L		104	80 - 120

Lab Sample ID: LCS 180-225951/2-A
Matrix: Water
Analysis Batch: 226398

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 225951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.8973	J	mg/L		90	80 - 120

Lab Sample ID: 180-71262-AA-1-E MS
Matrix: Water
Analysis Batch: 226126

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 225951

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	8.31	B	50.0	59.46		mg/L		102	75 - 125

Lab Sample ID: 180-71262-AA-1-F MSD
Matrix: Water
Analysis Batch: 226126

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 225951

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	8.31	B	50.0	60.23		mg/L		104	75 - 125	1	20

Method: 9040C - pH

Lab Sample ID: LCS 490-467495/1
Matrix: Water
Analysis Batch: 467495

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: 490-138495-2 DU
Matrix: Ground Water
Analysis Batch: 467495

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.02			7.020		SU				0	20
Temperature	21.2			21.40		Degrees C				0.9	20

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

Lab Sample ID: MB 490-463778/1
Matrix: Water
Analysis Batch: 463778

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			10/11/17 21:17	1

Lab Sample ID: LCS 490-463778/2
Matrix: Water
Analysis Batch: 463778

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	97.00		mg/L		97	90 - 110		

Lab Sample ID: 490-138472-N-1 DU
Matrix: Water
Analysis Batch: 463778

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	1550			1505		mg/L				3	20

Lab Sample ID: 490-138524-D-2 DU
Matrix: Water
Analysis Batch: 463778

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	5430			5388		mg/L				0.8	20

HPLC/IC

Analysis Batch: 467536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-1	MW-11	Total/NA	Ground Water	9056A	
490-138495-1	MW-11	Total/NA	Ground Water	9056A	
490-138495-2	MW-12	Total/NA	Ground Water	9056A	
490-138495-3	MW-13	Total/NA	Ground Water	9056A	
490-138495-3	MW-13	Total/NA	Ground Water	9056A	
490-138495-4	MW-14	Total/NA	Ground Water	9056A	
490-138495-5	DUPE	Total/NA	Ground Water	9056A	
490-138495-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-467536/3	Method Blank	Total/NA	Water	9056A	
LCS 490-467536/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-467536/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-138495-1 MS	MW-11	Total/NA	Ground Water	9056A	
490-138495-1 MSD	MW-11	Total/NA	Ground Water	9056A	

Analysis Batch: 468282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-4	MW-14	Total/NA	Ground Water	9056A	
490-138495-5	DUPE	Total/NA	Ground Water	9056A	
MB 490-468282/3	Method Blank	Total/NA	Water	9056A	
LCS 490-468282/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-468282/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-138677-E-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-138677-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 468519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-3	MW-13	Total/NA	Ground Water	9056A	
MB 490-468519/3	Method Blank	Total/NA	Water	9056A	
LCS 490-468519/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-468519/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 225951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-1	MW-11	Total Recoverable	Ground Water	3005A	
490-138495-2	MW-12	Total Recoverable	Ground Water	3005A	
490-138495-3	MW-13	Total Recoverable	Ground Water	3005A	
490-138495-4	MW-14	Total Recoverable	Ground Water	3005A	
490-138495-5	DUPE	Total Recoverable	Ground Water	3005A	
490-138495-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-225951/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-225951/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-71262-AA-1-E MS	Matrix Spike	Total Recoverable	Water	3005A	
180-71262-AA-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 226126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-1	MW-11	Total Recoverable	Ground Water	6020A	225951
490-138495-2	MW-12	Total Recoverable	Ground Water	6020A	225951

Metals (Continued)

Analysis Batch: 226126 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-3	MW-13	Total Recoverable	Ground Water	6020A	225951
490-138495-4	MW-14	Total Recoverable	Ground Water	6020A	225951
490-138495-5	DUPE	Total Recoverable	Ground Water	6020A	225951
490-138495-6	FIELD BLANK	Total Recoverable	Water	6020A	225951
MB 180-225951/1-A	Method Blank	Total Recoverable	Water	6020A	225951
LCS 180-225951/2-A	Lab Control Sample	Total Recoverable	Water	6020A	225951
180-71262-AA-1-E MS	Matrix Spike	Total Recoverable	Water	6020A	225951
180-71262-AA-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	225951

Analysis Batch: 226398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-1	MW-11	Total Recoverable	Ground Water	6020A	225951
490-138495-2	MW-12	Total Recoverable	Ground Water	6020A	225951
490-138495-3	MW-13	Total Recoverable	Ground Water	6020A	225951
490-138495-4	MW-14	Total Recoverable	Ground Water	6020A	225951
490-138495-5	DUPE	Total Recoverable	Ground Water	6020A	225951
490-138495-6	FIELD BLANK	Total Recoverable	Water	6020A	225951
MB 180-225951/1-A	Method Blank	Total Recoverable	Water	6020A	225951
LCS 180-225951/2-A	Lab Control Sample	Total Recoverable	Water	6020A	225951

General Chemistry

Analysis Batch: 463778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-138495-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-138495-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-138495-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-138495-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-138495-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-463778/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-463778/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-138472-N-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-138524-D-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 467495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138495-1	MW-11	Total/NA	Ground Water	9040C	
490-138495-2	MW-12	Total/NA	Ground Water	9040C	
490-138495-3	MW-13	Total/NA	Ground Water	9040C	
490-138495-4	MW-14	Total/NA	Ground Water	9040C	
490-138495-5	DUPE	Total/NA	Ground Water	9040C	
490-138495-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-467495/1	Lab Control Sample	Total/NA	Water	9040C	
490-138495-2 DU	MW-12	Total/NA	Ground Water	9040C	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11

Date Collected: 10/09/17 11:40
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-1

Matrix: Ground 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			467536	10/12/17 13:32	SW1	TAL NSH
Total/NA	Analysis	9056A		100			467536	10/12/17 14:45	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226126	10/17/17 09:48	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226398	10/18/17 22:21	WTR	TAL PIT
Total/NA	Analysis	9040C		1			467495	10/12/17 12:30	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	463778	10/11/17 21:17	AEC	TAL NSH

Client Sample ID: MW-12

Date Collected: 10/09/17 14:30
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-2

Matrix: Ground 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			467536	10/12/17 15:03	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226126	10/17/17 09:57	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226398	10/18/17 22:25	WTR	TAL PIT
Total/NA	Analysis	9040C		1			467495	10/12/17 12:30	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463778	10/11/17 21:17	AEC	TAL NSH

Client Sample ID: MW-13

Date Collected: 10/09/17 13:45
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-3

Matrix: Ground 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			467536	10/12/17 15:57	SW1	TAL NSH
Total/NA	Analysis	9056A		10			467536	10/12/17 16:15	SW1	TAL NSH
Total/NA	Analysis	9056A		2	10 mL	1.0 mL	468519	10/17/17 12:40	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226126	10/17/17 09:59	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226398	10/18/17 22:29	WTR	TAL PIT
Total/NA	Analysis	9040C		1			467495	10/12/17 12:30	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463778	10/11/17 21:17	AEC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-14

Date Collected: 10/09/17 12:35
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-4
Matrix: Ground 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			467536	10/12/17 17:27	SW1	TAL NSH
Total/NA	Analysis	9056A		20			468282	10/16/17 12:28	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226126	10/17/17 10:02	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226398	10/18/17 22:34	WTR	TAL PIT
Total/NA	Analysis	9040C		1			467495	10/12/17 12:30	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463778	10/11/17 21:17	AEC	TAL NSH

Client Sample ID: DUPE

Date Collected: 10/09/17 12:45
Date Received: 10/11/17 15:07

Lab Sample ID: 490-138495-5
Matrix: Ground 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			467536	10/12/17 18:21	SW1	TAL NSH
Total/NA	Analysis	9056A		20			468282	10/16/17 12:46	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226126	10/17/17 10:05	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226398	10/18/17 22:39	WTR	TAL PIT
Total/NA	Analysis	9040C		1			467495	10/12/17 12:30	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463778	10/11/17 21:17	AEC	TAL NSH

Client Sample ID: FIELD BLANK

Date Collected: 10/09/17 14:42
Date Received: 10/11/17 09:40

Lab Sample ID: 490-138495-6
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			467536	10/12/17 19:16	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226126	10/17/17 10:07	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	225951	10/16/17 11:44	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			226398	10/18/17 22:43	WTR	TAL PIT
Total/NA	Analysis	9040C		1			467495	10/12/17 12:30	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463778	10/11/17 21:17	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: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

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: Green Ash Pond CCR Groundwater-Round 9

TestAmerica Job ID: 490-138495-1
SDG: Sebree Station, Green Ash Pond

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		Ground Water	pH
9040C		Ground Water	Temperature
9040C		Water	pH
9040C		Water	Temperature
9056A		Ground Water	Chloride
9056A		Ground Water	Fluoride
9056A		Ground Water	Sulfate
9056A		Water	Chloride
9056A		Water	Fluoride
9056A		Water	Sulfate
SM 2540C		Ground Water	Total Dissolved Solids
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	12-31-17
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	01-31-18
Wisconsin	State Program	5	998027800	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-138495 Chain of Custody

Cooler Received/Opened On 10/11/17 0940

Time Samples Removed From Cooler 15:03 Time Samples Placed In Storage 15:20 (2 Hour Window)

1. Tracking # 0701 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960353 pH Strip Lot N/A 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: 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) KD

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) KD

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) KD

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

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
138495

COOLER RECEIPT FORM

Cooler Received/Opened On 10/11/2017 @0940

Time Samples Removed From Cooler 15:03 Time Samples Placed In Storage 15:20 (2 Hour Window)

1. Tracking # 0359 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960357 pH Strip Lot N/A Chlorine Strip Lot 05241TF

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: Two 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) CLH

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) KD

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) KD

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) KD

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

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: 10/10/2017
Company: Big Rivers Electric Corporation	Tel/Fax: (270) 844-6032	Lab Contact: Roxanne Cisneros	Carrier: FedEx
Address: PO Box 24	Analysis Turnaround Time		___1___ of ___1___ COCs
City/State/Zip: Henderson, KY 42419	☐CALENDAR DAYS ☐WORKING DAYS		Sampler: Greg Dick
(270) 844-6000 Phone	TAT if different from Below _____		For Lab Use Only:
(xxx) xxx-xxxx FAX	☑ 2 weeks		Walk-in Client:
Project Name: Green Ash Pond CCR Groundwater-Round 9	☐ 1 week		Lab Sampling:
Site: Sebree Station, Green Ash Pond	☐ 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, 9056A_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-11	10/9/17	1140	G	Water	6	N	N	x	x	x	x	
MW-12	10/9/17	1430	G	Water	6	N	N	x	x	x	x	
MW-13	10/9/17	1345	G	Water	6	N	N	x	x	x	x	
MW-14	10/9/17	1235	G	Water	6	N	N	x	x	x	x	
DUPE	10/9/17	1245	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	10/9/17	1442	G	Water	6	N	N	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other, 7= None _____								4	4	1	1	

Loc: 490
138495

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: 0.6,0.4	Corr'd:_____	Therm ID No.:_____
Relinquished by: Greg Dick	Company: BREC	Date/Time: 10/10/17 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: TAN	Date/Time: 10-11-2017 09:40

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

1 2 3 Page 24 of 28

10/19/2017

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

Met IEC

Chain of Custody Record



America
ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.(	Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-138495-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/23/2017	Analysis Requested	Preservation Codes:
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Green Ash Pond CCR Groundwater-Round 9	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

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)	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-11 (490-138495-1)	10/9/17	11:40 Central		Water			X	1	Metals - run once, upload together.
MW-12 (490-138495-2)	10/9/17	14:30 Central		Water			X	1	Metals - run once, upload together.
MW-13 (490-138495-3)	10/9/17	13:45 Central		Water			X	1	Metals - run once, upload together.
MW-14 (490-138495-4)	10/9/17	12:35 Central		Water			X	1	Metals - run once, upload together.
DUPE (490-138495-5)	10/9/17	12:45 Central		Water			X	1	Metals - run once, upload together.
FIELD BLANK (490-138495-6)	10/9/17	14:42 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
[signature]	10-12-13	TAN	[signature] Watson	10-13-17	TAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 850	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:

10/19/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-138495-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 138495
List Number: 1
Creator: Dawson, Keith M

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.	False	
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").	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: 490-138495-1
SDG Number: Sebree Station, Green Ash Pond

Login Number: 138495
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 10/13/17 03:57 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	

REID/HMPL STATION SURFACE IMPOUNDMENT

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: 490-100759-3
Client Project/Site: REID/HMPL Impoundment

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

Attn: Brad Coyle

Cathy Gartner

Authorized for release by:
5/10/2016 1:36:31 PM

Cathy Gartner, Project Manager I
(615)301-5041
cathy.gartner@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-100759-9	MW-7	Water	03/30/16 16:30	04/02/16 09:30
490-100759-10	MW-8	Water	03/30/16 10:40	04/02/16 09:30
490-100759-11	MW-9	Water	03/30/16 11:50	04/02/16 09:30
490-100759-12	MW-10	Water	03/30/16 14:40	04/02/16 09:30
490-100759-13	DUPE	Water	03/30/16 15:05	04/02/16 09:30
490-100759-14	BLANK	Water	03/30/16 00:01	04/02/16 09:30

Job ID: 490-100759-3

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-100759-3

Comments
No additional comments.

Receipt
The samples were received on 4/2/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.8º C, 0.9º C, 2.0º C and 2.4º C.

RAD
Method(s) PrecSep_0: Radium-228 Prep Batch 160-245286:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-100759-9), MW-8 (490-100759-10), MW-9 (490-100759-11), MW-10 (490-100759-12), DUPE (490-100759-13) and BLANK (490-100759-14). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead. Lot 440-143355 was prepared at a reduced aliquot due to limited sample volume.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-245254:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-100759-9), MW-8 (490-100759-10), MW-9 (490-100759-11), MW-10 (490-100759-12), DUPE (490-100759-13) and BLANK (490-100759-14). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead. Lot 440-143355 was prepared at a reduced aliquot due to limited sample volume.

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

Job ID: 490-100759-4

Laboratory: TestAmerica Nashville

Narrative

HPLC/IC
Method(s) 9056A: The method blank for 490-334854 contained Chloride above the method detection limit (MDL). Associated samples 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 batch 338512 contained chloride and sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method(s) 9056A: Reanalysis of the following samples was performed outside of the analytical holding time due to the sample results exceeding the calibration curve limits : MW-8 (490-100759-10), MW-10 (490-100759-12) and DUPE (490-100759-13).

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 338512 were outside control limits for chloride and sulfate. 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.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-8 (490-100759-10), MW-10 (490-100759-12) and DUPE (490-100759-13). 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.

Metals
Method(s) 6020A: preparation batch 160-245257 and analytical batch 160-246912
Due to linear range check (LRC) failures, the linear range for beryllium and lithium has been lowered to the concentration of the highest calibration standard (200ppb). The LCS and MS/MSD were above the linear range, but were within acceptable limits. (LCS 160-245257/2-A), (490-100759-E-1-B MS) and (490-100759-E-1-C MSD)

Job ID: 490-100759-4 (Continued)

Laboratory: TestAmerica Nashville (Continued)

Method(s) 6020A: Prep batch 160-245257 analytical batch 160-246912
The low level check (CCVL) was outside the upper QC limits for calcium. Associated samples which are either below the reporting limit for the contaminant or exhibit concentrations at such a high level as to make the CCVL unnecessary do not require re-analysis. Original results are reported. (CCVL 160-246912/30)

Method(s) 6020A: preparation batch 160-245257 and analytical batch 160-247093
The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-8 (490-100759-10). 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.

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.
H	Sample was prepped or analyzed beyond the specified holding time
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
E	Result exceeded calibration range.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-7

Date Collected: 03/30/16 16:30
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.210**	**J**	1.00	0.0100	mg/L			04/27/16 01:05	1
Sulfate	**12.8**		5.00	0.0300	mg/L			04/27/16 01:05	1
Chloride	**2.48**	**J B**	3.00	0.200	mg/L			04/27/16 01:05	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.246**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:10	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 20:59	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 20:59	2
Barium	**0.0565**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 20:59	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 20:59	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 20:59	2
Calcium	**41.1**		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 20:59	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 20:59	2
Cobalt	**0.000590**	**J**	0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 20:59	2
Lead	**0.000640**	**J**	0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 20:59	2
Lithium	**0.00739**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 20:59	2
Molybdenum	**0.0109**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 20:59	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 20:59	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 20:59	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**233**		10.0	7.00	mg/L			04/05/16 13:25	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	**0.526**		0.131	0.139	1.00	0.128	pCi/L	04/11/16 11:12	05/03/16 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*04/11/16 11:12*	*05/03/16 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	0.339	U	0.273	0.275	1.00	0.436	pCi/L	04/11/16 15:23	04/26/16 07:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:35*	*1*
Y Carrier	*80.7*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:35*	*1*

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: MW-7
Date Collected: 03/30/16 16:30
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-9
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	0.865		0.303	0.308	5.00	0.436	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-8

Date Collected: 03/30/16 10:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-10

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.498**	**J**	5.00	0.0500	mg/L			04/27/16 01:29	5
Sulfate	**1100**	**H B**	500	3.00	mg/L			05/09/16 23:49	100
Chloride	**48.7**	**B**	15.0	1.00	mg/L			04/27/16 01:29	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1.46**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:15	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 21:06	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 21:06	2
Barium	**0.0177**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 21:06	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 21:06	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 21:06	2
Calcium	**283**		5.00	0.170	mg/L		04/11/16 11:21	04/20/16 23:59	5
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 21:06	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 21:06	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 21:06	2
Lithium	**0.0314**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 21:06	2
Molybdenum	**0.0138**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 21:06	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 21:06	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 21:06	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1930**		20.0	14.0	mg/L			04/05/16 13:25	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	**0.388**		0.117	0.122	1.00	0.127	pCi/L	04/11/16 11:12	05/03/16 07:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.4*		*40 - 110*	*04/11/16 11:12*	*05/03/16 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	**1.59**		0.342	0.372	1.00	0.396	pCi/L	04/11/16 15:23	04/26/16 07:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.4*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:35*	*1*
Y Carrier	*79.6*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:35*	*1*

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: MW-8
Date Collected: 03/30/16 10:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-10
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	1.98		0.361	0.391	5.00	0.396	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-9

Date Collected: 03/30/16 11:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.212**	**J**	1.00	0.0100	mg/L			04/27/16 02:41	1
Sulfate	**9.51**		5.00	0.0300	mg/L			04/27/16 02:41	1
Chloride	**26.5**	**B**	3.00	0.200	mg/L			04/27/16 02:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.316**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:33	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 21:13	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 21:13	2
Barium	**1.10**		0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 21:13	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 21:13	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 21:13	2
Calcium	**64.1**		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 21:13	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 21:13	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 21:13	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 21:13	2
Lithium	**0.0120**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 21:13	2
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 21:13	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 21:13	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 21:13	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**363**		10.0	7.00	mg/L			04/05/16 13:25	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	**1.70**		0.205	0.256	1.00	0.106	pCi/L	04/11/16 11:12	05/03/16 07:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:06*	*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	**1.17**		0.302	0.320	1.00	0.381	pCi/L	04/11/16 15:23	04/26/16 07:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*
Y Carrier	*81.1*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: MW-9
Date Collected: 03/30/16 11:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-11
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	2.87		0.365	0.410	5.00	0.381	pCi/L		05/04/16 21:00	1

Client Sample ID: MW-10
Date Collected: 03/30/16 14:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-12
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.389**	**J**	1.00	0.0100	mg/L			04/27/16 03:05	1
Sulfate	**208**	**H B**	100	0.600	mg/L			05/10/16 00:06	20
Chloride	**31.5**	**B**	3.00	0.200	mg/L			04/27/16 03:05	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.416**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:37	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 21:19	2
Arsenic	**0.00139**	**J**	0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 21:19	2
Barium	**0.0372**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 21:19	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 21:19	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 21:19	2
Calcium	**16.5**		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 21:19	2
Chromium	**0.00265**	**J**	0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 21:19	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 21:19	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 21:19	2
Lithium	**0.339**		0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 21:19	2
Molybdenum	**0.0170**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 21:19	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 21:19	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 21:19	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**644**		10.0	7.00	mg/L			04/05/16 13:25	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	**0.248**		0.100	0.103	1.00	0.122	pCi/L	04/11/16 11:12	05/03/16 07:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:06*	*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	0.364	U	0.260	0.262	1.00	0.407	pCi/L	04/11/16 15:23	04/26/16 07:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*
Y Carrier	*81.1*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: MW-10
Date Collected: 03/30/16 14:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-12
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	0.612		0.278	0.281	5.00	0.407	pCi/L		05/04/16 21:00	1

Client Sample ID: DUPE

Date Collected: 03/30/16 15:05
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-13

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.411**	**J**	1.00	0.0100	mg/L			04/27/16 03:29	1
Sulfate	**188**	**H B**	100	0.600	mg/L			05/10/16 00:23	20
Chloride	**30.1**	**B**	3.00	0.200	mg/L			04/27/16 03:29	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.407**		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:42	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 21:26	2
Arsenic	**0.00151**	**J**	0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 21:26	2
Barium	**0.0374**	**J**	0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 21:26	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 21:26	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 21:26	2
Calcium	**15.8**		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 21:26	2
Chromium	**0.00312**	**J**	0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 21:26	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 21:26	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 21:26	2
Lithium	**0.355**		0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 21:26	2
Molybdenum	**0.0173**	**J**	0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 21:26	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 21:26	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 21:26	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**632**		10.0	7.00	mg/L			04/05/16 13:25	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	**0.189**		0.0812	0.0830	1.00	0.0921	pCi/L	04/11/16 11:12	05/03/16 07:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:06*	*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	0.240	U	0.222	0.223	1.00	0.357	pCi/L	04/11/16 15:23	04/26/16 07:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*
Y Carrier	*80.4*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: DUPE
Date Collected: 03/30/16 15:05
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-13
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	0.430		0.236	0.238	5.00	0.357	pCi/L		05/04/16 21:00	1

Client Sample ID: BLANK
Date Collected: 03/30/16 00:01
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-14
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			04/27/16 03:53	1
Sulfate	ND		5.00	0.0300	mg/L			04/27/16 03:53	1
Chloride	**0.379**	**J B**	3.00	0.200	mg/L			04/27/16 03:53	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 23:46	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 21:33	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 21:33	2
Barium	ND		0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 21:33	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 21:33	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 21:33	2
Calcium	ND		2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 21:33	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 21:33	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 21:33	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 21:33	2
Lithium	**0.00145**	**J**	0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 21:33	2
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 21:33	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 21:33	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 21:33	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 07:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**19.0**		10.0	7.00	mg/L			04/05/16 13:25	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	0.00486	U	0.0547	0.0547	1.00	0.106	pCi/L	04/11/16 11:12	05/03/16 07:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*04/11/16 11:12*	*05/03/16 07:06*	*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	**0.532**		0.282	0.286	1.00	0.425	pCi/L	04/11/16 15:23	04/26/16 07:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*
Y Carrier	*81.1*		*40 - 110*	*04/11/16 15:23*	*04/26/16 07:36*	*1*

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: BLANK
Date Collected: 03/30/16 00:01
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-14
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	0.537		0.287	0.291	5.00	0.425	pCi/L		05/04/16 21:00	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-334854/3
Matrix: Water
Analysis Batch: 334854

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			04/26/16 19:52	1
Sulfate	ND		5.00	0.0300	mg/L			04/26/16 19:52	1
Chloride	0.5453	J	3.00	0.200	mg/L			04/26/16 19:52	1

Lab Sample ID: LCS 490-334854/4
Matrix: Water
Analysis Batch: 334854

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	9.966		mg/L		100	80 - 120
Sulfate	100	90.58		mg/L		91	80 - 120
Chloride	100	92.19		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-334854/5
Matrix: Water
Analysis Batch: 334854

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	9.873		mg/L		99	80 - 120	1	20
Sulfate	100	90.41		mg/L		90	80 - 120	0	20
Chloride	100	92.28		mg/L		92	80 - 120	0	20

Lab Sample ID: 490-100759-B-8 MS
Matrix: Water
Analysis Batch: 334854

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
Fluoride	ND		10.0	10.20		mg/L		102	80 - 120
Sulfate	0.243	J	100	95.05		mg/L		95	80 - 120
Chloride	0.414	J B	100	97.19		mg/L		97	80 - 120

Lab Sample ID: 490-100759-B-8 MSD
Matrix: Water
Analysis Batch: 334854

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
Fluoride	ND		10.0	10.26		mg/L		103	80 - 120	1	20
Sulfate	0.243	J	100	95.68		mg/L		95	80 - 120	1	20
Chloride	0.414	J B	100	97.71		mg/L		97	80 - 120	1	20

Lab Sample ID: MB 490-338512/5
Matrix: Water
Analysis Batch: 338512

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			05/09/16 12:19	1
Sulfate	0.1996	J	5.00	0.0300	mg/L			05/09/16 12:19	1
Chloride	0.2064	J	3.00	0.200	mg/L			05/09/16 12:19	1

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

Lab Sample ID: LCS 490-338512/3
Matrix: Water
Analysis Batch: 338512

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	0.9786	J	mg/L		98	80 - 120
Sulfate	10.0	9.005		mg/L		90	80 - 120
Chloride	10.0	8.950		mg/L		90	80 - 120

Lab Sample ID: LCSD 490-338512/4
Matrix: Water
Analysis Batch: 338512

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	1.00	0.9798	J	mg/L		98	80 - 120	0	20
Sulfate	10.0	9.050		mg/L		90	80 - 120	0	20
Chloride	10.0	9.134		mg/L		91	80 - 120	2	20

Lab Sample ID: 490-101617-B-1 MS
Matrix: Water
Analysis Batch: 338512

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
Fluoride	0.150	J	0.200	0.3116	J	mg/L		81	80 - 120
Sulfate	30.8	B	2.00	26.52	4	mg/L		-216	80 - 120
Chloride	4.90	F1 B	2.00	5.683	F1	mg/L		39	80 - 120

Lab Sample ID: 490-101617-B-1 MSD
Matrix: Water
Analysis Batch: 338512

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
Fluoride	0.150	J	0.200	0.3109	J	mg/L		81	80 - 120	NC	20
Sulfate	30.8	B	2.00	26.43	4	mg/L		-220	80 - 120	NC	20
Chloride	4.90	F1 B	2.00	5.731	F1	mg/L		41	80 - 120	NC	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-245490/1-A
Matrix: Water
Analysis Batch: 245738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245490

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100	0.00717	mg/L		04/11/16 11:20	04/13/16 21:59	1

Lab Sample ID: LCS 160-245490/2-A
Matrix: Water
Analysis Batch: 245738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245490

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2.00	1.959		mg/L		98	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 490-100759-E-1-E MS
Matrix: Water
Analysis Batch: 245738

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245490

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.67		2.00	3.676		mg/L		101	75 - 125

Lab Sample ID: 490-100759-E-1-F MSD
Matrix: Water
Analysis Batch: 245738

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 245490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.67		2.00	3.728		mg/L		103	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-245257/1-A
Matrix: Water
Analysis Batch: 246912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245257

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00400	0.00167	mg/L		04/11/16 11:21	04/19/16 19:11	2
Arsenic	ND		0.0100	0.00118	mg/L		04/11/16 11:21	04/19/16 19:11	2
Barium	ND		0.400	0.000223	mg/L		04/11/16 11:21	04/19/16 19:11	2
Beryllium	ND		0.00400	0.000350	mg/L		04/11/16 11:21	04/19/16 19:11	2
Cadmium	ND		0.00200	0.000100	mg/L		04/11/16 11:21	04/19/16 19:11	2
Calcium	ND	^	2.00	0.0681	mg/L		04/11/16 11:21	04/19/16 19:11	2
Chromium	ND		0.00600	0.00100	mg/L		04/11/16 11:21	04/19/16 19:11	2
Cobalt	ND		0.0100	0.000217	mg/L		04/11/16 11:21	04/19/16 19:11	2
Lead	ND		0.0100	0.000173	mg/L		04/11/16 11:21	04/19/16 19:11	2
Lithium	ND		0.100	0.00107	mg/L		04/11/16 11:21	04/19/16 19:11	2
Molybdenum	ND		0.0200	0.00100	mg/L		04/11/16 11:21	04/19/16 19:11	2
Selenium	ND		0.0200	0.00159	mg/L		04/11/16 11:21	04/19/16 19:11	2
Thallium	ND		0.00200	0.000550	mg/L		04/11/16 11:21	04/19/16 19:11	2

Lab Sample ID: LCS 160-245257/2-A
Matrix: Water
Analysis Batch: 246912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245257

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4889		mg/L		98	80 - 120
Arsenic	1.00	0.9642		mg/L		96	80 - 120
Barium	1.00	1.017		mg/L		102	80 - 120
Beryllium	1.00	1.078	E	mg/L		108	80 - 120
Cadmium	1.00	1.019		mg/L		102	80 - 120
Calcium	10.0	10.24	^	mg/L		102	80 - 120
Chromium	1.00	1.002		mg/L		100	80 - 120
Cobalt	1.00	0.9804		mg/L		98	80 - 120
Lead	1.00	0.9887		mg/L		99	80 - 120
Lithium	1.00	1.019	E	mg/L		102	80 - 120
Molybdenum	0.500	0.5044		mg/L		101	80 - 120
Selenium	0.500	0.4704		mg/L		94	80 - 120
Thallium	0.200	0.2088		mg/L		104	80 - 120

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

Lab Sample ID: 490-100759-E-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 246912 — **Prep Batch: 245257**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.500	0.4936		mg/L		99	75 - 125
Arsenic	0.00264	J	1.00	0.9482		mg/L		95	75 - 125
Barium	0.0974	J	1.00	1.103		mg/L		101	75 - 125
Beryllium	ND		1.00	1.073	E	mg/L		107	75 - 125
Cadmium	ND		1.00	0.9942		mg/L		99	75 - 125
Calcium	29.1	^	10.0	38.23	^	mg/L		91	75 - 125
Chromium	ND		1.00	0.9535		mg/L		95	75 - 125
Cobalt	0.00105	J	1.00	0.9306		mg/L		93	75 - 125
Lead	0.000180	J	1.00	0.9533		mg/L		95	75 - 125
Lithium	0.0293	J	1.00	1.029	E	mg/L		100	75 - 125
Molybdenum	ND		0.500	0.5072		mg/L		101	75 - 125
Selenium	ND		0.500	0.4642		mg/L		93	75 - 125
Thallium	ND		0.200	0.2013		mg/L		101	75 - 125

Lab Sample ID: 490-100759-E-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 246912 — **Prep Batch: 245257**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.500	0.5011		mg/L		100	75 - 125	2	20
Arsenic	0.00264	J	1.00	0.9671		mg/L		96	75 - 125	2	20
Barium	0.0974	J	1.00	1.107		mg/L		101	75 - 125	0	20
Beryllium	ND		1.00	1.077	E	mg/L		108	75 - 125	0	20
Cadmium	ND		1.00	1.015		mg/L		102	75 - 125	2	20
Calcium	29.1	^	10.0	39.09	^	mg/L		100	75 - 125	2	20
Chromium	ND		1.00	0.9720		mg/L		97	75 - 125	2	20
Cobalt	0.00105	J	1.00	0.9441		mg/L		94	75 - 125	1	20
Lead	0.000180	J	1.00	0.9715		mg/L		97	75 - 125	2	20
Lithium	0.0293	J	1.00	1.040	E	mg/L		101	75 - 125	1	20
Molybdenum	ND		0.500	0.5101		mg/L		102	75 - 125	1	20
Selenium	ND		0.500	0.4648		mg/L		93	75 - 125	0	20
Thallium	ND		0.200	0.2062		mg/L		103	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-329094/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 329102 — **Prep Batch: 329094**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		04/04/16 21:27	04/05/16 06:40	1

Lab Sample ID: LCS 490-329094/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 329102 — **Prep Batch: 329094**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.8195		ug/L		82	80 - 120

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

Lab Sample ID: 490-100652-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 329102 — **Prep Batch: 329094**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1	1.00	0.7131	F1	ug/L		71	75 - 125

Lab Sample ID: 490-100652-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 329102 — **Prep Batch: 329094**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	1.00	0.7479		ug/L		75	75 - 125	5	20

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

Lab Sample ID: MB 490-328437/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 328437

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			04/05/16 13:25	1

Lab Sample ID: LCS 490-328437/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 328437

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	94.00		mg/L		94	90 - 110

Lab Sample ID: LCSD 490-328437/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 328437

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	95.00		mg/L		95	90 - 110	1	20

Lab Sample ID: 490-100579-C-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 328437

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	516		522.0		mg/L		1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-245254/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 248977 — **Prep Batch: 245254**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02441	U	0.0545	0.0545	1.00	0.0980	pCi/L	04/11/16 11:12	05/03/16 07:03	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-245254/1-A
Matrix: Water
Analysis Batch: 248977

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245254

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.4		40 - 110	04/11/16 11:12	05/03/16 07:03	1

Lab Sample ID: LCS 160-245254/2-A
Matrix: Water
Analysis Batch: 249010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245254

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	14.04		1.39	1.00	0.0952	pCi/L	126	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	103		40 - 110

Lab Sample ID: LCSD 160-245254/3-A
Matrix: Water
Analysis Batch: 249010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 245254

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	14.96		1.48	1.00	0.124	pCi/L	134	68 - 137	0.32	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	105		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-245286/1-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245286

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2288	U	0.261	0.262	1.00	0.430	pCi/L	04/11/16 15:23	04/26/16 07:28	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.4		40 - 110	04/11/16 15:23	04/26/16 07:28	1
Y Carrier	86.4		40 - 110	04/11/16 15:23	04/26/16 07:28	1

Lab Sample ID: LCS 160-245286/2-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245286

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			15.3	19.73		2.02	1.00	0.376	pCi/L	129	56 - 140		

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

Lab Sample ID: LCS 160-245286/2-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245286

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	84.9		40 - 110

Lab Sample ID: LCSD 160-245286/3-A
Matrix: Water
Analysis Batch: 247955

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 245286

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			15.3	18.34		1.89	1.00	0.380	pCi/L	120	56 - 140	0.35	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	86.7		40 - 110

HPLC/IC

Analysis Batch: 334854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	9056A	
490-100759-10	MW-8	Total/NA	Water	9056A	
490-100759-11	MW-9	Total/NA	Water	9056A	
490-100759-12	MW-10	Total/NA	Water	9056A	
490-100759-13	DUPE	Total/NA	Water	9056A	
490-100759-14	BLANK	Total/NA	Water	9056A	
490-100759-B-8 MS	Matrix Spike	Total/NA	Water	9056A	
490-100759-B-8 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	
LCS 490-334854/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-334854/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-334854/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 338512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-10	MW-8	Total/NA	Water	9056A	
490-100759-12	MW-10	Total/NA	Water	9056A	
490-100759-13	DUPE	Total/NA	Water	9056A	
490-101617-B-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-101617-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	
LCS 490-338512/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-338512/4	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-338512/5	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 245257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	3010A	
490-100759-10	MW-8	Total/NA	Water	3010A	
490-100759-11	MW-9	Total/NA	Water	3010A	
490-100759-12	MW-10	Total/NA	Water	3010A	
490-100759-13	DUPE	Total/NA	Water	3010A	
490-100759-14	BLANK	Total/NA	Water	3010A	
490-100759-E-1-B MS	Matrix Spike	Total/NA	Water	3010A	
490-100759-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
LCS 160-245257/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-245257/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 245490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	3010A	
490-100759-10	MW-8	Total/NA	Water	3010A	
490-100759-11	MW-9	Total/NA	Water	3010A	
490-100759-12	MW-10	Total/NA	Water	3010A	
490-100759-13	DUPE	Total/NA	Water	3010A	
490-100759-14	BLANK	Total/NA	Water	3010A	
490-100759-E-1-E MS	Matrix Spike	Total/NA	Water	3010A	
490-100759-E-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
LCS 160-245490/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-245490/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Analysis Batch: 245738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	6010C	245490
490-100759-10	MW-8	Total/NA	Water	6010C	245490
490-100759-11	MW-9	Total/NA	Water	6010C	245490
490-100759-12	MW-10	Total/NA	Water	6010C	245490
490-100759-13	DUPE	Total/NA	Water	6010C	245490
490-100759-14	BLANK	Total/NA	Water	6010C	245490
490-100759-E-1-E MS	Matrix Spike	Total/NA	Water	6010C	245490
490-100759-E-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	245490
LCS 160-245490/2-A	Lab Control Sample	Total/NA	Water	6010C	245490
MB 160-245490/1-A	Method Blank	Total/NA	Water	6010C	245490

Analysis Batch: 246912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	6020A	245257
490-100759-10	MW-8	Total/NA	Water	6020A	245257
490-100759-11	MW-9	Total/NA	Water	6020A	245257
490-100759-12	MW-10	Total/NA	Water	6020A	245257
490-100759-13	DUPE	Total/NA	Water	6020A	245257
490-100759-14	BLANK	Total/NA	Water	6020A	245257
490-100759-E-1-B MS	Matrix Spike	Total/NA	Water	6020A	245257
490-100759-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	245257
LCS 160-245257/2-A	Lab Control Sample	Total/NA	Water	6020A	245257
MB 160-245257/1-A	Method Blank	Total/NA	Water	6020A	245257

Analysis Batch: 247093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-10	MW-8	Total/NA	Water	6020A	245257

Prep Batch: 329094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100652-A-1-C MS	Matrix Spike	Total/NA	Water	7470A	
490-100652-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
490-100759-9	MW-7	Total/NA	Water	7470A	
490-100759-10	MW-8	Total/NA	Water	7470A	
490-100759-11	MW-9	Total/NA	Water	7470A	
490-100759-12	MW-10	Total/NA	Water	7470A	
490-100759-13	DUPE	Total/NA	Water	7470A	
490-100759-14	BLANK	Total/NA	Water	7470A	
LCS 490-329094/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 490-329094/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 329102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100652-A-1-C MS	Matrix Spike	Total/NA	Water	7470A	329094
490-100652-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	329094
490-100759-9	MW-7	Total/NA	Water	7470A	329094
490-100759-10	MW-8	Total/NA	Water	7470A	329094
490-100759-11	MW-9	Total/NA	Water	7470A	329094
490-100759-12	MW-10	Total/NA	Water	7470A	329094
490-100759-13	DUPE	Total/NA	Water	7470A	329094
490-100759-14	BLANK	Total/NA	Water	7470A	329094

Metals (Continued)

Analysis Batch: 329102 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-329094/2-A	Lab Control Sample	Total/NA	Water	7470A	329094
MB 490-329094/1-A	Method Blank	Total/NA	Water	7470A	329094

General Chemistry

Analysis Batch: 328437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100579-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-100759-9	MW-7	Total/NA	Water	SM 2540C	
490-100759-10	MW-8	Total/NA	Water	SM 2540C	
490-100759-11	MW-9	Total/NA	Water	SM 2540C	
490-100759-12	MW-10	Total/NA	Water	SM 2540C	
490-100759-13	DUPE	Total/NA	Water	SM 2540C	
490-100759-14	BLANK	Total/NA	Water	SM 2540C	
LCS 490-328437/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-328437/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 490-328437/1	Method Blank	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 245254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	PrecSep-21	
490-100759-10	MW-8	Total/NA	Water	PrecSep-21	
490-100759-11	MW-9	Total/NA	Water	PrecSep-21	
490-100759-12	MW-10	Total/NA	Water	PrecSep-21	
490-100759-13	DUPE	Total/NA	Water	PrecSep-21	
490-100759-14	BLANK	Total/NA	Water	PrecSep-21	
LCS 160-245254/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-245254/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-245254/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 245286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-100759-9	MW-7	Total/NA	Water	PrecSep_0	
490-100759-10	MW-8	Total/NA	Water	PrecSep_0	
490-100759-11	MW-9	Total/NA	Water	PrecSep_0	
490-100759-12	MW-10	Total/NA	Water	PrecSep_0	
490-100759-13	DUPE	Total/NA	Water	PrecSep_0	
490-100759-14	BLANK	Total/NA	Water	PrecSep_0	
LCS 160-245286/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-245286/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-245286/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-7

Date Collected: 03/30/16 16:30
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-9
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	10 mL		334854	04/27/16 01:05	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:10	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 20:59	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:19	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.06 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.06 mL		248977	05/03/16 07:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.06 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.06 mL		247960	04/26/16 07:35	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 03/30/16 10:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-10
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		100	10 mL		338512	05/09/16 23:49	JHS	TAL NSH
Total/NA	Analysis	9056A		5	10 mL		334854	04/27/16 01:29	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:15	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 21:06	CB	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		5	50 mL	50 mL	247093	04/20/16 23:59	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:22	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.22 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.22 mL		248977	05/03/16 07:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.22 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.22 mL		247960	04/26/16 07:35	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 03/30/16 11:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-11
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	10 mL		334854	04/27/16 02:41	LDC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: MW-9

Date Collected: 03/30/16 11:50
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:33	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 21:13	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:24	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.94 mL		248977	05/03/16 07:06	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.94 mL		247960	04/26/16 07:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 03/30/16 14:40
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-12

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		20	10 mL		338512	05/10/16 00:06	JHS	TAL NSH
Total/NA	Analysis	9056A		1	10 mL		334854	04/27/16 03:05	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:37	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 21:19	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:26	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.75 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.75 mL		248977	05/03/16 07:06	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.75 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.75 mL		247960	04/26/16 07:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 03/30/16 15:05
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-13

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		20	10 mL		338512	05/10/16 00:23	JHS	TAL NSH
Total/NA	Analysis	9056A		1	10 mL		334854	04/27/16 03:29	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:42	LKJ	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Client Sample ID: DUPE

Date Collected: 03/30/16 15:05
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 21:26	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:33	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.57 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	999.57 mL		248977	05/03/16 07:06	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.57 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	999.57 mL		247960	04/26/16 07:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	TAL SL

Client Sample ID: BLANK

Date Collected: 03/30/16 00:01
Date Received: 04/02/16 09:30

Lab Sample ID: 490-100759-14

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		334854	04/27/16 03:53	LDC	TAL NSH
Total/NA	Prep	3010A			50 mL	50 mL	245490	04/11/16 11:20	SFF	TAL SL
Total/NA	Analysis	6010C		1	50 mL	50 mL	245738	04/13/16 23:46	LKJ	TAL SL
Total/NA	Prep	3010A			50 mL	50 mL	245257	04/11/16 11:21	LAM	TAL SL
Total/NA	Analysis	6020A		2	50 mL	50 mL	246912	04/19/16 21:33	CB	TAL SL
Total/NA	Prep	7470A			30 mL	30 mL	329094	04/04/16 21:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1	30 mL	30 mL	329102	04/05/16 07:35	KMS	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	328437	04/05/16 13:25	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.13 mL	1.0 g	245254	04/11/16 11:12	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1000.13 mL		248977	05/03/16 07:06	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.13 mL	1.0 g	245286	04/11/16 15:23	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1000.13 mL		247960	04/26/16 07:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			249382	05/04/16 21:00	RTM	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: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16 *
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-16 *
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16 *
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16 *
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-100759 Chain of Custody

Cooler Received/Opened On 4/2/2016 @ 0930

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

1. Tracking # 9250 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 97310166 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

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: 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) TH

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) TH

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) TH

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

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
100759

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 4/2/2016 @ 0930

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

1. Tracking # 8350 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 18290455 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

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

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

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) TH

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) TH

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) TH

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

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
100759

COOLER RECEIPT FORM

Cooler Received/Opened On 4/2/16 @ 0930

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

1. Tracking # 9191 1796 8353 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID ~~18290455~~ pH Strip Lot HC568401 Chlorine Strip Lot 1211515B

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 Front

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

6. Were custody papers inside cooler? YES...NO...NA SLW 4/2/16

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

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) TH

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) TH

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) TH

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

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
100759
#10
B

Cooler Received/Opened On 4/2/2016 @ 0930

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

1. Tracking # 9272 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 18290455 pH Strip Lot HC564992 Chlorine Strip Lot 041514A

2. Temperature of rep. sample or temp blank when opened: 2.0 *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: 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) MMK

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) TH

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) TH

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) TH

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

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	Project Manager: Bradley Coyle	Site Contact: Bradley Coyle	Date: 4/1/16	COC No: 490-51437-16688.2
Big Rivers Electric Corporation	Tel/Fax: 270-993-1572	Lab Contact: Roxanne Cisneros	Carrier: FedEx	1 of 1 COCs
201 Third Street	Analysis Turnaround Time			Sampler:
City/State/Zip	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
270-844-6032	TAT if different from Below _____			Walk-in Client:
bradley.coyle@bigrivers.com	☑ 2 weeks			Lab Sampling:
REID/HMPL IMPOUNDMENT	☐ 1 week			
Project: 49002917	☐ 2 days			Job / SDG No.:
P O #	☐ 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)	9040C, 9056_ORGFM_28D	6010B, 7470A	2540C_Calcd - TDS	Ra226 & 228 Combined	Sample Specific Notes:
MW-7	3/30/16	1630	G	GW	5	N		1	4	1	4	
MW-8	3/30/16	1040	G	GW	5	N		1	4	1	4	
MW-9	3/30/16	1150	G	GW	5	N		1	4	1	4	
MW-10	3/30/16	1440	G	GW	5	N		1	4	1	4	
DUPE	3/30/16	1505	G	GW	5	N		1	4	1	4	
BLANK	3/30/16		G	GW	5	N		1	4	1	4	

Loc: 490
100759

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

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: Run samples per protocol/methodology prescribed in 40 CFR Part 257.

*

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.: _____
Relinquished by:	Company: BREC	Date/Time: 04/01/1500	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company: TALN	Date/Time: 4.2.16 0930
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

5/10/2016

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: 490-42985.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: cathy.gartner@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-100759-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/14/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: REID/HMPL Impoundment	Project #: 49010431			
Site:	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-7 (490-100759-9)	3/30/16	16:30 Central		Water			X	X	X	2	
MW-8 (490-100759-10)	3/30/16	10:40 Central		Water			X	X	X	2	
MW-9 (490-100759-11)	3/30/16	11:50 Central		Water			X	X	X	2	
MW-10 (490-100759-12)	3/30/16	14:40 Central		Water			X	X	X	2	
DUPE (490-100759-13)	3/30/16	15:05 Central		Water			X	X	X	2	
BLANK (490-100759-14)	3/30/16	00:01 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)

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]	4/6/16 1533	TAN	[signature]	4.5.16 0900	TASR
2	Relinquished by:	Date/Time: 4/6/16	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:

5/10/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-100759-4

Login Number: 100759
List Number: 1
Creator: Threalkill, Tevin

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: 490-100759-4

Login Number: 100759
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 04/05/16 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	20.0, 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: REID/HMPL Impoundment

TestAmerica Job ID: 490-100759-3

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-100759-9	MW-7	94.9
490-100759-10	MW-8	96.4
490-100759-11	MW-9	105
490-100759-12	MW-10	96.2
490-100759-13	DUPE	101
490-100759-14	BLANK	97.3
LCS 160-245254/2-A	Lab Control Sample	103
LCSD 160-245254/3-A	Lab Control Sample Dup	105
MB 160-245254/1-A	Method Blank	98.4

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-100759-9	MW-7	94.9	80.7
490-100759-10	MW-8	96.4	79.6
490-100759-11	MW-9	105	81.1
490-100759-12	MW-10	96.2	81.1
490-100759-13	DUPE	101	80.4
490-100759-14	BLANK	97.3	81.1
LCS 160-245286/2-A	Lab Control Sample	103	84.9
LCSD 160-245286/3-A	Lab Control Sample Dup	105	86.7
MB 160-245286/1-A	Method Blank	98.4	86.4

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-104973-1
Client Project/Site: Reid/HMPL Impoundment CCR
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
7/8/2016 12:49:24 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-104973-1	MW-7	Water	05/31/16 13:35	06/03/16 10:00
490-104973-2	MW-8	Water	05/31/16 14:55	06/03/16 10:00
490-104973-3	MW-9	Water	05/31/16 10:10	06/03/16 10:00
490-104973-4	MW-10	Water	05/31/16 12:20	06/03/16 10:00
490-104973-5	DUPE	Water	05/31/16 10:25	06/03/16 10:00
490-104973-6	FIELD BLANK	Water	05/31/16 16:00	06/03/16 10:00

Job ID: 490-104973-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-104973-1

Comments
No additional comments.

Receipt
The samples were received on 6/3/2016 10:00 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, 1.0º C and 1.4º C.

RAD
Method(s) PrecSep_0: Radium-228 Prep Batch 160-256209:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-104973-1), MW-8 (490-104973-2), MW-9 (490-104973-3), MW-10 (490-104973-4), DUPE (490-104973-5) and FIELD BLANK (490-104973-6). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep-21: Radium-2286 Prep Batch 160-256206:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-104973-1), MW-8 (490-104973-2), MW-9 (490-104973-3), MW-10 (490-104973-4), DUPE (490-104973-5) and FIELD BLANK (490-104973-6). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

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

Narrative

Job Narrative
490-104973-2

Comments
No additional comments.

Receipt
The samples were received on 6/3/2016 10:00 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, 1.0º C and 1.4º C.

HPLC/IC
Method(s) 9056, 9056A: The method blank for analytical batch 490-346895 contained chloride above the method detection limit (MDL). Associated samples were not re-analyzed because the results were greater than 10X the value found in the method blank.

Method(s) 9056, 9056A: The following sample was diluted due to the nature of the sample matrix: MW-8 (490-104973-2). 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.

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: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-7

Date Collected: 05/31/16 13:35
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.52	J	3.00	0.200	mg/L			06/09/16 23:28	1
Fluoride	0.223	J	1.00	0.0100	mg/L			06/09/16 23:28	1
Sulfate	13.2		5.00	0.0300	mg/L			06/09/16 23:28	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		06/08/16 14:09	06/13/16 17:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000579	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/13/16 23:52	1
Arsenic	0.00118	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/13/16 23:52	1
Barium	0.0528	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/13/16 23:52	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/13/16 23:52	1
Boron	0.245	J	1.00	0.000277	mg/L		06/08/16 14:10	06/13/16 23:52	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/13/16 23:52	1
Calcium	42.1	B	1.00	0.00284	mg/L		06/08/16 14:10	06/13/16 23:52	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/13/16 23:52	1
Cobalt	0.000567	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/13/16 23:52	1
Lead	0.0000820	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/13/16 23:52	1
Molybdenum	0.0185		0.0100	0.000223	mg/L		06/08/16 14:10	06/13/16 23:52	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/13/16 23:52	1
Thallium	0.0000580	J	0.00100	0.0000152	mg/L		06/08/16 14:10	06/13/16 23:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 15:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.26		0.100	0.100	SU			06/08/16 10:01	1
Temperature	22.0		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	243		10.0	7.00	mg/L			06/07/16 18:47	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	0.363		0.0870	0.0930	1.00	0.0691	pCi/L	06/13/16 18:55	07/05/16 07:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:34*	*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	0.322	U	0.223	0.225	1.00	0.344	pCi/L	06/13/16 19:35	06/28/16 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*1*

Client Sample ID: MW-7
Date Collected: 05/31/16 13:35
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.6		40 - 110	06/13/16 19:35	06/28/16 13:30	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	0.685		0.239	0.243	5.00	0.344	pCi/L		07/07/16 18:25	1

Client Sample ID: MW-8

Date Collected: 05/31/16 14:55
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.2	J	60.0	4.00	mg/L			06/10/16 01:08	20
Fluoride	0.417	J F1	1.00	0.0100	mg/L			06/10/16 00:08	1
Sulfate	1140		250	1.50	mg/L			06/10/16 16:54	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0350	J	0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 17:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000820	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/13/16 23:57	1
Arsenic	0.000698	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/13/16 23:57	1
Barium	0.0185	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/13/16 23:57	1
Beryllium	0.0000380	J	0.00200	0.0000367	mg/L		06/08/16 14:10	06/13/16 23:57	1
Boron	1.07		1.00	0.000277	mg/L		06/08/16 14:10	06/13/16 23:57	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/13/16 23:57	1
Calcium	242	B	1.00	0.00284	mg/L		06/08/16 14:10	06/13/16 23:57	1
Chromium	0.000676	J	0.00300	0.000543	mg/L		06/08/16 14:10	06/13/16 23:57	1
Cobalt	0.0000590	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/13/16 23:57	1
Lead	ND		0.00500	0.0000192	mg/L		06/08/16 14:10	06/13/16 23:57	1
Molybdenum	0.0186		0.0100	0.000223	mg/L		06/08/16 14:10	06/13/16 23:57	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/13/16 23:57	1
Thallium	0.0000350	J	0.00100	0.0000152	mg/L		06/08/16 14:10	06/13/16 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		06/06/16 07:18	06/06/16 16:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.16		0.100	0.100	SU			06/08/16 10:01	1
Temperature	22.0		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	1980		20.0	14.0	mg/L			06/07/16 18:47	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	0.452		0.104	0.112	1.00	0.0821	pCi/L	06/13/16 18:55	07/05/16 07:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.3*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:34*	*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	0.867		0.334	0.344	1.00	0.463	pCi/L	06/13/16 19:35	06/28/16 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.3*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*1*

Client Sample ID: MW-8
Date Collected: 05/31/16 14:55
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.7		40 - 110	06/13/16 19:35	06/28/16 13:30	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	1.32		0.350	0.362	5.00	0.463	pCi/L		07/07/16 18:25	1

Client Sample ID: MW-9

Date Collected: 05/31/16 10:10
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30.9		3.00	0.200	mg/L			06/10/16 02:08	1
Fluoride	0.238	J	1.00	0.0100	mg/L			06/10/16 02:08	1
Sulfate	17.6		5.00	0.0300	mg/L			06/10/16 02:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0105	J	0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 17:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000290	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:02	1
Arsenic	0.000494	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:02	1
Barium	1.03		0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:02	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:02	1
Boron	0.264	J	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:02	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:02	1
Calcium	71.2	B	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:02	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:02	1
Cobalt	0.0000730	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:02	1
Lead	0.0000220	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:02	1
Molybdenum	ND		0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:02	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:02	1
Thallium	0.0000240	J	0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 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		06/06/16 07:18	06/06/16 16:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.41		0.100	0.100	SU			06/08/16 10:01	1
Temperature	22.0		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	389		10.0	7.00	mg/L			06/07/16 18:47	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	1.79		0.176	0.239	1.00	0.0533	pCi/L	06/13/16 18:55	07/05/16 07:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:34*	*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	1.05		0.292	0.308	1.00	0.378	pCi/L	06/13/16 19:35	06/28/16 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*1*

Client Sample ID: MW-9
Date Collected: 05/31/16 10:10
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-3
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	91.2		40 - 110	06/13/16 19:35	06/28/16 13:30	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	2.84		0.341	0.390	5.00	0.378	pCi/L		07/07/16 18:25	1

Client Sample ID: MW-10

Date Collected: 05/31/16 12:20
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.9		3.00	0.200	mg/L			06/10/16 02:49	1
Fluoride	0.436	J	1.00	0.0100	mg/L			06/10/16 02:49	1
Sulfate	135		50.0	0.300	mg/L			06/10/16 03:09	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.199		0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 17:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000106	J B	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:07	1
Arsenic	0.00203	J	0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:07	1
Barium	0.0477	J	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:07	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:07	1
Boron	0.336	J	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:07	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:07	1
Calcium	21.3	B	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:07	1
Chromium	0.000591	J	0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:07	1
Cobalt	0.000122	J	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:07	1
Lead	0.000423	J B	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:07	1
Molybdenum	0.0171		0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:07	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:07	1
Thallium	0.0000370	J	0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 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		06/06/16 07:18	06/06/16 16:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.62		0.100	0.100	SU			06/08/16 10:01	1
Temperature	22.0		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	532		10.0	7.00	mg/L			06/07/16 18:47	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		0.0692	0.0708	1.00	0.0855	pCi/L	06/13/16 18:55	07/05/16 07:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:40*	*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	0.0251	U	0.244	0.244	1.00	0.432	pCi/L	06/13/16 19:35	06/28/16 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*1*

Client Sample ID: MW-10
Date Collected: 05/31/16 12:20
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-4
Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*85.2*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*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	0.191	U	0.254	0.254	5.00	0.432	pCi/L		07/07/16 18:25	1

Client Sample ID: DUPE

Date Collected: 05/31/16 10:25
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**29.6**		3.00	0.200	mg/L			06/10/16 03:29	1
Fluoride	**0.252**	**J**	1.00	0.0100	mg/L			06/10/16 03:29	1
Sulfate	**15.8**		5.00	0.0300	mg/L			06/10/16 03:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.00983**	**J**	0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 17:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000250**	**J B**	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:28	1
Arsenic	**0.000420**	**J**	0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:28	1
Barium	**1.02**		0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:28	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:28	1
Boron	**0.256**	**J**	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:28	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:28	1
Calcium	**68.8**	**B**	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:28	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:28	1
Cobalt	**0.0000620**	**J**	0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:28	1
Lead	**0.0000980**	**J B**	0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:28	1
Molybdenum	ND		0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:28	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:28	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 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		06/06/16 07:18	06/06/16 16:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.36**		0.100	0.100	SU			06/08/16 10:01	1
Temperature	**22.0**		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	**381**		10.0	7.00	mg/L			06/07/16 18:47	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	**1.57**		0.165	0.218	1.00	0.0810	pCi/L	06/13/16 18:55	07/05/16 07:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.9*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:40*	*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	**0.834**		0.286	0.296	1.00	0.391	pCi/L	06/13/16 19:35	06/28/16 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.9*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*1*

Client Sample ID: DUPE
Date Collected: 05/31/16 10:25
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.5		40 - 110	06/13/16 19:35	06/28/16 13:30	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	2.41		0.331	0.368	5.00	0.391	pCi/L		07/07/16 18:25	1

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-104973-6

Date Collected: 05/31/16 16:00

Matrix: Water

Date Received: 06/03/16 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			06/10/16 04:09	1
Fluoride	ND		1.00	0.0100	mg/L			06/10/16 04:09	1
Sulfate	ND		5.00	0.0300	mg/L			06/10/16 04:09	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		06/08/16 14:09	06/13/16 17:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000390**	**J B**	0.00200	0.0000187	mg/L		06/08/16 14:10	06/14/16 00:33	1
Arsenic	ND		0.00500	0.000291	mg/L		06/08/16 14:10	06/14/16 00:33	1
Barium	**0.000214**	**J**	0.200	0.0000980	mg/L		06/08/16 14:10	06/14/16 00:33	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/14/16 00:33	1
Boron	**0.0101**	**J**	1.00	0.000277	mg/L		06/08/16 14:10	06/14/16 00:33	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/14/16 00:33	1
Calcium	**0.00311**	**J B**	1.00	0.00284	mg/L		06/08/16 14:10	06/14/16 00:33	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/14/16 00:33	1
Cobalt	ND		0.00500	0.0000263	mg/L		06/08/16 14:10	06/14/16 00:33	1
Lead	ND		0.00500	0.0000192	mg/L		06/08/16 14:10	06/14/16 00:33	1
Molybdenum	ND		0.0100	0.000223	mg/L		06/08/16 14:10	06/14/16 00:33	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/14/16 00:33	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/14/16 00:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 16:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.93**		0.100	0.100	SU			06/08/16 10:01	1
Temperature	**22.0**		0.100	0.100	Degrees C			06/08/16 10:01	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			06/07/16 18:47	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	0.0465	0.0465	1.00	0.0820	pCi/L	06/13/16 18:55	07/05/16 07:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.7*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:40*	*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	0.107	U	0.203	0.204	1.00	0.347	pCi/L	06/13/16 19:35	06/28/16 13:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.7*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 05/31/16 16:00
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-6
Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*93.1*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:30*	*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	0.129	U	0.209	0.209	5.00	0.347	pCi/L		07/07/16 18:25	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-346638/3
Matrix: Water
Analysis Batch: 346638

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			06/09/16 20:27	1
Fluoride	ND		1.00	0.0100	mg/L			06/09/16 20:27	1
Sulfate	ND		5.00	0.0300	mg/L			06/09/16 20:27	1

Lab Sample ID: LCS 490-346638/4
Matrix: Water
Analysis Batch: 346638

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	9.476		mg/L		95	80 - 120
Fluoride	1.00	0.9323	J	mg/L		93	80 - 120
Sulfate	10.0	9.153		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-346638/5
Matrix: Water
Analysis Batch: 346638

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	9.191		mg/L		92	80 - 120	3	20
Fluoride	1.00	0.9537	J	mg/L		95	80 - 120	2	20
Sulfate	10.0	9.181		mg/L		92	80 - 120	0	20

Lab Sample ID: 490-104973-2 MS
Matrix: Water
Analysis Batch: 346638

Client Sample ID: MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	42.1	E	2.00	35.96	4	mg/L		-307	80 - 120
Fluoride	0.417	J F1	0.200	0.5288	J F1	mg/L		56	80 - 120
Sulfate	1080	E	2.00	882.1	E 4	mg/L		-1014	80 - 120
								2	

Lab Sample ID: 490-104973-2 MSD
Matrix: Water
Analysis Batch: 346638

Client Sample ID: MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	42.1	E	2.00	36.05	4	mg/L		-302	80 - 120	0	20
Fluoride	0.417	J F1	0.200	0.5234	J F1	mg/L		53	80 - 120	1	20
Sulfate	1080	E	2.00	883.1	E 4	mg/L		-1009	80 - 120	0	20
								0			

Lab Sample ID: MB 490-346895/6
Matrix: Water
Analysis Batch: 346895

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4984	J	3.00	0.200	mg/L			06/10/16 14:55	1
Fluoride	ND		1.00	0.0100	mg/L			06/10/16 14:55	1
Sulfate	ND		5.00	0.0300	mg/L			06/10/16 14:55	1

Lab Sample ID: LCS 490-346895/7
Matrix: Water
Analysis Batch: 346895

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	10.15		mg/L		101	80 - 120
Fluoride	1.00	0.9847	J	mg/L		98	80 - 120
Sulfate	10.0	9.715		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-346895/8
Matrix: Water
Analysis Batch: 346895

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	10.08		mg/L		101	80 - 120	1	20
Fluoride	1.00	0.9936	J	mg/L		99	80 - 120	1	20
Sulfate	10.0	9.724		mg/L		97	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-178652/1-A
Matrix: Water
Analysis Batch: 179073

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 178652

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/08/16 14:09	06/13/16 16:51	1

Lab Sample ID: LCS 180-178652/2-A
Matrix: Water
Analysis Batch: 179073

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 178652

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9828		mg/L		98	80 - 120

Lab Sample ID: LCSD 180-178652/3-A
Matrix: Water
Analysis Batch: 179073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 178652

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9964		mg/L		100	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-178655/1-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001330	J	0.00200	0.0000187	mg/L		06/08/16 14:10	06/13/16 23:27	1
Arsenic	ND		0.00500	0.000291	mg/L		06/08/16 14:10	06/13/16 23:27	1
Barium	ND		0.200	0.0000980	mg/L		06/08/16 14:10	06/13/16 23:27	1
Beryllium	ND		0.00200	0.0000367	mg/L		06/08/16 14:10	06/13/16 23:27	1
Boron	ND		1.00	0.000277	mg/L		06/08/16 14:10	06/13/16 23:27	1
Cadmium	ND		0.00100	0.000114	mg/L		06/08/16 14:10	06/13/16 23:27	1
Calcium	0.005215	J	1.00	0.00284	mg/L		06/08/16 14:10	06/13/16 23:27	1
Chromium	ND		0.00300	0.000543	mg/L		06/08/16 14:10	06/13/16 23:27	1

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

Lab Sample ID: MB 180-178655/1-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00500	0.0000263	mg/L		06/08/16 14:10	06/13/16 23:27	1
Lead	0.00003200	J	0.00500	0.0000192	mg/L		06/08/16 14:10	06/13/16 23:27	1
Molybdenum	ND		0.0100	0.000223	mg/L		06/08/16 14:10	06/13/16 23:27	1
Selenium	ND		0.0100	0.000422	mg/L		06/08/16 14:10	06/13/16 23:27	1
Thallium	ND		0.00100	0.0000152	mg/L		06/08/16 14:10	06/13/16 23:27	1

Lab Sample ID: LCS 180-178655/2-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5300		mg/L		106	80 - 120
Arsenic	0.0400	0.04050		mg/L		101	80 - 120
Barium	2.00	2.030		mg/L		102	80 - 120
Beryllium	0.0500	0.04600		mg/L		92	80 - 120
Boron	1.00	0.8370	J	mg/L		84	80 - 120
Cadmium	0.0500	0.05382		mg/L		108	80 - 120
Calcium	50.0	51.71		mg/L		103	80 - 120
Chromium	0.200	0.1952		mg/L		98	80 - 120
Cobalt	0.500	0.4673		mg/L		93	80 - 120
Lead	0.0200	0.02163		mg/L		108	80 - 120
Molybdenum	1.00	1.192		mg/L		119	80 - 120
Selenium	0.0100	0.009468	J	mg/L		95	80 - 120
Thallium	0.0500	0.05299		mg/L		106	80 - 120

Lab Sample ID: LCSD 180-178655/3-A
Matrix: Water
Analysis Batch: 179596

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 178655

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5560		mg/L		111	80 - 120	5	20
Arsenic	0.0400	0.04015		mg/L		100	80 - 120	1	20
Barium	2.00	2.044		mg/L		102	80 - 120	1	20
Beryllium	0.0500	0.04591		mg/L		92	80 - 120	0	20
Boron	1.00	0.8132	J	mg/L		81	80 - 120	3	20
Cadmium	0.0500	0.05253		mg/L		105	80 - 120	2	20
Calcium	50.0	54.57		mg/L		109	80 - 120	5	20
Chromium	0.200	0.1945		mg/L		97	80 - 120	0	20
Cobalt	0.500	0.4753		mg/L		95	80 - 120	2	20
Lead	0.0200	0.02217		mg/L		111	80 - 120	2	20
Molybdenum	1.00	1.194		mg/L		119	80 - 120	0	20
Selenium	0.0100	0.008636	J	mg/L		86	80 - 120	9	20
Thallium	0.0500	0.05425		mg/L		109	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-345448/1-A
Matrix: Water
Analysis Batch: 345693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 345448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		06/06/16 07:18	06/06/16 15:50	1

Lab Sample ID: LCS 490-345448/2-A
Matrix: Water
Analysis Batch: 345693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 345448

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.9194		ug/L		92	80 - 120		

Lab Sample ID: 490-104973-1 MS
Matrix: Water
Analysis Batch: 345693

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 345448

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	0.9111		ug/L		91	75 - 125		

Lab Sample ID: 490-104973-1 MSD
Matrix: Water
Analysis Batch: 345693

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 345448

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8938		ug/L		89	75 - 125	2	20

Method: 9040C - pH

Lab Sample ID: LCS 490-346130/1
Matrix: Water
Analysis Batch: 346130

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: 490-104949-A-1 DU
Matrix: Water
Analysis Batch: 346130

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.57		7.570		SU				0	20
Temperature	22.0		22.00		Degrees C				0	20

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

Lab Sample ID: MB 490-344919/1
Matrix: Water
Analysis Batch: 344919

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			06/07/16 18:47	1

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

Lab Sample ID: LCS 490-344919/2
Matrix: Water
Analysis Batch: 344919

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: 490-104973-1 DU
Matrix: Water
Analysis Batch: 344919

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	243			232.0		mg/L				5	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-256206/1-A
Matrix: Water
Analysis Batch: 259193

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256206

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04701	U	0.0439	0.0441	1.00	0.0679	pCi/L	06/13/16 18:55	07/05/16 07:32	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*06/13/16 18:55*	*07/05/16 07:32*	*1*

Lab Sample ID: LCS 160-256206/2-A
Matrix: Water
Analysis Batch: 259193

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256206

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	14.81		1.43	1.00	0.0685	pCi/L	133	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.0*		*40 - 110*

Lab Sample ID: LCSD 160-256206/3-A
Matrix: Water
Analysis Batch: 259193

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256206

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	14.62		1.41	1.00	0.0724	pCi/L	131	68 - 137	0.07	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.7*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-256209/1-A
Matrix: Water
Analysis Batch: 258247

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256209

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.06947	U	0.225	0.225	1.00	0.390	pCi/L	06/13/16 19:35	06/28/16 13:28	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:28*	*1*
Y Carrier	*86.7*		*40 - 110*	*06/13/16 19:35*	*06/28/16 13:28*	*1*

Lab Sample ID: LCS 160-256209/2-A
Matrix: Water
Analysis Batch: 258247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256209

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.9	17.17		1.80	1.00	0.351	pCi/L	115	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.0*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

Lab Sample ID: LCSD 160-256209/3-A
Matrix: Water
Analysis Batch: 258247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256209

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.9	19.64		2.04	1.00	0.365	pCi/L	131	56 - 140	0.64	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.7*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

HPLC/IC

Analysis Batch: 346638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total/NA	Water	9056A	
490-104973-2	MW-8	Total/NA	Water	9056A	
490-104973-2	MW-8	Total/NA	Water	9056A	
490-104973-2 MS	MW-8	Total/NA	Water	9056A	
490-104973-2 MSD	MW-8	Total/NA	Water	9056A	
490-104973-3	MW-9	Total/NA	Water	9056A	
490-104973-4	MW-10	Total/NA	Water	9056A	
490-104973-4	MW-10	Total/NA	Water	9056A	
490-104973-5	DUPE	Total/NA	Water	9056A	
490-104973-6	FIELD BLANK	Total/NA	Water	9056A	
LCS 490-346638/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-346638/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-346638/3	Method Blank	Total/NA	Water	9056A	

Analysis Batch: 346895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-2	MW-8	Total/NA	Water	9056A	
LCS 490-346895/7	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-346895/8	Lab Control Sample Dup	Total/NA	Water	9056A	
MB 490-346895/6	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 178652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total Recoverable	Water	3005A	
490-104973-2	MW-8	Total Recoverable	Water	3005A	
490-104973-3	MW-9	Total Recoverable	Water	3005A	
490-104973-4	MW-10	Total Recoverable	Water	3005A	
490-104973-5	DUPE	Total Recoverable	Water	3005A	
490-104973-6	FIELD BLANK	Total Recoverable	Water	3005A	
LCS 180-178652/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-178652/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 180-178652/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 178655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total Recoverable	Water	3005A	
490-104973-2	MW-8	Total Recoverable	Water	3005A	
490-104973-3	MW-9	Total Recoverable	Water	3005A	
490-104973-4	MW-10	Total Recoverable	Water	3005A	
490-104973-5	DUPE	Total Recoverable	Water	3005A	
490-104973-6	FIELD BLANK	Total Recoverable	Water	3005A	
LCS 180-178655/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-178655/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 180-178655/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 179073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total Recoverable	Water	6010C	178652

Metals (Continued)

Analysis Batch: 179073 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-2	MW-8	Total Recoverable	Water	6010C	178652
490-104973-3	MW-9	Total Recoverable	Water	6010C	178652
490-104973-4	MW-10	Total Recoverable	Water	6010C	178652
490-104973-5	DUPE	Total Recoverable	Water	6010C	178652
490-104973-6	FIELD BLANK	Total Recoverable	Water	6010C	178652
LCS 180-178652/2-A	Lab Control Sample	Total Recoverable	Water	6010C	178652
LCSD 180-178652/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	178652
MB 180-178652/1-A	Method Blank	Total Recoverable	Water	6010C	178652

Analysis Batch: 179596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total Recoverable	Water	6020A	178655
490-104973-2	MW-8	Total Recoverable	Water	6020A	178655
490-104973-3	MW-9	Total Recoverable	Water	6020A	178655
490-104973-4	MW-10	Total Recoverable	Water	6020A	178655
490-104973-5	DUPE	Total Recoverable	Water	6020A	178655
490-104973-6	FIELD BLANK	Total Recoverable	Water	6020A	178655
LCS 180-178655/2-A	Lab Control Sample	Total Recoverable	Water	6020A	178655
LCSD 180-178655/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	178655
MB 180-178655/1-A	Method Blank	Total Recoverable	Water	6020A	178655

Prep Batch: 345448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total/NA	Water	7470A	
490-104973-1 MS	MW-7	Total/NA	Water	7470A	
490-104973-1 MSD	MW-7	Total/NA	Water	7470A	
490-104973-2	MW-8	Total/NA	Water	7470A	
490-104973-3	MW-9	Total/NA	Water	7470A	
490-104973-4	MW-10	Total/NA	Water	7470A	
490-104973-5	DUPE	Total/NA	Water	7470A	
490-104973-6	FIELD BLANK	Total/NA	Water	7470A	
LCS 490-345448/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 490-345448/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 345693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total/NA	Water	7470A	345448
490-104973-1 MS	MW-7	Total/NA	Water	7470A	345448
490-104973-1 MSD	MW-7	Total/NA	Water	7470A	345448
490-104973-2	MW-8	Total/NA	Water	7470A	345448
490-104973-3	MW-9	Total/NA	Water	7470A	345448
490-104973-4	MW-10	Total/NA	Water	7470A	345448
490-104973-5	DUPE	Total/NA	Water	7470A	345448
490-104973-6	FIELD BLANK	Total/NA	Water	7470A	345448
LCS 490-345448/2-A	Lab Control Sample	Total/NA	Water	7470A	345448
MB 490-345448/1-A	Method Blank	Total/NA	Water	7470A	345448

General Chemistry

Analysis Batch: 344919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total/NA	Water	SM 2540C	
490-104973-1 DU	MW-7	Total/NA	Water	SM 2540C	
490-104973-2	MW-8	Total/NA	Water	SM 2540C	
490-104973-3	MW-9	Total/NA	Water	SM 2540C	
490-104973-4	MW-10	Total/NA	Water	SM 2540C	
490-104973-5	DUPE	Total/NA	Water	SM 2540C	
490-104973-6	FIELD BLANK	Total/NA	Water	SM 2540C	
LCS 490-344919/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-344919/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 490-344919/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 346130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104949-A-1 DU	Duplicate	Total/NA	Water	9040C	
490-104973-1	MW-7	Total/NA	Water	9040C	
490-104973-2	MW-8	Total/NA	Water	9040C	
490-104973-3	MW-9	Total/NA	Water	9040C	
490-104973-4	MW-10	Total/NA	Water	9040C	
490-104973-5	DUPE	Total/NA	Water	9040C	
490-104973-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-346130/1	Lab Control Sample	Total/NA	Water	9040C	

Rad

Prep Batch: 256206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total/NA	Water	PrecSep-21	
490-104973-2	MW-8	Total/NA	Water	PrecSep-21	
490-104973-3	MW-9	Total/NA	Water	PrecSep-21	
490-104973-4	MW-10	Total/NA	Water	PrecSep-21	
490-104973-5	DUPE	Total/NA	Water	PrecSep-21	
490-104973-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
LCS 160-256206/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-256206/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-256206/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 256209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-104973-1	MW-7	Total/NA	Water	PrecSep_0	
490-104973-2	MW-8	Total/NA	Water	PrecSep_0	
490-104973-3	MW-9	Total/NA	Water	PrecSep_0	
490-104973-4	MW-10	Total/NA	Water	PrecSep_0	
490-104973-5	DUPE	Total/NA	Water	PrecSep_0	
490-104973-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
LCS 160-256209/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-256209/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-256209/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Client Sample ID: MW-7

Date Collected: 05/31/16 13:35
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-1
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	10 mL		346638	06/09/16 23:28	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:06	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/13/16 23:52	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 15:55	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	344919	06/07/16 18:47	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.27 mL	1.0 g	256206	06/13/16 18:55	BME	TAL SL
Total/NA	Analysis	903.0		1	1000.27 mL		259193	07/05/16 07:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.27 mL	1.0 g	256209	06/13/16 19:35	BME	TAL SL
Total/NA	Analysis	904.0		1	1000.27 mL		258247	06/28/16 13:30	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259609	07/07/16 18:25	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 05/31/16 14:55
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-2
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		50	10 mL		346895	06/10/16 16:54	JHS	TAL NSH
Total/NA	Analysis	9056A		1	10 mL		346638	06/10/16 00:08	NC	TAL NSH
Total/NA	Analysis	9056A		20	10 mL		346638	06/10/16 01:08	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:16	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/13/16 23:57	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:06	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	344919	06/07/16 18:47	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	256206	06/13/16 18:55	BME	TAL SL
Total/NA	Analysis	903.0		1	999.94 mL		259193	07/05/16 07:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	256209	06/13/16 19:35	BME	TAL SL
Total/NA	Analysis	904.0		1	999.94 mL		258247	06/28/16 13:30	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259609	07/07/16 18:25	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Client Sample ID: MW-9

Date Collected: 05/31/16 10:10
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-3

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	10 mL		346638	06/10/16 02:08	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:21	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:02	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:09	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	344919	06/07/16 18:47	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.81 mL	1.0 g	256206	06/13/16 18:55	BME	TAL SL
Total/NA	Analysis	903.0		1	999.81 mL		259193	07/05/16 07:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.81 mL	1.0 g	256209	06/13/16 19:35	BME	TAL SL
Total/NA	Analysis	904.0		1	999.81 mL		258247	06/28/16 13:30	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259609	07/07/16 18:25	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 05/31/16 12:20
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-4

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	10 mL		346638	06/10/16 02:49	NC	TAL NSH
Total/NA	Analysis	9056A		10	10 mL		346638	06/10/16 03:09	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:26	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:07	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:11	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	344919	06/07/16 18:47	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.06 mL	1.0 g	256206	06/13/16 18:55	BME	TAL SL
Total/NA	Analysis	903.0		1	1000.06 mL		259194	07/05/16 07:40	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.06 mL	1.0 g	256209	06/13/16 19:35	BME	TAL SL
Total/NA	Analysis	904.0		1	1000.06 mL		258247	06/28/16 13:30	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259609	07/07/16 18:25	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 05/31/16 10:25
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-5

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		346638	06/10/16 03:29	NC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Client Sample ID: DUPE

Date Collected: 05/31/16 10:25
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-5
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	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:32	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:28	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:13	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	344919	06/07/16 18:47	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.00 mL	1.0 g	256206	06/13/16 18:55	BME	TAL SL
Total/NA	Analysis	903.0		1	1000.00 mL		259194	07/05/16 07:40	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.00 mL	1.0 g	256209	06/13/16 19:35	BME	TAL SL
Total/NA	Analysis	904.0		1	1000.00 mL		258247	06/28/16 13:30	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259609	07/07/16 18:25	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 05/31/16 16:00
Date Received: 06/03/16 10:00

Lab Sample ID: 490-104973-6
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	10 mL		346638	06/10/16 04:09	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	178652	06/08/16 14:09	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1	50 mL	50 mL	179073	06/13/16 17:47	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	178655	06/08/16 14:10	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1	50 mL	50 mL	179596	06/14/16 00:33	WTR	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	345448	06/06/16 07:18	BLG	TAL NSH
Total/NA	Analysis	7470A		1	30.0 mL	30.0 mL	345693	06/06/16 16:16	RDF	TAL NSH
Total/NA	Analysis	9040C		1		20 mL	346130	06/08/16 10:01	HMV	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	344919	06/07/16 18:47	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.04 mL	1.0 g	256206	06/13/16 18:55	BME	TAL SL
Total/NA	Analysis	903.0		1	1000.04 mL		259194	07/05/16 07:40	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.04 mL	1.0 g	256209	06/13/16 19:35	BME	TAL SL
Total/NA	Analysis	904.0		1	1000.04 mL		258247	06/28/16 13:30	ALS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			259609	07/07/16 18:25	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: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-16 *

Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-16
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	07-31-16
Louisiana	NELAP	6	04041	06-30-16 *
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-16 *
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-16
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-104973 Chain of Custody

Cooler Received/Opened On 6-03-16 @ 1000

Time Samples Removed From Cooler 1830 Time Samples Placed In Storage 1706 (2 Hour Window)

1. Tracking # 5303 (last 4 digits, FedEx) Courier: fed ex

IR Gun ID 18290455 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

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 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 # 1

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

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) AES

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) AES

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

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

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

Cooler Received/Opened On 6-03-16 @ 1000

Time Samples Removed From Cooler 1830 Time Samples Placed In Storage 1706 (2 Hour Window)

1. Tracking # 0390 (last 4 digits, FedEx) Courier: fed ex

IR Gun ID 17960353 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

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: 1 on 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) JAB

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 # 2

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

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) AES

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) AES

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

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

BIS = Broken in shipment

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 6-03-16 @ 1000

Time Samples Removed From Cooler 1830 Time Samples Placed In Storage 1706 (2 Hour Window)

1. Tracking # 5244 (last 4 digits, FedEx) Courier: fed ex

IR Gun ID 12080142 pH Strip Lot HC564992 Chlorine Strip Lot 1211515B

2. Temperature of rep. sample or temp blank when opened: 1.4 *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) JM

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 # 3

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

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) AES

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) AES

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

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

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: 6/2/2016**
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: Reid/HMPL Impoundment GW CCR-Round 2	☐ 1 week		
Site: Reid/HMPL Impoundment	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-53215-17237.1
___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-7	5/31/16	1335	G	Water	5	N	N	x	x	x	x	
MW-8	5/31/16	1455	G	Water	5	N	N	x	x	x	x	Loc: 490 104973
MW-9	5/31/16	1010	G	Water	5	N	N	x	x	x	x	
MW-10	5/31/16	1220	G	Water	5	N	N	x	x	x	x	
DUPE	5/31/16	1025	G	Water	5	N	N	x	x	x	x	
FIELD BLANK	5/31/16	1600	G	Water	5	N	N	x	x	x	x	

Greg Dick

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 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: 6/2/2016 1000	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: 6/3/16 1000

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

7/8/2016

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: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-45099.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 490-104973-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 7/6/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Reid/HMPL Impoundment 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/PreoSep_21 Standard Target List	904.0/PreoSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-7 (490-104973-1)	5/31/16	13:35 Central		Water			X	X	X	2	
MW-8 (490-104973-2)	5/31/16	14:55 Central		Water			X	X	X	2	
MW-9 (490-104973-3)	5/31/16	10:10 Central		Water			X	X	X	2	
MW-10 (490-104973-4)	5/31/16	12:20 Central		Water			X	X	X	2	
DUPE (490-104973-5)	5/31/16	10:25 Central		Water			X	X	X	2	
FIELD BLANK (490-104973-6)	5/31/16	16:00 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)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by:	Date/Time: 6/7/16 0645	Company: TAN	Received by:	Date/Time: 060716 0905	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:

7/8/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-104973-1

Login Number: 104973

List Source: TestAmerica Nashville

List Number: 1

Creator: Stvartak, Anthony Q

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.	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: 490-104973-1

Login Number: 104973
List Number: 4
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 06/08/16 11:42 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.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	13.9
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: Reid/HMPL Impoundment CCR

TestAmerica Job ID: 490-104973-1

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-104973-1	MW-7	96.9
490-104973-2	MW-8	78.3
490-104973-3	MW-9	104
490-104973-4	MW-10	91.2
490-104973-5	DUPE	98.9
490-104973-6	FIELD BLANK	97.7
LCS 160-256206/2-A	Lab Control Sample	98.0
LCSD 160-256206/3-A	Lab Control Sample Dup	91.7
MB 160-256206/1-A	Method Blank	96.0

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-104973-1	MW-7	96.9	85.6
490-104973-2	MW-8	78.3	86.7
490-104973-3	MW-9	104	91.2
490-104973-4	MW-10	91.2	85.2
490-104973-5	DUPE	98.9	87.5
490-104973-6	FIELD BLANK	97.7	93.1
LCS 160-256209/2-A	Lab Control Sample	98.0	89.0
LCSD 160-256209/3-A	Lab Control Sample Dup	91.7	87.5
MB 160-256209/1-A	Method Blank	96.0	86.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-110528-1
TestAmerica Sample Delivery Group: Reid/HMPL Impoundment
Client Project/Site: Reid/HMPL Impoundment GW CCR-Round 3
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
9/27/2016 4:58:48 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-110528-1	MW-7	Water	08/23/16 15:20	08/25/16 09:15
490-110528-2	MW-8	Water	08/23/16 10:50	08/25/16 09:15
490-110528-3	MW-9	Water	08/23/16 12:45	08/25/16 09:15
490-110528-4	MW-10	Water	08/23/16 14:10	08/25/16 09:15
490-110528-5	DUPE	Water	08/23/16 11:15	08/25/16 09:15
490-110528-6	FIELD BLANK	Water	08/23/16 16:45	08/25/16 09:15

Job ID: 490-110528-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-110528-1

Comments
No additional comments.

Receipt
The samples were received on 8/25/2016 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.4º C, 1.9º C and 2.3º C.

HPLC/IC
Method(s) 9056A: The method blank as well as the continuing calibration blanks for analytical batch 490-367638 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 as well as the continuing calibration blanks for analytical batch 490-367762 contained Chloride above the method detection limit (MDL). The following associated sample(s) were not re-extracted and/or re-analyzed because the results were greater than 10X the value found in the method blank and the continuing calibration blanks: MW-8 (490-110528-2), MW-9 (490-110528-3), MW-10 (490-110528-4), DUPE (490-110528-5), (CCB 490-367762/24), (CCB 490-367762/35), (CCB 490-367762/8) and (MB 490-367762/9)

Method(s) 9056, 9056A: The following samples was diluted due to the nature of the sample matrix: MW-8 (490-110528-2), MW-9 (490-110528-3), MW-10 (490-110528-4) and DUPE (490-110528-5). 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 160-267592: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-110528-1), MW-8 (490-110528-2), MW-9 (490-110528-3), MW-10 (490-110528-4) and DUPE (490-110528-5). 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: 160-267592: The following samples were prepared at a reduced aliquot due to sediment. MW-7 (490-110528-1), MW-8 (490-110528-2), MW-9 (490-110528-3), MW-10 (490-110528-4) and DUPE (490-110528-5). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were used instead of a sample duplicate (DUP) to demonstrate batch precision to avoid matrix interference with homogeneity.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-267595: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-8 (490-110528-2) and DUPE (490-110528-5). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep_0: Radium-228 Prep Batch: 160-267595: The following samples were prepared at a reduced aliquot due to sediment. MW-8 (490-110528-2) and DUPE (490-110528-5) A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were used instead of a sample duplicate (DUP) to demonstrate batch precision 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.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
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
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.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-7

Date Collected: 08/23/16 15:20
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.93**	**J B F1**	3.00	0.200	mg/L			09/03/16 02:53	1
Fluoride	**0.232**	**J F1**	1.00	0.0100	mg/L			09/03/16 02:53	1
Sulfate	**15.9**		5.00	0.0300	mg/L			09/03/16 02:53	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		08/29/16 11:20	08/31/16 17:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000745**	**J B**	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 10:58	1
Arsenic	**0.000932**	**J**	0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 10:58	1
Barium	**0.0515**	**J**	0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 10:58	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 10:58	1
Boron	**0.271**	**J**	1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 10:58	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 10:58	1
Calcium	**42.3**		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 10:58	1
Chromium	ND		0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 10:58	1
Cobalt	**0.000402**	**J**	0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 10:58	1
Lead	ND		0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 10:58	1
Molybdenum	**0.0136**		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 10:58	1
Selenium	ND		0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 10:58	1
Thallium	**0.0000390**	**J**	0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 10:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/29/16 08:38	09/01/16 15:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.63**		0.100	0.100	SU			09/27/16 14:04	1
Temperature	**21.7**		0.100	0.100	Degrees C			09/27/16 14:04	1
Total Dissolved Solids	**243**		10.0	7.00	mg/L			08/26/16 14:00	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	**0.342**		0.0915	0.0965	1.00	0.0901	pCi/L	08/31/16 16:51	09/21/16 16:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*08/31/16 16:51*	*09/21/16 16:07*	*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	0.131	U	0.232	0.232	1.00	0.392	pCi/L	08/31/16 16:57	09/15/16 13:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*08/31/16 16:57*	*09/15/16 13:10*	*1*

Client Sample ID: MW-7
Date Collected: 08/23/16 15:20
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.9		40 - 110	08/31/16 16:57	09/15/16 13:10	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	0.473		0.249	0.251	5.00	0.392	pCi/L		09/23/16 06:04	1

Client Sample ID: MW-8

Date Collected: 08/23/16 10:50
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.4	B	15.0	1.00	mg/L			09/03/16 23:04	5
Fluoride	0.428	J	1.00	0.0100	mg/L			09/03/16 03:13	1
Sulfate	1120		500	3.00	mg/L			09/03/16 23:25	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0314	J	0.0500	0.00959	mg/L		08/29/16 11:20	08/31/16 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000194	J B	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 11:00	1
Arsenic	0.000139	J	0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 11:00	1
Barium	0.0156	J	0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 11:00	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 11:00	1
Boron	1.30		1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 11:00	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 11:00	1
Calcium	228		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 11:00	1
Chromium	ND		0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 11:00	1
Cobalt	0.0000400	J	0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 11:00	1
Lead	ND		0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 11:00	1
Molybdenum	0.0157		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 11:00	1
Selenium	ND		0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 11:00	1
Thallium	ND		0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 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		08/29/16 08:38	09/01/16 15:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.56		0.100	0.100	SU			09/27/16 14:04	1
Temperature	21.7		0.100	0.100	Degrees C			09/27/16 14:04	1
Total Dissolved Solids	1960		20.0	14.0	mg/L			08/26/16 14:00	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	0.556		0.180	0.187	1.00	0.186	pCi/L	08/31/16 17:58	09/22/16 11:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*08/31/16 17:58*	*09/22/16 11:59*	*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	0.809		0.512	0.517	1.00	0.778	pCi/L	08/31/16 19:06	09/16/16 18:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*08/31/16 19:06*	*09/16/16 18:15*	*1*

Client Sample ID: MW-8
Date Collected: 08/23/16 10:50
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	08/31/16 19:06	09/16/16 18:15	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	1.36		0.542	0.550	5.00	0.778	pCi/L		09/23/16 06:04	1

Client Sample ID: MW-9

Date Collected: 08/23/16 12:45
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36.6	B	6.00	0.400	mg/L			09/03/16 23:45	2
Fluoride	0.222	J	1.00	0.0100	mg/L			09/03/16 03:33	1
Sulfate	27.7		5.00	0.0300	mg/L			09/03/16 03:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0102	J	0.0500	0.00959	mg/L		08/29/16 11:20	08/31/16 17:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000186	J B	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 11:02	1
Arsenic	0.000323	J	0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 11:02	1
Barium	0.889		0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 11:02	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 11:02	1
Boron	0.333	J	1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 11:02	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 11:02	1
Calcium	71.5		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 11:02	1
Chromium	ND		0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 11:02	1
Cobalt	0.0000600	J	0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 11:02	1
Lead	ND		0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 11:02	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 11:02	1
Selenium	ND		0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 11:02	1
Thallium	ND		0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 11:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/29/16 08:38	09/01/16 15:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.75		0.100	0.100	SU			09/27/16 14:04	1
Temperature	21.7		0.100	0.100	Degrees C			09/27/16 14:04	1
Total Dissolved Solids	403		10.0	7.00	mg/L			08/26/16 14:00	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	1.45		0.166	0.211	1.00	0.0915	pCi/L	08/31/16 16:51	09/21/16 16:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*08/31/16 16:51*	*09/21/16 16:07*	*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	1.46		0.323	0.350	1.00	0.391	pCi/L	08/31/16 16:57	09/15/16 13:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*08/31/16 16:57*	*09/15/16 13:10*	*1*

Client Sample ID: MW-9

Date Collected: 08/23/16 12:45
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-3

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	08/31/16 16:57	09/15/16 13:10	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	2.91		0.363	0.409	5.00	0.391	pCi/L		09/23/16 06:04	1

Client Sample ID: MW-10

Date Collected: 08/23/16 14:10
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28.9	B	6.00	0.400	mg/L			09/04/16 00:05	2
Fluoride	0.415	J	1.00	0.0100	mg/L			09/03/16 03:53	1
Sulfate	144		50.0	0.300	mg/L			09/04/16 00:25	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.219		0.0500	0.00959	mg/L		08/29/16 11:20	08/31/16 17:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000256	J B	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 11:04	1
Arsenic	0.00302	J	0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 11:04	1
Barium	0.0635	J	0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 11:04	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 11:04	1
Boron	0.460	J	1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 11:04	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 11:04	1
Calcium	23.0		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 11:04	1
Chromium	0.000876	J	0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 11:04	1
Cobalt	0.000199	J	0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 11:04	1
Lead	ND		0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 11:04	1
Molybdenum	0.0141		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 11:04	1
Selenium	ND		0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 11:04	1
Thallium	ND		0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 11:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/29/16 08:38	09/01/16 15:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.54		0.100	0.100	SU			09/27/16 14:04	1
Temperature	21.7		0.100	0.100	Degrees C			09/27/16 14:04	1
Total Dissolved Solids	558		10.0	7.00	mg/L			08/26/16 14:00	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	0.183		0.0718	0.0737	1.00	0.0815	pCi/L	08/31/16 16:51	09/21/16 16:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*08/31/16 16:51*	*09/21/16 16:07*	*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	0.531		0.274	0.278	1.00	0.410	pCi/L	08/31/16 16:57	09/15/16 13:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*40 - 110*	*08/31/16 16:57*	*09/15/16 13:10*	*1*

Client Sample ID: MW-10

Date Collected: 08/23/16 14:10
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-4

Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*92.3*		*40 - 110*	*08/31/16 16:57*	*09/15/16 13:10*	*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	**0.715**		0.283	0.288	5.00	0.410	pCi/L		09/23/16 06:04	1

Client Sample ID: DUPE

Date Collected: 08/23/16 11:15
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.1**	**B**	15.0	1.00	mg/L			09/04/16 01:25	5
Fluoride	**0.428**	**J**	1.00	0.0100	mg/L			09/03/16 04:13	1
Sulfate	**1150**		500	3.00	mg/L			09/04/16 01:45	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0354**	**J**	0.0500	0.00959	mg/L		08/29/16 11:20	08/31/16 18:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000157**	**J B**	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 11:06	1
Arsenic	**0.000199**	**J**	0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 11:06	1
Barium	**0.0171**	**J**	0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 11:06	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 11:06	1
Boron	**1.45**		1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 11:06	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 11:06	1
Calcium	**250**		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 11:06	1
Chromium	ND		0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 11:06	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 11:06	1
Lead	**0.0000810**	**J**	0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 11:06	1
Molybdenum	**0.0172**		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 11:06	1
Selenium	**0.000479**	**J**	0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 11:06	1
Thallium	ND		0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 11:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/29/16 08:38	09/01/16 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.72**		0.100	0.100	SU			09/27/16 14:04	1
Temperature	**21.7**		0.100	0.100	Degrees C			09/27/16 14:04	1
Total Dissolved Solids	**1890**		20.0	14.0	mg/L			08/26/16 14:00	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	**0.456**		0.187	0.191	1.00	0.237	pCi/L	08/31/16 17:58	09/22/16 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.6*		*40 - 110*	*08/31/16 17:58*	*09/22/16 12:00*	*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	**1.22**		0.585	0.596	1.00	0.846	pCi/L	08/31/16 19:06	09/16/16 18:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.6*		*40 - 110*	*08/31/16 19:06*	*09/16/16 18:15*	*1*

Client Sample ID: DUPE

Date Collected: 08/23/16 11:15
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-5

Matrix: Water

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*86.4*		*40 - 110*	*08/31/16 19:06*	*09/16/16 18:15*	*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	**1.68**		0.614	0.626	5.00	0.846	pCi/L		09/23/16 06:04	1

Client Sample ID: FIELD BLANK

Date Collected: 08/23/16 16:45
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.414**	**J B**	3.00	0.200	mg/L			09/03/16 04:33	1
Fluoride	ND		1.00	0.0100	mg/L			09/03/16 04:33	1
Sulfate	**0.621**	**J**	5.00	0.0300	mg/L			09/03/16 04:33	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		08/29/16 11:20	08/31/16 18:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000120**	**J B**	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 11:08	1
Arsenic	ND		0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 11:08	1
Barium	ND		0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 11:08	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 11:08	1
Boron	**0.0828**	**J**	1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 11:08	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 11:08	1
Calcium	ND		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 11:08	1
Chromium	ND		0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 11:08	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 11:08	1
Lead	ND		0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 11:08	1
Molybdenum	ND		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 11:08	1
Selenium	ND		0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 11:08	1
Thallium	ND		0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 11:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/29/16 08:38	09/01/16 15:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.34**		0.100	0.100	SU			09/27/16 14:04	1
Temperature	**21.7**		0.100	0.100	Degrees C			09/27/16 14:04	1
Total Dissolved Solids	**10.0**		10.0	7.00	mg/L			08/26/16 14:00	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	0.0421	U	0.0455	0.0457	1.00	0.0733	pCi/L	08/29/16 20:32	09/20/16 08:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*08/29/16 20:32*	*09/20/16 08:39*	*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	0.0424	U	0.194	0.194	1.00	0.343	pCi/L	08/29/16 21:00	09/13/16 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*08/29/16 21:00*	*09/13/16 13:03*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 08/23/16 16:45
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-6

Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*90.1*		*40 - 110*	*08/29/16 21:00*	*09/13/16 13:03*	*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	0.0845	U	0.200	0.200	5.00	0.343	pCi/L		09/23/16 06:04	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-367638/9
Matrix: Water
Analysis Batch: 367638

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3051	J	3.00	0.200	mg/L			09/02/16 20:32	1
Fluoride	ND		1.00	0.0100	mg/L			09/02/16 20:32	1
Sulfate	ND		5.00	0.0300	mg/L			09/02/16 20:32	1

Lab Sample ID: LCS 490-367638/10
Matrix: Water
Analysis Batch: 367638

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	10.02		mg/L		100	80 - 120
Fluoride	1.00	1.022		mg/L		102	80 - 120
Sulfate	10.0	9.754		mg/L		98	80 - 120

Lab Sample ID: LCSD 490-367638/11
Matrix: Water
Analysis Batch: 367638

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	10.08		mg/L		101	80 - 120	1	20
Fluoride	1.00	1.006		mg/L		101	80 - 120	2	20
Sulfate	10.0	9.748		mg/L		97	80 - 120	0	20

Lab Sample ID: MB 490-367762/9
Matrix: Water
Analysis Batch: 367762

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3134	J	3.00	0.200	mg/L			09/03/16 20:04	1
Fluoride	ND		1.00	0.0100	mg/L			09/03/16 20:04	1
Sulfate	ND		5.00	0.0300	mg/L			09/03/16 20:04	1

Lab Sample ID: LCS 490-367762/10
Matrix: Water
Analysis Batch: 367762

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	10.51		mg/L		105	80 - 120
Fluoride	1.00	1.095		mg/L		109	80 - 120
Sulfate	10.0	10.36		mg/L		104	80 - 120

Lab Sample ID: LCSD 490-367762/11
Matrix: Water
Analysis Batch: 367762

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	10.42		mg/L		104	80 - 120	1	20
Fluoride	1.00	1.059		mg/L		106	80 - 120	3	20
Sulfate	10.0	10.19		mg/L		102	80 - 120	2	20

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

Lab Sample ID: 490-111118-I-1 MS
Matrix: Water
Analysis Batch: 367762

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
Fluoride	0.207	J	0.200	0.3945	J	mg/L		94	80 - 120

Lab Sample ID: 490-111118-I-1 MSD
Matrix: Water
Analysis Batch: 367762

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
Fluoride	0.207	J	0.200	0.3881	J	mg/L		90	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-186335/1-A
Matrix: Water
Analysis Batch: 186654

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 186335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		08/29/16 11:20	08/31/16 17:10	1

Lab Sample ID: LCS 180-186335/2-A
Matrix: Water
Analysis Batch: 186654

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 186335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9182		mg/L		92	80 - 120

Lab Sample ID: LCSD 180-186335/3-A
Matrix: Water
Analysis Batch: 186654

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 186335

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	0.9932		mg/L		99	80 - 120	8	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-186334/1-A
Matrix: Water
Analysis Batch: 186766

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 186334

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001070	J	0.00200	0.0000213	mg/L		08/29/16 11:19	09/01/16 10:47	1
Arsenic	ND		0.00500	0.000118	mg/L		08/29/16 11:19	09/01/16 10:47	1
Barium	ND		0.200	0.000270	mg/L		08/29/16 11:19	09/01/16 10:47	1
Beryllium	ND		0.00200	0.000102	mg/L		08/29/16 11:19	09/01/16 10:47	1
Boron	ND		1.00	0.00339	mg/L		08/29/16 11:19	09/01/16 10:47	1
Cadmium	ND		0.00100	0.000152	mg/L		08/29/16 11:19	09/01/16 10:47	1
Calcium	ND		1.00	0.0412	mg/L		08/29/16 11:19	09/01/16 10:47	1
Chromium	ND		0.00300	0.000339	mg/L		08/29/16 11:19	09/01/16 10:47	1
Cobalt	ND		0.00500	0.0000218	mg/L		08/29/16 11:19	09/01/16 10:47	1
Lead	ND		0.00500	0.0000675	mg/L		08/29/16 11:19	09/01/16 10:47	1

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

Lab Sample ID: MB 180-186334/1-A
Matrix: Water
Analysis Batch: 186766

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 186334

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0100	0.000873	mg/L		08/29/16 11:19	09/01/16 10:47	1
Selenium	ND		0.0100	0.000348	mg/L		08/29/16 11:19	09/01/16 10:47	1
Thallium	ND		0.00100	0.0000360	mg/L		08/29/16 11:19	09/01/16 10:47	1

Lab Sample ID: LCS 180-186334/2-A
Matrix: Water
Analysis Batch: 186766

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 186334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5197		mg/L		104	80 - 120
Arsenic	0.0400	0.04212		mg/L		105	80 - 120
Barium	2.00	1.929		mg/L		96	80 - 120
Beryllium	0.0500	0.04931		mg/L		99	80 - 120
Boron	1.00	0.9782	J	mg/L		98	80 - 120
Cadmium	0.0500	0.05429		mg/L		109	80 - 120
Calcium	50.0	52.49		mg/L		105	80 - 120
Chromium	0.200	0.2065		mg/L		103	80 - 120
Cobalt	0.500	0.5249		mg/L		105	80 - 120
Lead	0.0200	0.02058		mg/L		103	80 - 120
Molybdenum	1.00	1.100		mg/L		110	80 - 120
Selenium	0.0100	0.009979	J	mg/L		100	80 - 120
Thallium	0.0500	0.04882		mg/L		98	80 - 120

Lab Sample ID: LCSD 180-186334/3-A
Matrix: Water
Analysis Batch: 186766

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 186334

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5306		mg/L		106	80 - 120	2	20
Arsenic	0.0400	0.04311		mg/L		108	80 - 120	2	20
Barium	2.00	1.938		mg/L		97	80 - 120	0	20
Beryllium	0.0500	0.05022		mg/L		100	80 - 120	2	20
Boron	1.00	0.9943	J	mg/L		99	80 - 120	2	20
Cadmium	0.0500	0.05499		mg/L		110	80 - 120	1	20
Calcium	50.0	53.17		mg/L		106	80 - 120	1	20
Chromium	0.200	0.2086		mg/L		104	80 - 120	1	20
Cobalt	0.500	0.5293		mg/L		106	80 - 120	1	20
Lead	0.0200	0.02069		mg/L		103	80 - 120	1	20
Molybdenum	1.00	1.122		mg/L		112	80 - 120	2	20
Selenium	0.0100	0.008237	J	mg/L		82	80 - 120	19	20
Thallium	0.0500	0.04904		mg/L		98	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-366151/1-A
Matrix: Water
Analysis Batch: 367010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 366151

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		08/29/16 08:38	08/31/16 13:18	1

Lab Sample ID: LCS 490-366151/2-A
Matrix: Water
Analysis Batch: 367010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 366151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9195		ug/L		92	80 - 120

Lab Sample ID: LCSD 490-366151/3-A
Matrix: Water
Analysis Batch: 367010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 366151

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.00	0.8538		ug/L		85	80 - 120	7	20

Lab Sample ID: 490-110137-G-7-C MS
Matrix: Water
Analysis Batch: 367010

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 366151

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1	1.00	ND	F1	ug/L		0	75 - 125

Method: 9040C - pH

Lab Sample ID: LCS 490-373538/1
Matrix: Water
Analysis Batch: 373538

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	6.960		SU		99	98 - 103

Lab Sample ID: 490-110528-1 DU
Matrix: Water
Analysis Batch: 373538

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.63		7.630		SU		0	20
Temperature	21.7		21.70		Degrees C		0	20

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

Lab Sample ID: MB 490-363624/1
Matrix: Water
Analysis Batch: 363624

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			08/26/16 14:00	1

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

Lab Sample ID: LCS 490-363624/2
Matrix: Water
Analysis Batch: 363624

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	106.0		mg/L		106	90 - 110		

Lab Sample ID: LCSD 490-363624/25
Matrix: Water
Analysis Batch: 363624

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	95.00		mg/L		95	90 - 110	11	20

Lab Sample ID: 490-110507-D-1 DU
Matrix: Water
Analysis Batch: 363624

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	8740			7810		mg/L				11	20

Lab Sample ID: 490-110559-A-3 DU
Matrix: Water
Analysis Batch: 363624

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	466			459.0		mg/L				2	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-267152/1-A
Matrix: Water
Analysis Batch: 270711

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267152

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03250	U	0.0521	0.0522	1.00	0.0895	pCi/L	08/29/16 20:32	09/20/16 08:38	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*08/29/16 20:32*	*09/20/16 08:38*	*1*

Lab Sample ID: LCS 160-267152/2-A
Matrix: Water
Analysis Batch: 270711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267152

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.58		1.32	1.00	0.0982	pCi/L	122	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.3*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 490-110125-G-5-B MS
Matrix: Water
Analysis Batch: 270700

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 267152

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.147		11.1	12.54		1.23	1.00	0.0679	pCi/L	111	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*91.5*		*40 - 110*

Lab Sample ID: 490-110125-G-5-C MSD
Matrix: Water
Analysis Batch: 270700

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 267152

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	0.147		11.2	12.99		1.27	1.00	0.0746	pCi/L	115	75 - 138	0.18	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*90.3*		*40 - 110*

Lab Sample ID: MB 160-267414/1-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267414

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08176	U	0.0581	0.0585	1.00	0.0836	pCi/L	08/30/16 20:01	09/21/16 12:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*40 - 110*	*08/30/16 20:01*	*09/21/16 12:42*	*1*

Lab Sample ID: LCS 160-267414/2-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267414

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	13.86		1.35	1.00	0.0763	pCi/L	124	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.3*		*40 - 110*

Lab Sample ID: LCSD 160-267414/3-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267414

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	14.72		1.44	1.00	0.102	pCi/L	132	68 - 137	0.31	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-267414/3-A
Matrix: Water
Analysis Batch: 270869

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267414

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	86.9		40 - 110

Lab Sample ID: MB 160-267592/1-A
Matrix: Water
Analysis Batch: 271151

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267592

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03389	U	0.0327	0.0329	1.00	0.0875	pCi/L	08/31/16 17:58	09/22/16 11:55	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	08/31/16 17:58	09/22/16 11:55	1

Lab Sample ID: LCS 160-267592/2-A
Matrix: Water
Analysis Batch: 271151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267592

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	15.06		1.46	1.00	0.0795	pCi/L	135	68 - 137		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	91.2		40 - 110

Lab Sample ID: LCSD 160-267592/3-A
Matrix: Water
Analysis Batch: 271206

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267592

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.2	12.84		1.25	1.00	0.0722	pCi/L	115	68 - 137	0.82	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	104		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-267155/1-A
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267155

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.01325	U	0.249	0.249	1.00	0.445	pCi/L	08/29/16 21:00	09/13/16 13:02	1

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

Lab Sample ID: MB 160-267155/1-A
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267155

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110	08/29/16 21:00	09/13/16 13:02	1
Y Carrier	90.5		40 - 110	08/29/16 21:00	09/13/16 13:02	1

Lab Sample ID: LCS 160-267155/2-A
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267155

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.6	15.41		1.67	1.00	0.439	pCi/L	106	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	84.3		40 - 110
Y Carrier	88.6		40 - 110

Lab Sample ID: 490-110125-G-5-E MS
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 267155

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.512		14.6	14.08		1.52	1.00	0.348	pCi/L	93	45 - 150		

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	91.5		40 - 110
Y Carrier	92.0		40 - 110

Lab Sample ID: 490-110125-G-5-F MSD
Matrix: Water
Analysis Batch: 269331

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 267155

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	0.512		14.6	13.72		1.50	1.00	0.492	pCi/L	91	45 - 150	0.12	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	90.3		40 - 110
Y Carrier	92.0		40 - 110

Lab Sample ID: MB 160-267416/1-A
Matrix: Water
Analysis Batch: 269972

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267416

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2360	U	0.232	0.233	1.00	0.375	pCi/L	08/30/16 20:14	09/15/16 13:11	1

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

Lab Sample ID: MB 160-267416/1-A
Matrix: Water
Analysis Batch: 269972

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267416

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110	08/30/16 20:14	09/15/16 13:11	1
Y Carrier	91.6		40 - 110	08/30/16 20:14	09/15/16 13:11	1

Lab Sample ID: LCS 160-267416/2-A
Matrix: Water
Analysis Batch: 269972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267416

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.6	14.82		1.58	1.00	0.341	pCi/L	102	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110
Y Carrier	90.8		40 - 110

Lab Sample ID: LCSD 160-267416/3-A
Matrix: Water
Analysis Batch: 269972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267416

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.6	16.38		1.75	1.00	0.391	pCi/L	113	56 - 140	0.47	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	86.9		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: MB 160-267595/1-A
Matrix: Water
Analysis Batch: 270279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267595

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3917	U	0.325	0.327	1.00	0.517	pCi/L	08/31/16 19:06	09/16/16 18:14	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110	08/31/16 19:06	09/16/16 18:14	1
Y Carrier	83.7		40 - 110	08/31/16 19:06	09/16/16 18:14	1

Lab Sample ID: LCS 160-267595/2-A
Matrix: Water
Analysis Batch: 270279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267595

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.6	15.58		1.68	1.00	0.380	pCi/L	107	56 - 140		

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

Lab Sample ID: LCS 160-267595/2-A
Matrix: Water
Analysis Batch: 270279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267595

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	91.2		40 - 110
Y Carrier	87.9		40 - 110

Lab Sample ID: LCSD 160-267595/3-A
Matrix: Water
Analysis Batch: 270279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267595

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.6	13.17		1.45	1.00	0.351	pCi/L	90	56 - 140	0.77	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	79.3		40 - 110

HPLC/IC

Analysis Batch: 367638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	9056A	
490-110528-2	MW-8	Total/NA	Water	9056A	
490-110528-3	MW-9	Total/NA	Water	9056A	
490-110528-4	MW-10	Total/NA	Water	9056A	
490-110528-5	DUPE	Total/NA	Water	9056A	
490-110528-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-367638/9	Method Blank	Total/NA	Water	9056A	
LCS 490-367638/10	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-367638/11	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 367762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-2	MW-8	Total/NA	Water	9056A	
490-110528-2	MW-8	Total/NA	Water	9056A	
490-110528-3	MW-9	Total/NA	Water	9056A	
490-110528-4	MW-10	Total/NA	Water	9056A	
490-110528-4	MW-10	Total/NA	Water	9056A	
490-110528-5	DUPE	Total/NA	Water	9056A	
490-110528-5	DUPE	Total/NA	Water	9056A	
MB 490-367762/9	Method Blank	Total/NA	Water	9056A	
LCS 490-367762/10	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-367762/11	Lab Control Sample Dup	Total/NA	Water	9056A	
490-111118-I-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-111118-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 186334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total Recoverable	Water	3005A	
490-110528-2	MW-8	Total Recoverable	Water	3005A	
490-110528-3	MW-9	Total Recoverable	Water	3005A	
490-110528-4	MW-10	Total Recoverable	Water	3005A	
490-110528-5	DUPE	Total Recoverable	Water	3005A	
490-110528-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-186334/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-186334/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-186334/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 186335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total Recoverable	Water	3005A	
490-110528-2	MW-8	Total Recoverable	Water	3005A	
490-110528-3	MW-9	Total Recoverable	Water	3005A	
490-110528-4	MW-10	Total Recoverable	Water	3005A	
490-110528-5	DUPE	Total Recoverable	Water	3005A	
490-110528-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-186335/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-186335/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-186335/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 186654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total Recoverable	Water	6010C	186335
490-110528-2	MW-8	Total Recoverable	Water	6010C	186335
490-110528-3	MW-9	Total Recoverable	Water	6010C	186335
490-110528-4	MW-10	Total Recoverable	Water	6010C	186335
490-110528-5	DUPE	Total Recoverable	Water	6010C	186335
490-110528-6	FIELD BLANK	Total Recoverable	Water	6010C	186335
MB 180-186335/1-A	Method Blank	Total Recoverable	Water	6010C	186335
LCS 180-186335/2-A	Lab Control Sample	Total Recoverable	Water	6010C	186335
LCSD 180-186335/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	186335

Analysis Batch: 186766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total Recoverable	Water	6020A	186334
490-110528-2	MW-8	Total Recoverable	Water	6020A	186334
490-110528-3	MW-9	Total Recoverable	Water	6020A	186334
490-110528-4	MW-10	Total Recoverable	Water	6020A	186334
490-110528-5	DUPE	Total Recoverable	Water	6020A	186334
490-110528-6	FIELD BLANK	Total Recoverable	Water	6020A	186334
MB 180-186334/1-A	Method Blank	Total Recoverable	Water	6020A	186334
LCS 180-186334/2-A	Lab Control Sample	Total Recoverable	Water	6020A	186334
LCSD 180-186334/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	186334

Prep Batch: 366151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	7470A	
490-110528-2	MW-8	Total/NA	Water	7470A	
490-110528-3	MW-9	Total/NA	Water	7470A	
490-110528-4	MW-10	Total/NA	Water	7470A	
490-110528-5	DUPE	Total/NA	Water	7470A	
490-110528-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-366151/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-366151/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-366151/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-110137-G-7-C MS	Matrix Spike	Total/NA	Water	7470A	

Analysis Batch: 367010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-366151/1-A	Method Blank	Total/NA	Water	7470A	366151
LCS 490-366151/2-A	Lab Control Sample	Total/NA	Water	7470A	366151
LCSD 490-366151/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	366151
490-110137-G-7-C MS	Matrix Spike	Total/NA	Water	7470A	366151

Analysis Batch: 367553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	7470A	366151
490-110528-2	MW-8	Total/NA	Water	7470A	366151
490-110528-3	MW-9	Total/NA	Water	7470A	366151
490-110528-4	MW-10	Total/NA	Water	7470A	366151
490-110528-5	DUPE	Total/NA	Water	7470A	366151
490-110528-6	FIELD BLANK	Total/NA	Water	7470A	366151

General Chemistry

Analysis Batch: 363624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	SM 2540C	
490-110528-2	MW-8	Total/NA	Water	SM 2540C	
490-110528-3	MW-9	Total/NA	Water	SM 2540C	
490-110528-4	MW-10	Total/NA	Water	SM 2540C	
490-110528-5	DUPE	Total/NA	Water	SM 2540C	
490-110528-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-363624/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-363624/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-363624/25	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-110507-D-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-110559-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 373538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	9040C	
490-110528-2	MW-8	Total/NA	Water	9040C	
490-110528-3	MW-9	Total/NA	Water	9040C	
490-110528-4	MW-10	Total/NA	Water	9040C	
490-110528-5	DUPE	Total/NA	Water	9040C	
490-110528-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-373538/1	Lab Control Sample	Total/NA	Water	9040C	
490-110528-1 DU	MW-7	Total/NA	Water	9040C	

Rad

Prep Batch: 267152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-267152/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-267152/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
490-110125-G-5-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
490-110125-G-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 267155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-267155/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-267155/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
490-110125-G-5-E MS	Matrix Spike	Total/NA	Water	PrecSep_0	
490-110125-G-5-F MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 267414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	PrecSep-21	
490-110528-3	MW-9	Total/NA	Water	PrecSep-21	
490-110528-4	MW-10	Total/NA	Water	PrecSep-21	
MB 160-267414/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-267414/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-267414/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 267416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-1	MW-7	Total/NA	Water	PrecSep_0	
490-110528-3	MW-9	Total/NA	Water	PrecSep_0	
490-110528-4	MW-10	Total/NA	Water	PrecSep_0	
MB 160-267416/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-267416/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-267416/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 267592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-2	MW-8	Total/NA	Water	PrecSep-21	
490-110528-5	DUPE	Total/NA	Water	PrecSep-21	
MB 160-267592/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-267592/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-267592/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 267595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-110528-2	MW-8	Total/NA	Water	PrecSep_0	
490-110528-5	DUPE	Total/NA	Water	PrecSep_0	
MB 160-267595/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-267595/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-267595/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW-7

Date Collected: 08/23/16 15:20
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-1

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			367638	09/03/16 02:53	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186335	08/29/16 11:20	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 17:35	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186334	08/29/16 11:19	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186766	09/01/16 10:58	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366151	08/29/16 08:38	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/01/16 15:25	BLG	TAL NSH
Total/NA	Analysis	9040C		1			373538	09/27/16 14:04	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363624	08/26/16 14:00	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			1000.66 mL	1.0 g	267414	08/31/16 16:51	MCJ	TAL SL
Total/NA	Analysis	903.0		1			270875	09/21/16 16:07	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.66 mL	1.0 g	267416	08/31/16 16:57	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269955	09/15/16 13:10	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271225	09/23/16 06:04	ALS	TAL SL

Client Sample ID: MW-8

Date Collected: 08/23/16 10:50
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-2

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			367638	09/03/16 03:13	JHS	TAL NSH
Total/NA	Analysis	9056A		5			367762	09/03/16 23:04	JHS	TAL NSH
Total/NA	Analysis	9056A		100			367762	09/03/16 23:25	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186335	08/29/16 11:20	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 17:45	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186334	08/29/16 11:19	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186766	09/01/16 11:00	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366151	08/29/16 08:38	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/01/16 15:28	BLG	TAL NSH
Total/NA	Analysis	9040C		1			373538	09/27/16 14:04	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	363624	08/26/16 14:00	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			500.31 mL	1.0 g	267592	08/31/16 17:58	MCJ	TAL SL
Total/NA	Analysis	903.0		1			271155	09/22/16 11:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			500.31 mL	1.0 g	267595	08/31/16 19:06	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270279	09/16/16 18:15	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271225	09/23/16 06:04	ALS	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW-9

Date Collected: 08/23/16 12:45
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-3

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			367638	09/03/16 03:33	JHS	TAL NSH
Total/NA	Analysis	9056A		2			367762	09/03/16 23:45	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186335	08/29/16 11:20	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 17:51	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186334	08/29/16 11:19	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186766	09/01/16 11:02	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366151	08/29/16 08:38	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/01/16 15:31	BLG	TAL NSH
Total/NA	Analysis	9040C		1			373538	09/27/16 14:04	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363624	08/26/16 14:00	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.75 mL	1.0 g	267414	08/31/16 16:51	MCJ	TAL SL
Total/NA	Analysis	903.0		1			270875	09/21/16 16:07	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.75 mL	1.0 g	267416	08/31/16 16:57	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269955	09/15/16 13:10	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271225	09/23/16 06:04	ALS	TAL SL

Client Sample ID: MW-10

Date Collected: 08/23/16 14:10
Date Received: 08/25/16 09:15

Lab Sample ID: 490-110528-4

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			367638	09/03/16 03:53	JHS	TAL NSH
Total/NA	Analysis	9056A		2			367762	09/04/16 00:05	JHS	TAL NSH
Total/NA	Analysis	9056A		10			367762	09/04/16 00:25	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186335	08/29/16 11:20	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 17:56	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186334	08/29/16 11:19	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186766	09/01/16 11:04	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366151	08/29/16 08:38	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/01/16 15:33	BLG	TAL NSH
Total/NA	Analysis	9040C		1			373538	09/27/16 14:04	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363624	08/26/16 14:00	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.66 mL	1.0 g	267414	08/31/16 16:51	MCJ	TAL SL
Total/NA	Analysis	903.0		1			270875	09/21/16 16:07	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.66 mL	1.0 g	267416	08/31/16 16:57	MCJ	TAL SL
Total/NA	Analysis	904.0		1			269955	09/15/16 13:10	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271225	09/23/16 06:04	ALS	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-110528-5

Date Collected: 08/23/16 11:15
Matrix: Water
Date Received: 08/25/16 09:15

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			367638	09/03/16 04:13	JHS	TAL NSH
Total/NA	Analysis	9056A		5			367762	09/04/16 01:25	JHS	TAL NSH
Total/NA	Analysis	9056A		100			367762	09/04/16 01:45	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186335	08/29/16 11:20	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 18:01	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186334	08/29/16 11:19	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186766	09/01/16 11:06	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366151	08/29/16 08:38	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/01/16 15:36	BLG	TAL NSH
Total/NA	Analysis	9040C		1			373538	09/27/16 14:04	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	363624	08/26/16 14:00	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			499.01 mL	1.0 g	267592	08/31/16 17:58	MCJ	TAL SL
Total/NA	Analysis	903.0		1			271155	09/22/16 12:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			499.01 mL	1.0 g	267595	08/31/16 19:06	MCJ	TAL SL
Total/NA	Analysis	904.0		1			270279	09/16/16 18:15	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271225	09/23/16 06:04	ALS	TAL SL

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-110528-6

Date Collected: 08/23/16 16:45
Matrix: Water
Date Received: 08/25/16 09:15

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			367638	09/03/16 04:33	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	186335	08/29/16 11:20	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			186654	08/31/16 18:06	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	186334	08/29/16 11:19	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			186766	09/01/16 11:08	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	366151	08/29/16 08:38	LCS	TAL NSH
Total/NA	Analysis	7470A		1			367553	09/01/16 15:44	BLG	TAL NSH
Total/NA	Analysis	9040C		1			373538	09/27/16 14:04	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	363624	08/26/16 14:00	EF1	TAL NSH
Total/NA	Prep	PrecSep-21			999.31 mL	1.0 g	267152	08/29/16 20:32	MCJ	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	270711	09/20/16 08:39	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.31 mL	1.0 g	267155	08/29/16 21:00	MCJ	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	269331	09/13/16 13:03	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			271225	09/23/16 06:04	ALS	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: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-16 *
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-16
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-16-10	07-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-110528 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 8/25/2016 @ 0915

Time Samples Removed From Cooler 1600 Time Samples Placed In Storage 1631 (2 Hour Window)

1. Tracking # 4314 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID_17960358___ pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.3 *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: 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) KA

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) MDM

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) MDM

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) MDM

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

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
110528

COOLER RECEIPT FORM

Cooler Received/Opened On 8/25/2016 @ 0915

Time Samples Removed From Cooler 1800 Time Samples Placed In Storage 1831 (2 Hour Window)

1. Tracking # 4299 (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: 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) DW

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) MDM

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) MDM

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) MDM

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

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

490-110528

Cooler Received/Opened On 8/25/2016 @ 0915

Time Samples Removed From Cooler 1800 Time Samples Placed In Storage 1831 (2 Hour Window)

1. Tracking # 5446 (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: 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: 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) On

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) MDM

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) MDM

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) MDM

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

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

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.

9/27/2016

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 8/24/2016**	COC No: 490-55703-18050.1
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: Loc: 490
(xxx) xxx-xxxx FAX	☑ 2 weeks			Lab Sampling: **110528**
Project Name: Reid/HMPL Impoundment GW CCR-Round 3	☐ 1 week			
Site: Reid/HMPL Impoundment	☐ 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	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-7	8/23/16	1520	G	Water	6	N	N	x	x	x	x	-1
MW-8	8/23/16	1050	G	Water	6	N	N	x	x	x	x	2
MW-9	8/23/16	1245	G	Water	6	N	N	x	x	x	x	3
MW-10	8/23/16	1410	G	Water	6	N	N	x	x	x	x	4
DUPE	8/23/16	1115	G	Water	6	N	N	x	x	x	x	5
FIELD BLANK	8/23/16	1645	G	Water	6	N	N	x	x	x	x	6

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: 8/24/16 1110	Received by:	Company: TAN	Date/Time: 8-25-16 @ 0915	1.9/0.4/2.3
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)

Appendix IV to Part 257
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

Jay Dick 8/24/2016 1110



TestAmerica
THE LEADER IN ENVIR

490-110528 Waybill

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON CR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 26AUG16
ACTWGT: 10.0 LB MAN
CAD: 534003/CAFE2912

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: S490-57033

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 6493 8982 6480

Uncorrected temp 3.9 °C
Thermometer ID 8

CF -0.1 Initials JN

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

490-110528 Chain of Custody

TestAmerica LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	No: 47828.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Job #: 490-110528-1
Address: 13715 Rider Trail North,	Due Date Requested: 9/7/2016		
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Reid/HMPL Impoundment GW CCR-Round 3	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-7 (490-110528-1)	8/23/16	15:20 Central		Water			X	X	X	2	
MW-8 (490-110528-2)	8/23/16	10:50 Central		Water			X	X	X	2	
MW-9 (490-110528-3)	8/23/16	12:45 Central		Water			X	X	X	2	
MW-10 (490-110528-4)	8/23/16	14:10 Central		Water			X	X	X	2	
DUPE (490-110528-5)	8/23/16	11:15 Central		Water			X	X	X	2	
FIELD BLANK (490-110528-6)	8/23/16	16:45 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:	Date/Time: 8/26/16 1700	Company: TAN	Received by:	Date/Time: 8-27-16 0845	Company: TASR
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:

9/27/2016

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

Chain of Custody Record

490-110528 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	lo: 7827.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Job #: 490-110528-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 9/7/2016		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Reid/HMPL Impoundment GW CCR-Round 3	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-7 (490-110528-1)	8/23/16	15:20 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-110528-2)	8/23/16	10:50 Central		Water			X	X	1	Metals - run once, upload together.
MW-9 (490-110528-3)	8/23/16	12:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-10 (490-110528-4)	8/23/16	14:10 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-110528-5)	8/23/16	11:15 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-110528-6)	8/23/16	16:45 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: 8/26/16 C 1700	Company: TAL	Received by:	Date/Time: 8-27-16 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: 490-110528-1
SDG Number: Reid/HMPL Impoundment

Login Number: 110528
List Number: 1
Creator: McBride, Mike

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: 490-110528-1
SDG Number: Reid/HMPL Impoundment

Login Number: 110528
List Number: 3
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 08/27/16 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.	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: 490-110528-1
SDG Number: Reid/HMPL Impoundment

Login Number: 110528
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/27/16 11:00 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: Reid/HMPL Impoundment GW CCR-Round 3

TestAmerica Job ID: 490-110528-1
SDG: Reid/HMPL Impoundment

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-110125-G-5-B MS	Matrix Spike	91.5
490-110125-G-5-C MSD	Matrix Spike Duplicate	90.3
490-110528-1	MW-7	90.6
490-110528-2	MW-8	86.3
490-110528-3	MW-9	99.4
490-110528-4	MW-10	90.0
490-110528-5	DUPE	84.6
490-110528-6	FIELD BLANK	94.6
LCS 160-267152/2-A	Lab Control Sample	84.3
LCS 160-267414/2-A	Lab Control Sample	94.3
LCS 160-267592/2-A	Lab Control Sample	91.2
LCSD 160-267414/3-A	Lab Control Sample Dup	86.9
LCSD 160-267592/3-A	Lab Control Sample Dup	104
MB 160-267152/1-A	Method Blank	86.3
MB 160-267414/1-A	Method Blank	86.3
MB 160-267592/1-A	Method Blank	76.1

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-110125-G-5-E MS	Matrix Spike	91.5	92.0
490-110125-G-5-F MSD	Matrix Spike Duplicate	90.3	92.0
490-110528-1	MW-7	90.6	87.9
490-110528-2	MW-8	86.3	90.1
490-110528-3	MW-9	99.4	88.2
490-110528-4	MW-10	90.0	92.3
490-110528-5	DUPE	84.6	86.4
490-110528-6	FIELD BLANK	94.6	90.1
LCS 160-267155/2-A	Lab Control Sample	84.3	88.6
LCS 160-267416/2-A	Lab Control Sample	94.3	90.8
LCS 160-267595/2-A	Lab Control Sample	91.2	87.9
LCSD 160-267416/3-A	Lab Control Sample Dup	86.9	88.2
LCSD 160-267595/3-A	Lab Control Sample Dup	104	79.3
MB 160-267155/1-A	Method Blank	86.3	90.5
MB 160-267416/1-A	Method Blank	86.3	91.6
MB 160-267595/1-A	Method Blank	76.1	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

TestAmerica

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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: 490-114437-1
Client Project/Site: Reid/HMPL Impoundment CCR - Round 4
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
11/22/2016 11:56:35 AM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-114437-1	MW-7	Water	10/18/16 15:05	10/20/16 09:20
490-114437-2	MW-8	Water	10/18/16 10:15	10/20/16 09:20
490-114437-3	MW-9	Water	10/18/16 11:45	10/20/16 09:20
490-114437-4	MW-10	Water	10/18/16 13:35	10/20/16 09:20
490-114437-5	DUPE	Water	10/18/16 12:10	10/20/16 09:20
490-114437-6	FIELD BLANK	Water	10/18/16 16:45	10/20/16 09:20

Job ID: 490-114437-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-114437-1

Comments
No additional comments.

Receipt
The samples were received on 10/20/2016 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.5º C, 1.6º C and 3.2º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-381374 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 490-381374 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 490-382287 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 490-382287 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 following samples was diluted due to the nature of the sample matrix: MW-8 (490-114437-2), MW-9 (490-114437-3), MW-10 (490-114437-4) and DUPE (490-114437-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-382287 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-21: Ra226 prep batch:275804
2mL of Y carrier was added to all samples instead of 1mL: MW-7 (490-114437-1), MW-8 (490-114437-2), MW-9 (490-114437-3), MW-10 (490-114437-4), DUPE (490-114437-5) and FIELD BLANK (490-114437-6)

Method(s) PrecSep_0: Radium-228 Prep Batch 160-275812:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-114437-1), MW-8 (490-114437-2), MW-9 (490-114437-3), MW-10 (490-114437-4), DUPE (490-114437-5) and FIELD BLANK (490-114437-6). 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 160-275804:
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-114437-1), MW-8 (490-114437-2), MW-9 (490-114437-3), MW-10 (490-114437-4), DUPE (490-114437-5) and FIELD BLANK (490-114437-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep_0: Ra226 prep batch:275812
2mL of Y carrier was added to all samples instead of 1mL:
MW-7 (490-114437-1), MW-8 (490-114437-2), MW-9 (490-114437-3), MW-10 (490-114437-4), DUPE (490-114437-5) and FIELD BLANK (490-114437-6)

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

Job ID: 490-114437-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-7

Date Collected: 10/18/16 15:05
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.26	B F1	3.00	0.200	mg/L			10/25/16 17:48	1
Fluoride	0.295	J F1	1.00	0.0100	mg/L			10/25/16 17:48	1
Sulfate	18.8		5.00	0.0300	mg/L			10/25/16 17:48	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		10/24/16 07:46	10/25/16 14:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000594	J	0.00200	0.0000213	mg/L		10/24/16 07:42	11/01/16 15:28	1
Arsenic	0.000881	J	0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:28	1
Barium	0.0626	J	0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:28	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:28	1
Boron	0.250	J	1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:28	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:28	1
Calcium	47.6		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:28	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:28	1
Cobalt	0.000410	J	0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:28	1
Lead	0.000256	J	0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:28	1
Molybdenum	0.0118		0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:28	1
Selenium	0.000660	J	0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:28	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/21/16 08:31	10/21/16 17:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.29		0.100	0.100	SU			10/21/16 14:36	1
Temperature	21.1		0.100	0.100	Degrees C			10/21/16 14:36	1
Total Dissolved Solids	250		10.0	7.00	mg/L			10/20/16 18:19	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	0.286	U	0.221	0.222	1.00	0.324	pCi/L	10/24/16 12:31	11/19/16 17:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.9*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:23*	*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	-0.0800	U	0.278	0.278	1.00	0.506	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.9*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Client Sample ID: MW-7
Lab Sample ID: 490-114437-1
Date Collected: 10/18/16 15:05
Matrix: Water
Date Received: 10/20/16 09:20

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.5		40 - 110	10/24/16 13:37	11/18/16 14:36	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	0.206	U	0.355	0.356	5.00	0.506	pCi/L		11/22/16 11:03	1

Client Sample ID: MW-8

Date Collected: 10/18/16 10:15
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	66.4	J B	300	20.0	mg/L			10/28/16 04:59	100
Fluoride	0.541	J	1.00	0.0100	mg/L			10/25/16 19:00	1
Sulfate	1080		500	3.00	mg/L			10/28/16 04:59	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0324	J	0.0500	0.00959	mg/L		10/24/16 07:46	10/25/16 14:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000295	J	0.00200	0.0000213	mg/L		10/24/16 07:42	11/01/16 15:30	1
Arsenic	0.000184	J	0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:30	1
Barium	0.0157	J	0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:30	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:30	1
Boron	1.00		1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:30	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:30	1
Calcium	194		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:30	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:30	1
Cobalt	0.0000550	J	0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:30	1
Lead	0.000183	J	0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:30	1
Molybdenum	0.0147		0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:30	1
Selenium	0.000995	J	0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:30	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/21/16 08:31	10/21/16 17:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.35		0.100	0.100	SU			10/21/16 14:36	1
Temperature	21.1		0.100	0.100	Degrees C			10/21/16 14:36	1
Total Dissolved Solids	2030		20.0	14.0	mg/L			10/20/16 18:19	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	0.462		0.225	0.229	1.00	0.259	pCi/L	10/24/16 12:31	11/19/16 17:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:24*	*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	0.898		0.289	0.300	1.00	0.372	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Client Sample ID: MW-8
Date Collected: 10/18/16 10:15
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-2
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.9		40 - 110	10/24/16 13:37	11/18/16 14:36	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	1.36		0.366	0.377	5.00	0.372	pCi/L		11/22/16 11:03	1

Client Sample ID: MW-9

Date Collected: 10/18/16 11:45
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32.6**	**B**	6.00	0.400	mg/L			10/28/16 05:35	2
Fluoride	**0.256**	**J**	1.00	0.0100	mg/L			10/25/16 19:36	1
Sulfate	**39.6**		5.00	0.0300	mg/L			10/25/16 19:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0119**	**J**	0.0500	0.00959	mg/L		10/24/16 07:46	10/25/16 14:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000228**	**J**	0.00200	0.0000213	mg/L		10/24/16 07:42	11/01/16 15:32	1
Arsenic	**0.000330**	**J**	0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:32	1
Barium	**0.635**		0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:32	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:32	1
Boron	**0.257**	**J**	1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:32	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:32	1
Calcium	**72.3**		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:32	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:32	1
Cobalt	**0.0000570**	**J**	0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:32	1
Lead	**0.000150**	**J**	0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:32	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:32	1
Selenium	ND		0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:32	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/25/16 09:15	10/26/16 07:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.79**		0.100	0.100	SU			10/21/16 14:36	1
Temperature	**21.1**		0.100	0.100	Degrees C			10/21/16 14:36	1
Total Dissolved Solids	**409**		10.0	7.00	mg/L			10/20/16 18:19	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	**0.938**		0.303	0.315	1.00	0.296	pCi/L	10/24/16 12:31	11/19/16 17:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:24*	*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	0.445	U	0.395	0.397	1.00	0.641	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.3*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Client Sample ID: MW-9
Lab Sample ID: 490-114437-3
Date Collected: 10/18/16 11:45
Matrix: Water
Date Received: 10/20/16 09:20

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	10/24/16 13:37	11/18/16 14:36	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	1.38		0.498	0.507	5.00	0.641	pCi/L		11/22/16 11:03	1

Client Sample ID: MW-10

Date Collected: 10/18/16 13:35
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.6	B	6.00	0.400	mg/L			10/28/16 06:11	2
Fluoride	0.478	J	1.00	0.0100	mg/L			10/25/16 20:11	1
Sulfate	152		50.0	0.300	mg/L			10/28/16 06:47	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0736		0.0500	0.00959	mg/L		10/24/16 07:46	10/25/16 14:32	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		10/24/16 07:42	11/01/16 15:34	1
Arsenic	0.00271	J	0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:34	1
Barium	0.108	J	0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:34	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:34	1
Boron	0.489	J	1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:34	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:34	1
Calcium	36.0		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:34	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:34	1
Cobalt	0.000257	J	0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:34	1
Lead	0.0000880	J	0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:34	1
Molybdenum	0.00995	J	0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:34	1
Selenium	0.000378	J	0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:34	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/25/16 09:15	10/26/16 08:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.26		0.100	0.100	SU			10/21/16 14:36	1
Temperature	21.1		0.100	0.100	Degrees C			10/21/16 14:36	1
Total Dissolved Solids	602		10.0	7.00	mg/L			10/20/16 18:19	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	0.262	U	0.208	0.209	1.00	0.304	pCi/L	10/24/16 12:31	11/19/16 17:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.9*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:24*	*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	0.136	U	0.263	0.263	1.00	0.448	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.9*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Client Sample ID: MW-10
Lab Sample ID: 490-114437-4
Date Collected: 10/18/16 13:35
Matrix: Water
Date Received: 10/20/16 09:20

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.4		40 - 110	10/24/16 13:37	11/18/16 14:36	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	0.398	U	0.335	0.336	5.00	0.448	pCi/L		11/22/16 11:03	1

Client Sample ID: DUPE

Date Collected: 10/18/16 12:10
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32.0**	**B**	6.00	0.400	mg/L			10/28/16 07:22	2
Fluoride	**0.297**	**J**	1.00	0.0100	mg/L			10/25/16 20:47	1
Sulfate	**38.1**		5.00	0.0300	mg/L			10/25/16 20:47	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		10/24/16 07:46	10/25/16 14:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000187**	**J**	0.00200	0.0000213	mg/L		10/24/16 07:42	11/01/16 15:37	1
Arsenic	**0.000178**	**J**	0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:37	1
Barium	ND		0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:37	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:37	1
Boron	**0.0262**	**J**	1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:37	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:37	1
Calcium	ND		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:37	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:37	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:37	1
Lead	**0.000145**	**J**	0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:37	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:37	1
Selenium	ND		0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:37	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/25/16 09:15	10/26/16 08:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.25**		0.100	0.100	SU			10/21/16 14:36	1
Temperature	**21.2**		0.100	0.100	Degrees C			10/21/16 14:36	1
Total Dissolved Solids	**395**		10.0	7.00	mg/L			10/20/16 18:19	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	**0.989**		0.302	0.315	1.00	0.265	pCi/L	10/24/16 12:31	11/19/16 17:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:24*	*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	**0.650**		0.277	0.283	1.00	0.392	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Client Sample ID: DUPE
Date Collected: 10/18/16 12:10
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-5
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	10/24/16 13:37	11/18/16 14:36	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	1.64		0.410	0.424	5.00	0.392	pCi/L		11/22/16 11:03	1

Client Sample ID: FIELD BLANK

Date Collected: 10/18/16 16:45
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.283**	**J B**	3.00	0.200	mg/L			10/25/16 21:59	1
Fluoride	ND		1.00	0.0100	mg/L			10/25/16 21:59	1
Sulfate	ND		5.00	0.0300	mg/L			10/25/16 21:59	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		10/24/16 07:46	10/25/16 14:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000125**	**J**	0.00200	0.0000213	mg/L		10/24/16 07:42	11/01/16 15:39	1
Arsenic	ND		0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:39	1
Barium	ND		0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:39	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:39	1
Boron	**0.0168**	**J**	1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:39	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:39	1
Calcium	ND		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:39	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:39	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:39	1
Lead	ND		0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:39	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:39	1
Selenium	ND		0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:39	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/25/16 09:15	10/26/16 08:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.86**		0.100	0.100	SU			10/21/16 14:36	1
Temperature	**20.7**		0.100	0.100	Degrees C			10/21/16 14:36	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/20/16 18:19	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	0.117	U	0.167	0.168	1.00	0.285	pCi/L	10/24/16 12:31	11/19/16 17:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.6*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:24*	*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	0.249	U	0.249	0.250	1.00	0.404	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.6*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Client Sample ID: FIELD BLANK
Lab Sample ID: 490-114437-6
Date Collected: 10/18/16 16:45
Matrix: Water
Date Received: 10/20/16 09:20

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*86.0*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*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	0.366	U	0.300	0.301	5.00	0.404	pCi/L		11/22/16 11:03	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-381374/6
Matrix: Water
Analysis Batch: 381374

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3470	J	3.00	0.200	mg/L			10/25/16 16:55	1
Fluoride	ND		1.00	0.0100	mg/L			10/25/16 16:55	1
Sulfate	ND		5.00	0.0300	mg/L			10/25/16 16:55	1

Lab Sample ID: LCS 490-381374/7
Matrix: Water
Analysis Batch: 381374

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	9.979		mg/L		100	80 - 120
Fluoride	1.00	1.059		mg/L		106	80 - 120
Sulfate	10.0	10.26		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-381374/8
Matrix: Water
Analysis Batch: 381374

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	9.968		mg/L		100	80 - 120	0	20
Fluoride	1.00	1.048		mg/L		105	80 - 120	1	20
Sulfate	10.0	10.21		mg/L		102	80 - 120	1	20

Lab Sample ID: 490-114437-1 MS
Matrix: Water
Analysis Batch: 381374

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.26	B F1	2.00	4.512	F1	mg/L		62	80 - 120
Fluoride	0.295	J F1	0.200	0.4257	J F1	mg/L		65	80 - 120
Sulfate	18.8		2.00	17.39	4	mg/L		-70	80 - 120

Lab Sample ID: 490-114437-C-1 MSD
Matrix: Water
Analysis Batch: 381374

Client Sample ID: 490-114437-C-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	3.34	B F1	2.00	4.565	F1	mg/L		61	80 - 120	1	20
Fluoride	0.289	J F1	0.200	0.4388	J F1	mg/L		75	80 - 120	3	20
Sulfate	19.0		2.00	17.39	4	mg/L		-81	80 - 120	0	20

Lab Sample ID: MB 490-382287/3
Matrix: Water
Analysis Batch: 382287

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3446	J	3.00	0.200	mg/L			10/28/16 00:13	1
Fluoride	ND		1.00	0.0100	mg/L			10/28/16 00:13	1
Sulfate	ND		5.00	0.0300	mg/L			10/28/16 00:13	1

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

Lab Sample ID: LCS 490-382287/4
Matrix: Water
Analysis Batch: 382287

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	9.916		mg/L		99	80 - 120
Fluoride	1.00	1.006		mg/L		101	80 - 120
Sulfate	10.0	9.793		mg/L		98	80 - 120

Lab Sample ID: LCSD 490-382287/5
Matrix: Water
Analysis Batch: 382287

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	9.887		mg/L		99	80 - 120	0	20
Fluoride	1.00	1.004		mg/L		100	80 - 120	0	20
Sulfate	10.0	9.753		mg/L		98	80 - 120	0	20

Lab Sample ID: 490-114878-B-11 MS
Matrix: Water
Analysis Batch: 382287

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	137	E B	2.00	112.3	E 4	mg/L		-1244	80 - 120
Fluoride	0.243	J F1	0.200	0.3167	J F1	mg/L		37	80 - 120
Sulfate	33.7		2.00	28.99	4	mg/L		-235	80 - 120

Lab Sample ID: 490-114878-B-11 MSD
Matrix: Water
Analysis Batch: 382287

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	137	E B	2.00	109.6	E 4	mg/L		-1379	80 - 120	2	20
Fluoride	0.243	J F1	0.200	0.3307	J F1	mg/L		44	80 - 120	4	20
Sulfate	33.7		2.00	28.44	4	mg/L		-263	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-192126/1-A
Matrix: Water
Analysis Batch: 192333

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 192126

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/24/16 07:46	10/25/16 13:57	1

Lab Sample ID: LCS 180-192126/2-A
Matrix: Water
Analysis Batch: 192333

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 192126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.006		mg/L		101	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 180-192126/3-A
Matrix: Water
Analysis Batch: 192333

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 192126

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.011		mg/L		101	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-192124/1-A
Matrix: Water
Analysis Batch: 193009

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 192124

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00007600	J	0.00200	0.0000213	mg/L		10/24/16 07:42	11/01/16 15:22	1
Arsenic	ND		0.00500	0.000118	mg/L		10/24/16 07:42	11/01/16 15:22	1
Barium	ND		0.200	0.000270	mg/L		10/24/16 07:42	11/01/16 15:22	1
Beryllium	ND		0.00200	0.000102	mg/L		10/24/16 07:42	11/01/16 15:22	1
Boron	ND		1.00	0.00339	mg/L		10/24/16 07:42	11/01/16 15:22	1
Cadmium	ND		0.00100	0.000152	mg/L		10/24/16 07:42	11/01/16 15:22	1
Calcium	ND		1.00	0.0412	mg/L		10/24/16 07:42	11/01/16 15:22	1
Chromium	ND		0.00300	0.000339	mg/L		10/24/16 07:42	11/01/16 15:22	1
Cobalt	ND		0.00500	0.0000218	mg/L		10/24/16 07:42	11/01/16 15:22	1
Lead	0.0001770	J	0.00500	0.0000675	mg/L		10/24/16 07:42	11/01/16 15:22	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/24/16 07:42	11/01/16 15:22	1
Selenium	0.0008870	J	0.0100	0.000348	mg/L		10/24/16 07:42	11/01/16 15:22	1
Thallium	ND		0.00100	0.0000360	mg/L		10/24/16 07:42	11/01/16 15:22	1

Lab Sample ID: LCS 180-192124/2-A
Matrix: Water
Analysis Batch: 193009

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 192124

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5113		mg/L		102	80 - 120
Arsenic	0.0400	0.03902		mg/L		98	80 - 120
Barium	2.00	2.108		mg/L		105	80 - 120
Cadmium	0.0500	0.05429		mg/L		109	80 - 120
Calcium	50.0	53.78		mg/L		108	80 - 120
Chromium	0.200	0.2080		mg/L		104	80 - 120
Cobalt	0.500	0.5287		mg/L		106	80 - 120
Lead	0.0200	0.02052		mg/L		103	80 - 120
Molybdenum	1.00	1.088		mg/L		109	80 - 120
Selenium	0.0100	0.01091		mg/L		109	80 - 120
Thallium	0.0500	0.04872		mg/L		97	80 - 120

Lab Sample ID: LCS 180-192124/2-A
Matrix: Water
Analysis Batch: 193102

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 192124

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	0.0500	0.04908		mg/L		98	80 - 120
Boron	1.00	0.9570	J	mg/L		96	80 - 120

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

Lab Sample ID: LCSD 180-192124/3-A
Matrix: Water
Analysis Batch: 193009

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 192124

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5192		mg/L		104	80 - 120	2	20
Arsenic	0.0400	0.03947		mg/L		99	80 - 120	1	20
Barium	2.00	2.155		mg/L		108	80 - 120	2	20
Beryllium	0.0500	0.04186		mg/L		84	80 - 120	7	20
Boron	1.00	0.8316	J	mg/L		83	80 - 120	6	20
Cadmium	0.0500	0.05389		mg/L		108	80 - 120	1	20
Calcium	50.0	53.98		mg/L		108	80 - 120	0	20
Chromium	0.200	0.2126		mg/L		106	80 - 120	2	20
Cobalt	0.500	0.5449		mg/L		109	80 - 120	3	20
Lead	0.0200	0.02081		mg/L		104	80 - 120	1	20
Molybdenum	1.00	1.102		mg/L		110	80 - 120	1	20
Selenium	0.0100	0.01095		mg/L		110	80 - 120	0	20
Thallium	0.0500	0.05021		mg/L		100	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-380048/1-A
Matrix: Water
Analysis Batch: 380514

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 380048

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/21/16 08:31	10/21/16 16:49	1

Lab Sample ID: LCS 490-380048/2-A
Matrix: Water
Analysis Batch: 380514

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 380048

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9823		ug/L		98	80 - 120

Lab Sample ID: 490-114145-D-1-E MS
Matrix: Water
Analysis Batch: 380514

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 380048

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.9382		ug/L		94	75 - 125

Lab Sample ID: 490-114145-D-1-F MSD
Matrix: Water
Analysis Batch: 380514

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 380048

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.8793		ug/L		88	75 - 125	6	20

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

Lab Sample ID: MB 490-380824/1-A
Matrix: Water
Analysis Batch: 381453

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 380824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		10/25/16 09:15	10/26/16 07:43	1

Lab Sample ID: LCS 490-380824/2-A
Matrix: Water
Analysis Batch: 381453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 380824

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	1.130		ug/L		113	80 - 120		

Lab Sample ID: LCSD 490-380824/3-A
Matrix: Water
Analysis Batch: 381453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 380824

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	1.002		ug/L		100	80 - 120	12	20

Lab Sample ID: 490-114437-3 MS
Matrix: Water
Analysis Batch: 381453

Client Sample ID: MW-9
Prep Type: Total/NA
Prep Batch: 380824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		1.00	0.9938		ug/L		99	75 - 125		

Lab Sample ID: 490-114437-3 MSD
Matrix: Water
Analysis Batch: 381453

Client Sample ID: MW-9
Prep Type: Total/NA
Prep Batch: 380824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9605		ug/L		96	75 - 125	3	20

Method: 9040C - pH

Lab Sample ID: LCS 490-380238/1
Matrix: Water
Analysis Batch: 380238

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: 490-114476-A-1 DU
Matrix: Water
Analysis Batch: 380238

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.07			6.100		SU				0.5	20
Temperature	20.8			20.80		Degrees C				0	20

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

Lab Sample ID: MB 490-379879/1
Matrix: Water
Analysis Batch: 379879

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			10/20/16 18:19	1

Lab Sample ID: LCS 490-379879/2
Matrix: Water
Analysis Batch: 379879

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: 490-114298-B-1 DU
Matrix: Water
Analysis Batch: 379879

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	1270			1264		mg/L				0.6	20

Lab Sample ID: 490-114413-E-2 DU
Matrix: Water
Analysis Batch: 379879

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	139			142.0		mg/L				2	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-275804/1-A
Matrix: Water
Analysis Batch: 280042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 275804

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.009914	U	0.176	0.176	1.00	0.346	pCi/L	10/24/16 12:31	11/19/16 17:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*10/24/16 12:31*	*11/19/16 17:11*	*1*

Lab Sample ID: LCS 160-275804/2-A
Matrix: Water
Analysis Batch: 280042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 275804

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.1	15.08		1.78	1.00	0.340	pCi/L	136	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*75.8*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-275804/3-A
Matrix: Water
Analysis Batch: 280042

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 275804

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.1	14.79		1.75	1.00	0.332	pCi/L	133	68 - 137	0.08	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*74.6*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-275812/1-A
Matrix: Water
Analysis Batch: 280010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 275812

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2152	U	0.255	0.256	1.00	0.421	pCi/L	10/24/16 13:37	11/18/16 14:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*
Y Carrier	*88.2*		*40 - 110*	*10/24/16 13:37*	*11/18/16 14:36*	*1*

Lab Sample ID: LCS 160-275812/2-A
Matrix: Water
Analysis Batch: 280010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 275812

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			14.3	16.69		1.82	1.00	0.453	pCi/L	117	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*75.8*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Lab Sample ID: LCSD 160-275812/3-A
Matrix: Water
Analysis Batch: 280010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 275812

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			14.3	18.80		2.02	1.00	0.458	pCi/L	132	56 - 140	0.55	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*74.6*		*40 - 110*
Y Carrier	*85.6*		*40 - 110*

HPLC/IC

Analysis Batch: 381374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	9056A	
490-114437-2	MW-8	Total/NA	Water	9056A	
490-114437-3	MW-9	Total/NA	Water	9056A	
490-114437-4	MW-10	Total/NA	Water	9056A	
490-114437-5	DUPE	Total/NA	Water	9056A	
490-114437-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-381374/6	Method Blank	Total/NA	Water	9056A	
LCS 490-381374/7	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-381374/8	Lab Control Sample Dup	Total/NA	Water	9056A	
490-114437-1 MS	MW-7	Total/NA	Water	9056A	
490-114437-C-1 MSD	490-114437-C-1 MSD	Total/NA	Water	9056A	

Analysis Batch: 382287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-2	MW-8	Total/NA	Water	9056A	
490-114437-3	MW-9	Total/NA	Water	9056A	
490-114437-4	MW-10	Total/NA	Water	9056A	
490-114437-4	MW-10	Total/NA	Water	9056A	
490-114437-5	DUPE	Total/NA	Water	9056A	
MB 490-382287/3	Method Blank	Total/NA	Water	9056A	
LCS 490-382287/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-382287/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-114878-B-11 MS	Matrix Spike	Total/NA	Water	9056A	
490-114878-B-11 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 192124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total Recoverable	Water	3005A	
490-114437-2	MW-8	Total Recoverable	Water	3005A	
490-114437-3	MW-9	Total Recoverable	Water	3005A	
490-114437-4	MW-10	Total Recoverable	Water	3005A	
490-114437-5	DUPE	Total Recoverable	Water	3005A	
490-114437-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-192124/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-192124/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-192124/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 192126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total Recoverable	Water	3005A	
490-114437-2	MW-8	Total Recoverable	Water	3005A	
490-114437-3	MW-9	Total Recoverable	Water	3005A	
490-114437-4	MW-10	Total Recoverable	Water	3005A	
490-114437-5	DUPE	Total Recoverable	Water	3005A	
490-114437-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-192126/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-192126/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-192126/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 192333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total Recoverable	Water	6010C	192126
490-114437-2	MW-8	Total Recoverable	Water	6010C	192126
490-114437-3	MW-9	Total Recoverable	Water	6010C	192126
490-114437-4	MW-10	Total Recoverable	Water	6010C	192126
490-114437-5	DUPE	Total Recoverable	Water	6010C	192126
490-114437-6	FIELD BLANK	Total Recoverable	Water	6010C	192126
MB 180-192126/1-A	Method Blank	Total Recoverable	Water	6010C	192126
LCS 180-192126/2-A	Lab Control Sample	Total Recoverable	Water	6010C	192126
LCSD 180-192126/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	192126

Analysis Batch: 193009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total Recoverable	Water	6020A	192124
490-114437-2	MW-8	Total Recoverable	Water	6020A	192124
490-114437-3	MW-9	Total Recoverable	Water	6020A	192124
490-114437-4	MW-10	Total Recoverable	Water	6020A	192124
490-114437-5	DUPE	Total Recoverable	Water	6020A	192124
490-114437-6	FIELD BLANK	Total Recoverable	Water	6020A	192124
MB 180-192124/1-A	Method Blank	Total Recoverable	Water	6020A	192124
LCS 180-192124/2-A	Lab Control Sample	Total Recoverable	Water	6020A	192124
LCSD 180-192124/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	192124

Analysis Batch: 193102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-192124/2-A	Lab Control Sample	Total Recoverable	Water	6020A	192124

Prep Batch: 380048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	7470A	
490-114437-2	MW-8	Total/NA	Water	7470A	
MB 490-380048/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-380048/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-114145-D-1-E MS	Matrix Spike	Total/NA	Water	7470A	
490-114145-D-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 380514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	7470A	380048
490-114437-2	MW-8	Total/NA	Water	7470A	380048
MB 490-380048/1-A	Method Blank	Total/NA	Water	7470A	380048
LCS 490-380048/2-A	Lab Control Sample	Total/NA	Water	7470A	380048
490-114145-D-1-E MS	Matrix Spike	Total/NA	Water	7470A	380048
490-114145-D-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	380048

Prep Batch: 380824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-3	MW-9	Total/NA	Water	7470A	
490-114437-4	MW-10	Total/NA	Water	7470A	
490-114437-5	DUPE	Total/NA	Water	7470A	
490-114437-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-380824/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 380824 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-380824/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-380824/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-114437-3 MS	MW-9	Total/NA	Water	7470A	
490-114437-3 MSD	MW-9	Total/NA	Water	7470A	

Analysis Batch: 381453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-3	MW-9	Total/NA	Water	7470A	380824
490-114437-4	MW-10	Total/NA	Water	7470A	380824
490-114437-5	DUPE	Total/NA	Water	7470A	380824
490-114437-6	FIELD BLANK	Total/NA	Water	7470A	380824
MB 490-380824/1-A	Method Blank	Total/NA	Water	7470A	380824
LCS 490-380824/2-A	Lab Control Sample	Total/NA	Water	7470A	380824
LCSD 490-380824/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	380824
490-114437-3 MS	MW-9	Total/NA	Water	7470A	380824
490-114437-3 MSD	MW-9	Total/NA	Water	7470A	380824

General Chemistry

Analysis Batch: 379879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	SM 2540C	
490-114437-2	MW-8	Total/NA	Water	SM 2540C	
490-114437-3	MW-9	Total/NA	Water	SM 2540C	
490-114437-4	MW-10	Total/NA	Water	SM 2540C	
490-114437-5	DUPE	Total/NA	Water	SM 2540C	
490-114437-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-379879/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-379879/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-114298-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-114413-E-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 380238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	9040C	
490-114437-2	MW-8	Total/NA	Water	9040C	
490-114437-3	MW-9	Total/NA	Water	9040C	
490-114437-4	MW-10	Total/NA	Water	9040C	
490-114437-5	DUPE	Total/NA	Water	9040C	
490-114437-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-380238/1	Lab Control Sample	Total/NA	Water	9040C	
490-114476-A-1 DU	Duplicate	Total/NA	Water	9040C	

Rad

Prep Batch: 275804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	PrecSep-21	
490-114437-2	MW-8	Total/NA	Water	PrecSep-21	
490-114437-3	MW-9	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 275804 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-4	MW-10	Total/NA	Water	PrecSep-21	
490-114437-5	DUPE	Total/NA	Water	PrecSep-21	
490-114437-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-275804/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-275804/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-275804/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 275812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-114437-1	MW-7	Total/NA	Water	PrecSep_0	
490-114437-2	MW-8	Total/NA	Water	PrecSep_0	
490-114437-3	MW-9	Total/NA	Water	PrecSep_0	
490-114437-4	MW-10	Total/NA	Water	PrecSep_0	
490-114437-5	DUPE	Total/NA	Water	PrecSep_0	
490-114437-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-275812/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-275812/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-275812/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Client Sample ID: MW-7

Date Collected: 10/18/16 15:05
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-1
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			381374	10/25/16 17:48	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	192126	10/24/16 07:46	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			192333	10/25/16 14:11	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	192124	10/24/16 07:42	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			193009	11/01/16 15:28	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	380048	10/21/16 08:31	LCS	TAL NSH
Total/NA	Analysis	7470A		1			380514	10/21/16 17:28	LCS	TAL NSH
Total/NA	Analysis	9040C		1			380238	10/21/16 14:36	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	379879	10/20/16 18:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.95 mL	1.0 g	275804	10/24/16 12:31	AS	TAL SL
Total/NA	Analysis	903.0		1			280039	11/19/16 17:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.95 mL	1.0 g	275812	10/24/16 13:37	AS	TAL SL
Total/NA	Analysis	904.0		1			280010	11/18/16 14:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			280605	11/22/16 11:03	CAH	TAL SL

Client Sample ID: MW-8

Date Collected: 10/18/16 10:15
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-2
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			381374	10/25/16 19:00	NC	TAL NSH
Total/NA	Analysis	9056A		100			382287	10/28/16 04:59	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	192126	10/24/16 07:46	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			192333	10/25/16 14:22	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	192124	10/24/16 07:42	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			193009	11/01/16 15:30	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	380048	10/21/16 08:31	LCS	TAL NSH
Total/NA	Analysis	7470A		1			380514	10/21/16 17:37	LCS	TAL NSH
Total/NA	Analysis	9040C		1			380238	10/21/16 14:36	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	379879	10/20/16 18:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.13 mL	1.0 g	275804	10/24/16 12:31	AS	TAL SL
Total/NA	Analysis	903.0		1			280039	11/19/16 17:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.13 mL	1.0 g	275812	10/24/16 13:37	AS	TAL SL
Total/NA	Analysis	904.0		1			280010	11/18/16 14:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			280605	11/22/16 11:03	CAH	TAL SL

Client Sample ID: MW-9

Date Collected: 10/18/16 11:45
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-3
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			381374	10/25/16 19:36	NC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Client Sample ID: MW-9

Date Collected: 10/18/16 11:45
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-3

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		2			382287	10/28/16 05:35	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	192126	10/24/16 07:46	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			192333	10/25/16 14:27	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	192124	10/24/16 07:42	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			193009	11/01/16 15:32	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	380824	10/25/16 09:15	LCS	TAL NSH
Total/NA	Analysis	7470A		1			381453	10/26/16 07:53	LCS	TAL NSH
Total/NA	Analysis	9040C		1			380238	10/21/16 14:36	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	379879	10/20/16 18:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.89 mL	1.0 g	275804	10/24/16 12:31	AS	TAL SL
Total/NA	Analysis	903.0		1			280039	11/19/16 17:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.89 mL	1.0 g	275812	10/24/16 13:37	AS	TAL SL
Total/NA	Analysis	904.0		1			280010	11/18/16 14:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			280605	11/22/16 11:03	CAH	TAL SL

Client Sample ID: MW-10

Date Collected: 10/18/16 13:35
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-4

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			381374	10/25/16 20:11	NC	TAL NSH
Total/NA	Analysis	9056A		2			382287	10/28/16 06:11	NC	TAL NSH
Total/NA	Analysis	9056A		10			382287	10/28/16 06:47	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	192126	10/24/16 07:46	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			192333	10/25/16 14:32	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	192124	10/24/16 07:42	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			193009	11/01/16 15:34	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	380824	10/25/16 09:15	LCS	TAL NSH
Total/NA	Analysis	7470A		1			381453	10/26/16 08:09	LCS	TAL NSH
Total/NA	Analysis	9040C		1			380238	10/21/16 14:36	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	379879	10/20/16 18:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.67 mL	1.0 g	275804	10/24/16 12:31	AS	TAL SL
Total/NA	Analysis	903.0		1			280039	11/19/16 17:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.67 mL	1.0 g	275812	10/24/16 13:37	AS	TAL SL
Total/NA	Analysis	904.0		1			280010	11/18/16 14:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			280605	11/22/16 11:03	CAH	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Client Sample ID: DUPE

Date Collected: 10/18/16 12:10
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-5

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			381374	10/25/16 20:47	NC	TAL NSH
Total/NA	Analysis	9056A		2			382287	10/28/16 07:22	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	192126	10/24/16 07:46	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			192333	10/25/16 14:47	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	192124	10/24/16 07:42	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			193009	11/01/16 15:37	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	380824	10/25/16 09:15	LCS	TAL NSH
Total/NA	Analysis	7470A		1			381453	10/26/16 08:13	LCS	TAL NSH
Total/NA	Analysis	9040C		1			380238	10/21/16 14:36	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	379879	10/20/16 18:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.02 mL	1.0 g	275804	10/24/16 12:31	AS	TAL SL
Total/NA	Analysis	903.0		1			280039	11/19/16 17:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.02 mL	1.0 g	275812	10/24/16 13:37	AS	TAL SL
Total/NA	Analysis	904.0		1			280010	11/18/16 14:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			280605	11/22/16 11:03	CAH	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 10/18/16 16:45
Date Received: 10/20/16 09:20

Lab Sample ID: 490-114437-6

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			381374	10/25/16 21:59	NC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	192126	10/24/16 07:46	ANA	TAL PIT
Total Recoverable	Analysis	6010C		1			192333	10/25/16 14:53	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	192124	10/24/16 07:42	ANA	TAL PIT
Total Recoverable	Analysis	6020A		1			193009	11/01/16 15:39	CNF	TAL PIT
Total/NA	Prep	7470A			30.0 mL	30.0 mL	380824	10/25/16 09:15	LCS	TAL NSH
Total/NA	Analysis	7470A		1			381453	10/26/16 08:16	LCS	TAL NSH
Total/NA	Analysis	9040C		1			380238	10/21/16 14:36	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	379879	10/20/16 18:19	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.29 mL	1.0 g	275804	10/24/16 12:31	AS	TAL SL
Total/NA	Analysis	903.0		1			280039	11/19/16 17:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.29 mL	1.0 g	275812	10/24/16 13:37	AS	TAL SL
Total/NA	Analysis	904.0		1			280010	11/18/16 14:36	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			280605	11/22/16 11:03	CAH	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: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-17
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-16
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-17
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16 *
Iowa	State Program	7	373	12-01-16 *
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-14-0016	01-09-17
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-114437 Chain of Custody

Cooler Received/Opened On 10/20/2016 @ 0920

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

1. Tracking # 5515 (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: 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: 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) A

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
114437

COOLER RECEIPT FORM

Cooler Received/Opened On 10/20/2016 @ 0920

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

1. Tracking # 5397 (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: 3.2 *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) (H)

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Loc: 490
114437

COOLER RECEIPT FORM

Cooler Received/Opened On 10/20/2016 @ 0920

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

1. Tracking # 6456 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 97310166 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 1.6 *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: 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) SA

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

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Loc: 490
114437

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

11/22/2016

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: 10/19/2016**
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: Reid/HMPL Impoundment GW CCR-Round 4	☐ 1 week		
Site: Reid/HMPL Impoundment	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-58042-18748.1
____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-7	10/18/16	1505	G	Water	6	N	N	x	x	x	x	
MW-8	10/18/16	1015	G	Water	6	N	N	x	x	x	x	
MW-9	10/18/16	1145	G	Water	6	N	N	x	x	x	x	
MW-10	10/18/16	1335	G	Water	6	N	N	x	x	x	x	
DUPE	10/18/16	1210	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	10/18/16	1645	G	Water	6	N	N	x	x	x	x	

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: 1430 10/19/2016	Received by:	Company: TAN	Date/Time: 10-20-16 0920
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Temp. 0.5, 3.2, 1.6

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

Loc: 490
114437

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

Greg Dick, BREC
10/19/2016
1430

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

Chain of Custody Record



490-114437 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	COC No: 490-49698.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State: Kentucky	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-114437-1
Address: 13715 Rider Trail North,	Due Date Requested: 11/1/2016		
City: Earth City	TAT Requested (days):		
State, Zip: MO, 63045			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:		
Email:	WO #:		
Project Name: Reid/HMPL Impoundment CCR - Round 4	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)	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-7 (490-114437-1)	10/18/16	15:05 Central		Water			X	X	X	2	
MW-8 (490-114437-2)	10/18/16	10:15 Central		Water			X	X	X	2	
MW-9 (490-114437-3)	10/18/16	11:45 Central		Water			X	X	X	2	
MW-10 (490-114437-4)	10/18/16	13:35 Central		Water			X	X	X	2	
DUPE (490-114437-5)	10/18/16	12:10 Central		Water			X	X	X	2	
FIELD BLANK (490-114437-6)	10/18/16	16:45 Central		Water			X	X	X	2	

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]	10/20/16 @1715	TAL	[signature]	10.21.16/0945	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

490-114437 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	COC No: 490-49697.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com | Kentucky	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-114437-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 11/1/2016		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Reid/HMPL Impoundment CCR - Round 4	Project #: 49010431		
Site: Big Rivers CCR	SSOW#:		

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)	6010C/3006A (MOD) Lithium	6020A/3006A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-7 (490-114437-1)	10/18/16	15:05 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-114437-2)	10/18/16	10:15 Central		Water			X	X	1	Metals - run once, upload together.
MW-9 (490-114437-3)	10/18/16	11:45 Central		Water			X	X	1	Metals - run once, upload together.
MW-10 (490-114437-4)	10/18/16	13:35 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-114437-5)	10/18/16	12:10 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-114437-6)	10/18/16	16:45 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: 10/20/16 1715	Company: TAN	Received by:	Date/Time: 10/21/16	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:

11/22/2016

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-114437-1

Login Number: 114437
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	0.5C, 3.2C, 1.6C
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").	N/A	
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: 490-114437-1

Login Number: 114437
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 10/21/16 04:32 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: 490-114437-1

Login Number: 114437
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 10/22/16 05:34 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	19.0
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: Reid/HMPL Impoundment CCR - Round 4

TestAmerica Job ID: 490-114437-1

Method: 903.0 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-114437-1	MW-7	78.9
490-114437-2	MW-8	85.8
490-114437-3	MW-9	90.3
490-114437-4	MW-10	78.9
490-114437-5	DUPE	86.9
490-114437-6	FIELD BLANK	84.6
LCS 160-275804/2-A	Lab Control Sample	75.8
LCSD 160-275804/3-A	Lab Control Sample Dup	74.6
MB 160-275804/1-A	Method Blank	82.3

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-114437-1	MW-7	78.9	87.5
490-114437-2	MW-8	85.8	87.9
490-114437-3	MW-9	90.3	87.1
490-114437-4	MW-10	78.9	86.4
490-114437-5	DUPE	86.9	87.1
490-114437-6	FIELD BLANK	84.6	86.0
LCS 160-275812/2-A	Lab Control Sample	75.8	86.4
LCSD 160-275812/3-A	Lab Control Sample Dup	74.6	85.6
MB 160-275812/1-A	Method Blank	82.3	88.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-121213-1
Client Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5
Sampling Event: Big Rivers CCR/SemiAnnual GW

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

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
3/6/2017 12:17:17 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-121213-1	MW-7	Water	01/31/17 11:55	02/02/17 14:26
490-121213-2	MW-8	Water	01/31/17 13:55	02/02/17 14:26
490-121213-3	MW-9	Water	01/31/17 15:15	02/02/17 14:26
490-121213-4	DUPE	Water	01/31/17 14:30	02/02/17 14:26
490-121213-5	FIELD BLANK	Water	01/31/17 17:45	02/02/17 14:26

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Job ID: 490-121213-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-121213-1

Comments
No additional comments.

Receipt
The samples were received on 2/2/2017 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.3º C, 0.6º C and 1.6º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-408219 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 490-408219 contained Chloride, 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: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-408219 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 490-408220 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 490-408220 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: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate was not analyzed with batch 408220. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits. (LCS 490-408220/4) and (LCSD 490-408220/5)

Method(s) 9056A: The following sample was diluted due to the nature of the sample matrix: MW-8 (490-121213-2) and DUPE (490-121213-4). 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.

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-7

Date Collected: 01/31/17 11:55
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.02**	**B**	3.00	0.200	mg/L			02/16/17 01:55	1
Fluoride	**0.319**	**J B**	1.00	0.0100	mg/L			02/16/17 01:55	1
Sulfate	**23.6**	**B**	5.00	0.0300	mg/L			02/16/17 01:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.00994**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 10:55	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 11:25	1
Arsenic	**0.000996**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:25	1
Barium	**0.0677**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:25	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:25	1
Boron	**0.330**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:25	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:25	1
Calcium	**41.5**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:25	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:25	1
Cobalt	**0.000239**	**J**	0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:25	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:25	1
Molybdenum	**0.0127**		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:25	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:25	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/03/17 08:04	02/07/17 10:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.46**		0.100	0.100	SU			02/03/17 16:24	1
Temperature	**19.8**		0.100	0.100	Degrees C			02/03/17 16:24	1
Total Dissolved Solids	**253**		10.0	7.00	mg/L			02/07/17 15:53	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	**0.365**		0.191	0.194	1.00	0.244	pCi/L	02/08/17 10:54	03/02/17 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.6*		*40 - 110*	*02/08/17 10:54*	*03/02/17 11:46*	*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	**0.556**		0.309	0.313	1.00	0.468	pCi/L	02/08/17 11:33	02/28/17 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.6*		*40 - 110*	*02/08/17 11:33*	*02/28/17 11:01*	*1*

Client Sample ID: MW-7
Date Collected: 01/31/17 11:55
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-1
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	89.7		40 - 110	02/08/17 11:33	02/28/17 11:01	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	0.921		0.363	0.368	5.00	0.468	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-8

Date Collected: 01/31/17 13:55
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.1**	**B**	15.0	1.00	mg/L			02/16/17 04:18	5
Fluoride	**0.466**	**J B**	1.00	0.0100	mg/L			02/16/17 03:42	1
Sulfate	**1220**	**B**	500	3.00	mg/L			02/16/17 11:09	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0408**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 11:00	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 11:45	1
Arsenic	**0.000510**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:45	1
Barium	**0.0198**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:45	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:45	1
Boron	**1.74**		1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:45	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:45	1
Calcium	**235**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:45	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:45	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:45	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:45	1
Molybdenum	**0.0173**		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:45	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:45	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/03/17 08:04	02/07/17 10:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.37**		0.100	0.100	SU			02/03/17 16:24	1
Temperature	**19.6**		0.100	0.100	Degrees C			02/03/17 16:24	1
Total Dissolved Solids	**2010**		20.0	14.0	mg/L			02/07/17 15:53	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	**0.467**		0.199	0.203	1.00	0.215	pCi/L	02/08/17 10:54	03/02/17 13:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*02/08/17 10:54*	*03/02/17 13:34*	*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	**1.45**		0.334	0.360	1.00	0.390	pCi/L	02/08/17 11:33	02/28/17 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*02/08/17 11:33*	*02/28/17 11:01*	*1*

Client Sample ID: MW-8
Lab Sample ID: 490-121213-2
Date Collected: 01/31/17 13:55
Matrix: Water
Date Received: 02/02/17 14:26

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	93.5		40 - 110	02/08/17 11:33	02/28/17 11:01	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	1.92		0.389	0.413	5.00	0.390	pCi/L		03/03/17 12:21	1

Client Sample ID: MW-9

Date Collected: 01/31/17 15:15
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.4**	**B**	15.0	1.00	mg/L			02/16/17 06:05	5
Fluoride	**0.286**	**J B**	1.00	0.0100	mg/L			02/16/17 05:30	1
Sulfate	**57.2**	**B**	25.0	0.150	mg/L			02/16/17 06:05	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0179**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 11:06	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 11:50	1
Arsenic	**0.000520**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:50	1
Barium	**0.827**		0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:50	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:50	1
Boron	**0.431**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:50	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:50	1
Calcium	**75.0**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:50	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:50	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:50	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:50	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:50	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:50	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/03/17 08:04	02/07/17 10:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.53**		0.100	0.100	SU			02/03/17 16:24	1
Temperature	**19.7**		0.100	0.100	Degrees C			02/03/17 16:24	1
Total Dissolved Solids	**465**		10.0	7.00	mg/L			02/07/17 15:53	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	**1.09**		0.276	0.293	1.00	0.225	pCi/L	02/08/17 10:54	03/02/17 13:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*02/08/17 10:54*	*03/02/17 13:34*	*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	**1.02**		0.312	0.326	1.00	0.404	pCi/L	02/08/17 11:33	02/28/17 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.5*		*40 - 110*	*02/08/17 11:33*	*02/28/17 11:01*	*1*

Client Sample ID: MW-9
Lab Sample ID: 490-121213-3
Date Collected: 01/31/17 15:15
Matrix: Water
Date Received: 02/02/17 14:26

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	87.1		40 - 110	02/08/17 11:33	02/28/17 11:01	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	2.11		0.417	0.438	5.00	0.404	pCi/L		03/03/17 12:21	1

Client Sample ID: DUPE

Date Collected: 01/31/17 14:30
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.5**	**B**	15.0	1.00	mg/L			02/16/17 07:17	5
Fluoride	**0.461**	**J B**	1.00	0.0100	mg/L			02/16/17 06:41	1
Sulfate	**1230**	**B**	500	3.00	mg/L			02/16/17 12:21	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	**0.0414**	**J**	0.0500	0.00959	mg/L		03/02/17 14:15	03/03/17 11:11	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 11:55	1
Arsenic	**0.000556**	**J**	0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 11:55	1
Barium	**0.0211**	**J**	0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 11:55	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 11:55	1
Boron	**1.80**		1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 11:55	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 11:55	1
Calcium	**235**	**B**	1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 11:55	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 11:55	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 11:55	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 11:55	1
Molybdenum	**0.0194**		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 11:55	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 11:55	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 11:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/03/17 08:04	02/07/17 10:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.39**		0.100	0.100	SU			02/03/17 16:24	1
Temperature	**19.9**		0.100	0.100	Degrees C			02/03/17 16:24	1
Total Dissolved Solids	**1980**		20.0	14.0	mg/L			02/07/17 15:53	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	**0.401**		0.193	0.197	1.00	0.239	pCi/L	02/08/17 10:54	03/02/17 13:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.5*		*40 - 110*	*02/08/17 10:54*	*03/02/17 13:34*	*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	**1.46**		0.359	0.383	1.00	0.432	pCi/L	02/08/17 11:33	02/28/17 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.5*		*40 - 110*	*02/08/17 11:33*	*02/28/17 11:01*	*1*

Client Sample ID: DUPE
Date Collected: 01/31/17 14:30
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-4
Matrix: Water

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.2		40 - 110	02/08/17 11:33	02/28/17 11:01	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	1.86		0.408	0.431	5.00	0.432	pCi/L		03/03/17 12:21	1

Client Sample ID: FIELD BLANK

Date Collected: 01/31/17 17:45
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.799**	**J B**	3.00	0.200	mg/L			02/16/17 07:53	1
Fluoride	ND		1.00	0.0100	mg/L			02/16/17 07:53	1
Sulfate	**0.588**	**J B**	5.00	0.0300	mg/L			02/16/17 07:53	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 11:17	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 12:00	1
Arsenic	ND		0.00500	0.000118	mg/L		03/02/17 14:10	03/05/17 12:00	1
Barium	ND		0.200	0.000270	mg/L		03/02/17 14:10	03/05/17 12:00	1
Beryllium	ND		0.00200	0.000102	mg/L		03/02/17 14:10	03/05/17 12:00	1
Boron	**0.00445**	**J**	1.00	0.00339	mg/L		03/02/17 14:10	03/05/17 12:00	1
Cadmium	ND		0.00100	0.000152	mg/L		03/02/17 14:10	03/05/17 12:00	1
Calcium	ND		1.00	0.0412	mg/L		03/02/17 14:10	03/05/17 12:00	1
Chromium	ND		0.00300	0.000339	mg/L		03/02/17 14:10	03/05/17 12:00	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/02/17 14:10	03/05/17 12:00	1
Lead	ND		0.00500	0.0000675	mg/L		03/02/17 14:10	03/05/17 12:00	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/02/17 14:10	03/05/17 12:00	1
Selenium	ND		0.0100	0.000348	mg/L		03/02/17 14:10	03/05/17 12:00	1
Thallium	ND		0.00100	0.0000360	mg/L		03/02/17 14:10	03/05/17 12:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		02/03/17 08:04	02/07/17 10:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.81**		0.100	0.100	SU			02/03/17 16:24	1
Temperature	**20.0**		0.100	0.100	Degrees C			02/03/17 16:24	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			02/07/17 15:53	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	0.0911	U	0.103	0.103	1.00	0.164	pCi/L	02/08/17 10:54	03/02/17 13:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*02/08/17 10:54*	*03/02/17 13:37*	*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	-0.202	U	0.194	0.195	1.00	0.384	pCi/L	02/08/17 11:33	02/28/17 11:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*02/08/17 11:33*	*02/28/17 11:01*	*1*

Client Sample ID: FIELD BLANK
Lab Sample ID: 490-121213-5
Date Collected: 01/31/17 17:45
Matrix: Water
Date Received: 02/02/17 14:26

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

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*93.1*		*40 - 110*	*02/08/17 11:33*	*02/28/17 11:01*	*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	-0.111	U	0.220	0.221	5.00	0.384	pCi/L		03/03/17 12:21	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-408219/3
Matrix: Water
Analysis Batch: 408219

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4095	J	3.00	0.200	mg/L			02/16/17 01:01	1
Fluoride	0.01657	J	1.00	0.0100	mg/L			02/16/17 01:01	1
Sulfate	0.7461	J	5.00	0.0300	mg/L			02/16/17 01:01	1

Lab Sample ID: LCS 490-408219/4
Matrix: Water
Analysis Batch: 408219

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	10.13		mg/L		101	80 - 120
Fluoride	1.00	1.040		mg/L		104	80 - 120
Sulfate	10.0	10.94		mg/L		109	80 - 120

Lab Sample ID: LCSD 490-408219/5
Matrix: Water
Analysis Batch: 408219

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	10.24		mg/L		102	80 - 120	1	20
Fluoride	1.00	1.040		mg/L		104	80 - 120	0	20
Sulfate	10.0	10.94		mg/L		109	80 - 120	0	20

Lab Sample ID: 490-121213-1 MS
Matrix: Water
Analysis Batch: 408219

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.72	B F1	2.00	5.075	F1	mg/L		68	80 - 120
Fluoride	0.277	J B	0.200	0.4430	J	mg/L		83	80 - 120
Sulfate	23.0	B	2.00	20.97	4	mg/L		-104	80 - 120

Lab Sample ID: 490-121213-1 MSD
Matrix: Water
Analysis Batch: 408219

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.72	B F1	2.00	5.022	F1	mg/L		65	80 - 120	1	20
Fluoride	0.277	J B	0.200	0.4368	J	mg/L		80	80 - 120	1	20
Sulfate	23.0	B	2.00	20.79	4	mg/L		-113	80 - 120	1	20

Lab Sample ID: MB 490-408220/3
Matrix: Water
Analysis Batch: 408220

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2326	J	3.00	0.200	mg/L			02/16/17 09:40	1
Fluoride	ND		1.00	0.0100	mg/L			02/16/17 09:40	1
Sulfate	0.6974	J	5.00	0.0300	mg/L			02/16/17 09:40	1

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

Lab Sample ID: LCS 490-408220/4
Matrix: Water
Analysis Batch: 408220

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	10.30		mg/L		103	80 - 120
Fluoride	1.00	1.048		mg/L		105	80 - 120
Sulfate	10.0	10.91		mg/L		109	80 - 120

Lab Sample ID: LCSD 490-408220/5
Matrix: Water
Analysis Batch: 408220

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	10.34		mg/L		103	80 - 120	0	20
Fluoride	1.00	1.043		mg/L		104	80 - 120	0	20
Sulfate	10.0	10.93		mg/L		109	80 - 120	0	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
Cadmium	ND		0.00100	0.000152	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
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 490-405480/1-A
Matrix: Water
Analysis Batch: 405649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405480

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.1099	J	0.200	0.100	ug/L		02/03/17 08:04	02/03/17 12:44	1

Lab Sample ID: LCS 490-405480/2-A
Matrix: Water
Analysis Batch: 405649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405480

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	0.8873		ug/L		89	80 - 120		

Lab Sample ID: LCSD 490-405480/3-A
Matrix: Water
Analysis Batch: 405649

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 405480

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			1.00	0.8791		ug/L		88	80 - 120	1	20

Lab Sample ID: 490-121089-D-1-B MS
Matrix: Water
Analysis Batch: 405649

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 405480

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.281	B	1.00	1.442		ug/L		116	75 - 125		

Lab Sample ID: 490-121089-D-1-C MSD
Matrix: Water
Analysis Batch: 405649

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 405480

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.281	B	1.00	1.215		ug/L		93	75 - 125	17	20

Method: 9040C - pH

Lab Sample ID: LCS 490-405690/1
Matrix: Water
Analysis Batch: 405690

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	7.050		SU		101	98 - 103		

Lab Sample ID: 490-121213-1 DU
Matrix: Water
Analysis Batch: 405690

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.46			7.510		SU				0.7	20
Temperature	19.8			19.80		Degrees C				0	20

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

Lab Sample ID: MB 490-404238/1
Matrix: Water
Analysis Batch: 404238

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			02/07/17 15:53	1

Lab Sample ID: LCS 490-404238/2
Matrix: Water
Analysis Batch: 404238

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	108.0		mg/L		108	90 - 110

Lab Sample ID: 490-121173-A-1 DU
Matrix: Water
Analysis Batch: 404238

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	193		187.0		mg/L		3	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-291533/1-A
Matrix: Water
Analysis Batch: 295361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291533

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04580	U	0.111	0.111	1.00	0.205	pCi/L	02/08/17 10:54	03/02/17 11:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*02/08/17 10:54*	*03/02/17 11:46*	*1*

Lab Sample ID: LCS 160-291533/2-A
Matrix: Water
Analysis Batch: 295361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291533

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	6.01	7.131		0.906	1.00	0.213	pCi/L	119	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.5*		*40 - 110*

Lab Sample ID: 240-75121-G-1-A DU
Matrix: Water
Analysis Batch: 295688

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 291533

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	-0.0295	U	0.08476	U	0.113	1.00	0.189	pCi/L	0.56	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 240-75121-G-1-A DU
Matrix: Water
Analysis Batch: 295688

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 291533

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	84.4		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-291537/1-A
Matrix: Water
Analysis Batch: 294970

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291537

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4253		0.248	0.251	1.00	0.375	pCi/L	02/08/17 11:33	02/28/17 11:00	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110	02/08/17 11:33	02/28/17 11:00	1
Y Carrier	88.2		40 - 110	02/08/17 11:33	02/28/17 11:00	1

Lab Sample ID: LCS 160-291537/2-A
Matrix: Water
Analysis Batch: 294970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291537

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.8	14.88		1.59	1.00	0.339	pCi/L	108	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	93.5		40 - 110
Y Carrier	89.7		40 - 110

Lab Sample ID: 240-75121-G-1-B DU
Matrix: Water
Analysis Batch: 294970

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 291537

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.999			0.4528	U	0.302	1.00	0.464	pCi/L			0.82	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	84.4		40 - 110
Y Carrier	86.0		40 - 110

HPLC/IC

Analysis Batch: 408219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	9056A	
490-121213-2	MW-8	Total/NA	Water	9056A	
490-121213-2	MW-8	Total/NA	Water	9056A	
490-121213-3	MW-9	Total/NA	Water	9056A	
490-121213-3	MW-9	Total/NA	Water	9056A	
490-121213-4	DUPE	Total/NA	Water	9056A	
490-121213-4	DUPE	Total/NA	Water	9056A	
490-121213-5	FIELD BLANK	Total/NA	Water	9056A	
MB 490-408219/3	Method Blank	Total/NA	Water	9056A	
LCS 490-408219/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-408219/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-121213-1 MS	MW-7	Total/NA	Water	9056A	
490-121213-1 MSD	MW-7	Total/NA	Water	9056A	

Analysis Batch: 408220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-2	MW-8	Total/NA	Water	9056A	
490-121213-4	DUPE	Total/NA	Water	9056A	
MB 490-408220/3	Method Blank	Total/NA	Water	9056A	
LCS 490-408220/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-408220/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 204432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total Recoverable	Water	3005A	
490-121213-2	MW-8	Total Recoverable	Water	3005A	
490-121213-3	MW-9	Total Recoverable	Water	3005A	
490-121213-4	DUPE	Total Recoverable	Water	3005A	
490-121213-5	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-204432/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-204432/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-204432/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 204434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total Recoverable	Water	3005A	
490-121213-2	MW-8	Total Recoverable	Water	3005A	
490-121213-3	MW-9	Total Recoverable	Water	3005A	
490-121213-4	DUPE	Total Recoverable	Water	3005A	
490-121213-5	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-204434/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-204434/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-204434/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 204539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total Recoverable	Water	6010C	204434
490-121213-2	MW-8	Total Recoverable	Water	6010C	204434

Metals (Continued)

Analysis Batch: 204539 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-3	MW-9	Total Recoverable	Water	6010C	204434
490-121213-4	DUPE	Total Recoverable	Water	6010C	204434
490-121213-5	FIELD BLANK	Total Recoverable	Water	6010C	204434
MB 180-204434/1-A	Method Blank	Total Recoverable	Water	6010C	204434
LCS 180-204434/2-A	Lab Control Sample	Total Recoverable	Water	6010C	204434
LCSD 180-204434/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	204434

Analysis Batch: 204655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total Recoverable	Water	6020A	204432
490-121213-2	MW-8	Total Recoverable	Water	6020A	204432
490-121213-3	MW-9	Total Recoverable	Water	6020A	204432
490-121213-4	DUPE	Total Recoverable	Water	6020A	204432
490-121213-5	FIELD BLANK	Total Recoverable	Water	6020A	204432
MB 180-204432/1-A	Method Blank	Total Recoverable	Water	6020A	204432
LCS 180-204432/2-A	Lab Control Sample	Total Recoverable	Water	6020A	204432
LCSD 180-204432/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	204432

Prep Batch: 405480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	7470A	
490-121213-2	MW-8	Total/NA	Water	7470A	
490-121213-3	MW-9	Total/NA	Water	7470A	
490-121213-4	DUPE	Total/NA	Water	7470A	
490-121213-5	FIELD BLANK	Total/NA	Water	7470A	
MB 490-405480/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-405480/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 490-405480/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
490-121089-D-1-B MS	Matrix Spike	Total/NA	Water	7470A	
490-121089-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 405649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-405480/1-A	Method Blank	Total/NA	Water	7470A	405480
LCS 490-405480/2-A	Lab Control Sample	Total/NA	Water	7470A	405480
LCSD 490-405480/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	405480
490-121089-D-1-B MS	Matrix Spike	Total/NA	Water	7470A	405480
490-121089-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	405480

Analysis Batch: 406240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	7470A	405480
490-121213-2	MW-8	Total/NA	Water	7470A	405480
490-121213-3	MW-9	Total/NA	Water	7470A	405480
490-121213-4	DUPE	Total/NA	Water	7470A	405480
490-121213-5	FIELD BLANK	Total/NA	Water	7470A	405480

General Chemistry

Analysis Batch: 404238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	SM 2540C	
490-121213-2	MW-8	Total/NA	Water	SM 2540C	
490-121213-3	MW-9	Total/NA	Water	SM 2540C	
490-121213-4	DUPE	Total/NA	Water	SM 2540C	
490-121213-5	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-404238/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-404238/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-121299-C-1 MS	Matrix Spike	Total/NA	Water	SM 2540C	
490-121299-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 2540C	
490-121173-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 405690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	9040C	
490-121213-2	MW-8	Total/NA	Water	9040C	
490-121213-3	MW-9	Total/NA	Water	9040C	
490-121213-4	DUPE	Total/NA	Water	9040C	
490-121213-5	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-405690/1	Lab Control Sample	Total/NA	Water	9040C	
490-121213-1 DU	MW-7	Total/NA	Water	9040C	

Rad

Prep Batch: 291533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	PrecSep-21	
490-121213-2	MW-8	Total/NA	Water	PrecSep-21	
490-121213-3	MW-9	Total/NA	Water	PrecSep-21	
490-121213-4	DUPE	Total/NA	Water	PrecSep-21	
490-121213-5	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-291533/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-291533/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
240-75121-G-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 291537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121213-1	MW-7	Total/NA	Water	PrecSep_0	
490-121213-2	MW-8	Total/NA	Water	PrecSep_0	
490-121213-3	MW-9	Total/NA	Water	PrecSep_0	
490-121213-4	DUPE	Total/NA	Water	PrecSep_0	
490-121213-5	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-291537/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-291537/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
240-75121-G-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Client Sample ID: MW-7

Date Collected: 01/31/17 11:55
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-1

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			408219	02/16/17 01:55	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 10:55	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 11:25	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405480	02/03/17 08:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			406240	02/07/17 10:33	CAH	TAL NSH
Total/NA	Analysis	9040C		1			405690	02/03/17 16:24	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404238	02/07/17 15:53	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.51 mL	1.0 g	291533	02/08/17 10:54	MBC	TAL SL
Total/NA	Analysis	903.0		1			295361	03/02/17 11:46	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.51 mL	1.0 g	291537	02/08/17 11:33	MBC	TAL SL
Total/NA	Analysis	904.0		1			294970	02/28/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 01/31/17 13:55
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-2

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			408219	02/16/17 03:42	KS	TAL NSH
Total/NA	Analysis	9056A		5			408219	02/16/17 04:18	KS	TAL NSH
Total/NA	Analysis	9056A		100			408220	02/16/17 11:09	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 11:00	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 11:45	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405480	02/03/17 08:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			406240	02/07/17 10:36	CAH	TAL NSH
Total/NA	Analysis	9040C		1			405690	02/03/17 16:24	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	404238	02/07/17 15:53	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.34 mL	1.0 g	291533	02/08/17 10:54	MBC	TAL SL
Total/NA	Analysis	903.0		1			295361	03/02/17 13:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.34 mL	1.0 g	291537	02/08/17 11:33	MBC	TAL SL
Total/NA	Analysis	904.0		1			294970	02/28/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Client Sample ID: MW-9

Date Collected: 01/31/17 15:15
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-3

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			408219	02/16/17 05:30	KS	TAL NSH
Total/NA	Analysis	9056A		5			408219	02/16/17 06:05	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 11:06	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 11:50	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405480	02/03/17 08:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			406240	02/07/17 10:38	CAH	TAL NSH
Total/NA	Analysis	9040C		1			405690	02/03/17 16:24	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404238	02/07/17 15:53	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.17 mL	1.0 g	291533	02/08/17 10:54	MBC	TAL SL
Total/NA	Analysis	903.0		1			295361	03/02/17 13:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.17 mL	1.0 g	291537	02/08/17 11:33	MBC	TAL SL
Total/NA	Analysis	904.0		1			294970	02/28/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 01/31/17 14:30
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-4

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			408219	02/16/17 06:41	KS	TAL NSH
Total/NA	Analysis	9056A		5			408219	02/16/17 07:17	KS	TAL NSH
Total/NA	Analysis	9056A		100			408220	02/16/17 12:21	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 11:11	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 11:55	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405480	02/03/17 08:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			406240	02/07/17 10:41	CAH	TAL NSH
Total/NA	Analysis	9040C		1			405690	02/03/17 16:24	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	404238	02/07/17 15:53	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.27 mL	1.0 g	291533	02/08/17 10:54	MBC	TAL SL
Total/NA	Analysis	903.0		1			295361	03/02/17 13:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.27 mL	1.0 g	291537	02/08/17 11:33	MBC	TAL SL
Total/NA	Analysis	904.0		1			294970	02/28/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Client Sample ID: FIELD BLANK

Date Collected: 01/31/17 17:45
Date Received: 02/02/17 14:26

Lab Sample ID: 490-121213-5

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			408219	02/16/17 07:53	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 11:17	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 12:00	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	405480	02/03/17 08:04	LCS	TAL NSH
Total/NA	Analysis	7470A		1			406240	02/07/17 10:44	CAH	TAL NSH
Total/NA	Analysis	9040C		1			405690	02/03/17 16:24	AML	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	404238	02/07/17 15:53	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.85 mL	1.0 g	291533	02/08/17 10:54	MBC	TAL SL
Total/NA	Analysis	903.0		1			295688	03/02/17 13:37	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.85 mL	1.0 g	291537	02/08/17 11:33	MBC	TAL SL
Total/NA	Analysis	904.0		1			294970	02/28/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			295940	03/03/17 12:21	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: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17
North Carolina (WW/SW)	State Program	4	434	12-31-17
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
TestAmerica Job ID: 490-121213-1
Project/Site: Reid/HMPL Impoundment GW CCR-Rd 5

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-121213 Chain of Custody

Cooler Received/Opened On 2-2-17 @ 0910

Time Samples Removed From Cooler 1357 Time Samples Placed In Storage 1434 (2 Hour Window)

1. Tracking # 7127 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 14740456 pH Strip Lot HC689794 Chlorine Strip Lot 081116K

2. Temperature of rep. sample or temp blank when opened: 1.6 *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: one 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) 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) MDM

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) MDM

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) MDM

I certify that I attached a label with the unique LIMS number to each container (intial) MDM

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

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

Mary Dick
BREC
2/1/2017 1630

Loc: 490
121213

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 2/2/2017 @ 0910

Time Samples Removed From Cooler 1357 Time Samples Placed In Storage 1434 (2 Hour Window)

1. Tracking # 7160 (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: 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: 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) HKG

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) mam

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) mam

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) mam

I certify that I attached a label with the unique LIMS number to each container (intial) mam

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

12/2/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Cooler Received/Opened On 2/2/2017 @ 0910

Time Samples Removed From Cooler 1357 Time Samples Placed In Storage 1434 (2 Hour Window)

1. Tracking # 7285 (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: 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: 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) MSM

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) MSM

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) MSM

I certify that I attached a label with the unique LIMS number to each container (intial) MSM

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

3/6/2017

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: 02/01/2017**	COC No: 490-62475-18050.1
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: Loc: 490
(xxx) xxx-xxxx FAX	☑ 2 weeks			Lab Sampling: 121213
Project Name: Reid/HMPL Impoundment GW CCR-Round 5	☐ 1 week			
Site: Reid/HMPL Impoundment	☐ 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-7	1/31/17	1155	G	Water	6	N	N	x	x	x	x	-1
MW-8	1/31/17	1355	G	Water	6	N	N	x	x	x	x	2
MW-9	1/31/17	1515	G	Water	6	N	N	x	x	x	x	3
DUPE	1/31/17	1430	G	Water	6	N	N	x	x	x	x	4
FIELD BLANK	1/31/17	1745	G	Water	6	N	N	x	x	x	x	5
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: 2/1/2017 1630	Received by:	Company: TEN	Date/Time: 2-2-17 @ 0910 0.3/0.4/1.6c
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 # 159470-494 RIT Exp 12/17

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 02FEB17
ACTWGT: 10.0 LB MAN
CAD: 820425/CAFE2915

BILL RECIPIENT

TO

TESTAMERICA PITTSBURGH
301 ALPHA DRIVE

PITTSBURGH PA 15238

(412) 963-7058
INV:
PO:

RT 97 1 10:30 A 9969 02.03
FZ B02

FedEx Express

FRI - 03 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7235 6080 9969

EV AGCA

15238
PA-US PIT

Uncorrected temp 3.3 °C
Thermometer ID 9
CF 6 Initials TJ

PT-WI-SR-001 effective 7/26/13

490-121213 Waybill

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-121213 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-53291.1
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 #: 490-121213-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/2/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Reid/HMPL Impoundment GW CCR-Rd 5	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)	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-7 (490-121213-1)	1/31/17	11:55 Central		Water			X	X	X	2	Historical Review required
MW-8 (490-121213-2)	1/31/17	13:55 Central		Water			X	X	X	2	Historical Review required
MW-9 (490-121213-3)	1/31/17	15:15 Central		Water			X	X	X	2	Historical Review required
DUPE (490-121213-4)	1/31/17	14:30 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-121213-5)	1/31/17	17:45 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 *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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	4:00pm 2-2-17	TAN	Kristen Taylor	2/3/17 0900	TAS+L
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

490-121213 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	OC No: 90-53290.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@testamericainc.com	State: 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: 2/27/2017		Job #: 490-121213-1
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Reid/HMPL Impoundment GW CCR-Rd 5	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)	6010C/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-7 (490-121213-1)	1/31/17	11:55 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-121213-2)	1/31/17	13:55 Central		Water			X	X	1	Metals - run once, upload together.
MW-9 (490-121213-3)	1/31/17	15:15 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-121213-4)	1/31/17	14:30 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-121213-5)	1/31/17	17:45 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: 1:20P 2-2-17	Company: TAL	Received by:	Date/Time: 2/3/17 940	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:

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-121213-1

Login Number: 121213
List Number: 1
Creator: McBride, Mike

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: 490-121213-1

Login Number: 121213
List Number: 2
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 02/03/17 10:45 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: 490-121213-1

Login Number: 121213
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 02/03/17 11:24 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.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9
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: Reid/HMPL Impoundment GW CCR-Rd 5

TestAmerica Job ID: 490-121213-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
240-75121-G-1-A DU	Duplicate	84.4
490-121213-1	MW-7	82.6
490-121213-2	MW-8	83.8
490-121213-3	MW-9	85.5
490-121213-4	DUPE	83.5
490-121213-5	FIELD BLANK	91.4
LCS 160-291533/2-A	Lab Control Sample	93.5
MB 160-291533/1-A	Method Blank	91.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
240-75121-G-1-B DU	Duplicate	84.4	86.0
490-121213-1	MW-7	82.6	89.7
490-121213-2	MW-8	83.8	93.5
490-121213-3	MW-9	85.5	87.1
490-121213-4	DUPE	83.5	85.2
490-121213-5	FIELD BLANK	91.4	93.1
LCS 160-291537/2-A	Lab Control Sample	93.5	89.7
MB 160-291537/1-A	Method Blank	91.4	88.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-121745-1
Client Project/Site: Reid/HMPL Impoundment GW CCR-Round 5
Sampling Event: Big Rivers CCR/SemiAnnual GW

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
3/13/2017 11:19:29 AM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 5

TestAmerica Job ID: 490-121745-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-121745-1	MW-10	Water	02/09/17 12:05	02/10/17 11:29

Job ID: 490-121745-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-121745-1

Comments
No additional comments.

Receipt
The sample was received on 2/10/2017 9:35 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-412519 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 sample was diluted due to the nature of the sample matrix: MW-10 (490-121745-1). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-412519 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.

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-10
Date Collected: 02/09/17 12:05
Date Received: 02/10/17 11:29

Lab Sample ID: 490-121745-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.4	B	3.00	0.200	mg/L			03/06/17 10:21	1
Fluoride	0.437	J	1.00	0.0100	mg/L			03/06/17 10:21	1
Sulfate	145		50.0	0.300	mg/L			03/06/17 11:33	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.481		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 10:47	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		03/07/17 14:45	03/09/17 22:29	1
Arsenic	0.00325	J	0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 22:29	1
Barium	0.0705	J	0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 22:29	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 22:29	1
Boron	0.540	J B	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 22:29	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 22:29	1
Calcium	14.3		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 22:29	1
Chromium	0.00245	J	0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 22:29	1
Cobalt	0.000431	J	0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 22:29	1
Lead	0.000130	J	0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 22:29	1
Molybdenum	0.0119		0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 22:29	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 22:29	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 22:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		03/08/17 08:44	03/08/17 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.59		0.100	0.100	SU			02/10/17 18:03	1
Temperature	20.0		0.100	0.100	Degrees C			02/10/17 18:03	1
Total Dissolved Solids	679		10.0	7.00	mg/L			02/11/17 20:08	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	0.157		0.103	0.104	1.00	0.140	pCi/L	02/14/17 10:42	03/08/17 06:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*02/14/17 10:42*	*03/08/17 06:31*	*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	0.261	U	0.260	0.261	1.00	0.422	pCi/L	02/14/17 11:26	03/03/17 10:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*02/14/17 11:26*	*03/03/17 10:59*	*1*

Client Sample ID: MW-10
Lab Sample ID: 490-121745-1
Date Collected: 02/09/17 12:05
Matrix: Water
Date Received: 02/10/17 11:29

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*84.5*		*40 - 110*	*02/14/17 11:26*	*03/03/17 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	0.419	U	0.280	0.281	5.00	0.422	pCi/L		03/10/17 08:35	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-412519/3
Matrix: Water
Analysis Batch: 412519

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.5458	J	3.00	0.200	mg/L			03/06/17 08:47	1
Fluoride	ND		1.00	0.0100	mg/L			03/06/17 08:47	1
Sulfate	ND		5.00	0.0300	mg/L			03/06/17 08:47	1

Lab Sample ID: LCS 490-412519/4
Matrix: Water
Analysis Batch: 412519

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	9.574		mg/L		96	80 - 120
Fluoride	1.00	0.9860	J	mg/L		99	80 - 120
Sulfate	10.0	9.518		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-412519/5
Matrix: Water
Analysis Batch: 412519

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	9.698		mg/L		97	80 - 120	1	20
Fluoride	1.00	0.9981	J	mg/L		100	80 - 120	1	20
Sulfate	10.0	9.682		mg/L		97	80 - 120	2	20

Lab Sample ID: 490-121745-1 MS
Matrix: Water
Analysis Batch: 412519

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	29.4	B	2.00	25.40	4	mg/L		-202	80 - 120
Fluoride	0.437	J	0.200	0.6255	J	mg/L		94	80 - 120

Lab Sample ID: 490-121745-1 MSD
Matrix: Water
Analysis Batch: 412519

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	29.4	B	2.00	25.54	4	mg/L		-195	80 - 120	1	20
Fluoride	0.437	J	0.200	0.5980	J	mg/L		80	80 - 120	4	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-204857/1-A
Matrix: Water
Analysis Batch: 204950

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		03/07/17 14:47	03/08/17 09:32	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-204857/2-A
Matrix: Water
Analysis Batch: 204950

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 204857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.000		mg/L		100	80 - 120

Lab Sample ID: LCSD 180-204857/3-A
Matrix: Water
Analysis Batch: 204950

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 204857

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.008		mg/L		101	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-204855/1-A
Matrix: Water
Analysis Batch: 205185

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 204855

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		03/07/17 14:45	03/09/17 21:16	1
Arsenic	ND		0.00500	0.000118	mg/L		03/07/17 14:45	03/09/17 21:16	1
Barium	ND		0.200	0.000270	mg/L		03/07/17 14:45	03/09/17 21:16	1
Beryllium	ND		0.00200	0.000102	mg/L		03/07/17 14:45	03/09/17 21:16	1
Boron	0.009818	J	1.00	0.00339	mg/L		03/07/17 14:45	03/09/17 21:16	1
Cadmium	ND		0.00100	0.000152	mg/L		03/07/17 14:45	03/09/17 21:16	1
Calcium	ND		1.00	0.0412	mg/L		03/07/17 14:45	03/09/17 21:16	1
Chromium	ND		0.00300	0.000339	mg/L		03/07/17 14:45	03/09/17 21:16	1
Cobalt	ND		0.00500	0.0000218	mg/L		03/07/17 14:45	03/09/17 21:16	1
Lead	ND		0.00500	0.0000675	mg/L		03/07/17 14:45	03/09/17 21:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		03/07/17 14:45	03/09/17 21:16	1
Selenium	ND		0.0100	0.000348	mg/L		03/07/17 14:45	03/09/17 21:16	1
Thallium	ND		0.00100	0.0000360	mg/L		03/07/17 14:45	03/09/17 21:16	1

Lab Sample ID: LCS 180-204855/2-A
Matrix: Water
Analysis Batch: 205185

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 204855

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5256		mg/L		105	80 - 120
Arsenic	0.0400	0.03971		mg/L		99	80 - 120
Barium	2.00	1.974		mg/L		99	80 - 120
Beryllium	0.0500	0.04796		mg/L		96	80 - 120
Boron	1.00	0.9618	J	mg/L		96	80 - 120
Cadmium	0.0500	0.05485		mg/L		110	80 - 120
Calcium	50.0	56.93		mg/L		114	80 - 120
Chromium	0.200	0.1689		mg/L		84	80 - 120
Cobalt	0.500	0.4158		mg/L		83	80 - 120
Lead	0.0200	0.02118		mg/L		106	80 - 120
Molybdenum	1.00	1.089		mg/L		109	80 - 120
Selenium	0.0100	0.008404	J	mg/L		84	80 - 120
Thallium	0.0500	0.05204		mg/L		104	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 180-204855/3-A
Matrix: Water
Analysis Batch: 205185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 204855

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5900		mg/L		118	80 - 120	12	20
Arsenic	0.0400	0.04094		mg/L		102	80 - 120	3	20
Barium	2.00	2.029		mg/L		101	80 - 120	3	20
Beryllium	0.0500	0.04922		mg/L		98	80 - 120	3	20
Boron	1.00	0.9915	J	mg/L		99	80 - 120	3	20
Cadmium	0.0500	0.05606		mg/L		112	80 - 120	2	20
Calcium	50.0	60.13		mg/L		120	80 - 120	5	20
Chromium	0.200	0.1730		mg/L		87	80 - 120	2	20
Cobalt	0.500	0.4249		mg/L		85	80 - 120	2	20
Lead	0.0200	0.02165		mg/L		108	80 - 120	2	20
Molybdenum	1.00	1.187		mg/L		119	80 - 120	9	20
Selenium	0.0100	0.01008		mg/L		101	80 - 120	18	20
Thallium	0.0500	0.05425		mg/L		109	80 - 120	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-412844/1-A
Matrix: Water
Analysis Batch: 413138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 412844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		03/08/17 08:44	03/08/17 15:57	1

Lab Sample ID: LCS 490-412844/2-A
Matrix: Water
Analysis Batch: 413138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 412844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.055		ug/L		105	80 - 120

Lab Sample ID: 490-122986-B-1-C MS
Matrix: Water
Analysis Batch: 413138

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 412844

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	0.9971		ug/L		100	75 - 125

Lab Sample ID: 490-122986-B-1-D MSD
Matrix: Water
Analysis Batch: 413138

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 412844

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9352		ug/L		94	75 - 125	6	20

Method: 9040C - pH

Lab Sample ID: LCS 490-407266/1
Matrix: Water
Analysis Batch: 407266

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: 490-121745-1 DU
Matrix: Water
Analysis Batch: 407266

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	9.59			9.590		SU				0	20
Temperature	20.0			20.00		Degrees C				0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-407274/1
Matrix: Water
Analysis Batch: 407274

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			02/11/17 20:08	1

Lab Sample ID: LCS 490-407274/2
Matrix: Water
Analysis Batch: 407274

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	109.0		mg/L		109	90 - 110		

Lab Sample ID: LCSD 490-407274/3
Matrix: Water
Analysis Batch: 407274

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	109.0		mg/L		109	90 - 110	0	20

Lab Sample ID: 490-121499-A-1 DU
Matrix: Water
Analysis Batch: 407274

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	213			214.0		mg/L				0.5	20

Lab Sample ID: 490-121829-O-1 DU
Matrix: Water
Analysis Batch: 407274

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	139			137.0		mg/L				1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-292265/1-A
Matrix: Water
Analysis Batch: 296604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292265

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03328	U	0.0860	0.0861	1.00	0.157	pCi/L	02/14/17 10:42	03/08/17 06:30	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*02/14/17 10:42*	*03/08/17 06:30*	*1*

Lab Sample ID: LCS 160-292265/2-A
Matrix: Water
Analysis Batch: 296604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292265

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.849		1.08	1.00	0.147	pCi/L	87	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.6*		*40 - 110*

Lab Sample ID: 600-143540-C-2-B MS
Matrix: Water
Analysis Batch: 296604

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 292265

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.587		11.2	10.28		1.12	1.00	0.156	pCi/L	86	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*86.7*		*40 - 110*

Lab Sample ID: 600-143540-D-2-A MSD
Matrix: Water
Analysis Batch: 296604

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 292265

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	0.587		11.3	10.75		1.17	1.00	0.149	pCi/L	90	75 - 138	0.21	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*84.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-292279/1-A
Matrix: Water
Analysis Batch: 295725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292279

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1073	U	0.239	0.239	1.00	0.410	pCi/L	02/14/17 11:26	03/03/17 10:58	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*02/14/17 11:26*	*03/03/17 10:58*	*1*
Y Carrier	*87.1*		*40 - 110*	*02/14/17 11:26*	*03/03/17 10:58*	*1*

Lab Sample ID: LCS 160-292279/2-A
Matrix: Water
Analysis Batch: 295725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292279

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.8	15.20		1.64	1.00	0.462	pCi/L	110	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.6*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Lab Sample ID: 600-143540-C-2-F MS
Matrix: Water
Analysis Batch: 295725

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 292279

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.884		13.8	17.55		1.86	1.00	0.390	pCi/L	121	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*86.7*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Lab Sample ID: 600-143540-D-2-C MSD
Matrix: Water
Analysis Batch: 295725

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 292279

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	0.884		13.8	16.68		1.79	1.00	0.392	pCi/L	115	45 - 150	0.24	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*84.4*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

HPLC/IC

Analysis Batch: 412519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	9056A	
490-121745-1	MW-10	Total/NA	Water	9056A	
MB 490-412519/3	Method Blank	Total/NA	Water	9056A	
LCS 490-412519/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-412519/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-121745-1 MS	MW-10	Total/NA	Water	9056A	
490-121745-1 MSD	MW-10	Total/NA	Water	9056A	

Metals

Prep Batch: 204855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total Recoverable	Water	3005A	
MB 180-204855/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-204855/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-204855/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 204857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total Recoverable	Water	3005A	
MB 180-204857/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-204857/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-204857/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 204950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total Recoverable	Water	6010C	204857
MB 180-204857/1-A	Method Blank	Total Recoverable	Water	6010C	204857
LCS 180-204857/2-A	Lab Control Sample	Total Recoverable	Water	6010C	204857
LCSD 180-204857/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	204857

Analysis Batch: 205185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total Recoverable	Water	6020A	204855
MB 180-204855/1-A	Method Blank	Total Recoverable	Water	6020A	204855
LCS 180-204855/2-A	Lab Control Sample	Total Recoverable	Water	6020A	204855
LCSD 180-204855/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020A	204855

Prep Batch: 412844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	7470A	
MB 490-412844/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-412844/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-122986-B-1-C MS	Matrix Spike	Dissolved	Water	7470A	
490-122986-B-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	

Analysis Batch: 413138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	7470A	412844
MB 490-412844/1-A	Method Blank	Total/NA	Water	7470A	412844

Metals (Continued)

Analysis Batch: 413138 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-412844/2-A	Lab Control Sample	Total/NA	Water	7470A	412844
490-122986-B-1-C MS	Matrix Spike	Dissolved	Water	7470A	412844
490-122986-B-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	412844

General Chemistry

Analysis Batch: 407266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	9040C	
LCS 490-407266/1	Lab Control Sample	Total/NA	Water	9040C	
490-121745-1 DU	MW-10	Total/NA	Water	9040C	

Analysis Batch: 407274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	SM 2540C	
MB 490-407274/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-407274/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-407274/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-121499-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-121829-O-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 292265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	PrecSep-21	
MB 160-292265/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-292265/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
600-143540-C-2-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
600-143540-D-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 292279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-121745-1	MW-10	Total/NA	Water	PrecSep_0	
MB 160-292279/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-292279/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
600-143540-C-2-F MS	Matrix Spike	Total/NA	Water	PrecSep_0	
600-143540-D-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 5

TestAmerica Job ID: 490-121745-1

Client Sample ID: MW-10

Date Collected: 02/09/17 12:05
Date Received: 02/10/17 11:29

Lab Sample ID: 490-121745-1

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			412519	03/06/17 10:21	JHS	TAL NSH
Total/NA	Analysis	9056A		10			412519	03/06/17 11:33	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	204857	03/07/17 14:47	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			204950	03/08/17 10:47	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	204855	03/07/17 14:45	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	205185	03/09/17 22:29	RJR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	412844	03/08/17 08:44	CAH	TAL NSH
Total/NA	Analysis	7470A		1			413138	03/08/17 16:15	CAH	TAL NSH
Total/NA	Analysis	9040C		1			407266	02/10/17 18:03	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	407274	02/11/17 20:08	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1001.02 mL	1.0 g	292265	02/14/17 10:42	PJM	TAL SL
Total/NA	Analysis	903.0		1			296604	03/08/17 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1001.02 mL	1.0 g	292279	02/14/17 11:26	PJM	TAL SL
Total/NA	Analysis	904.0		1			295725	03/03/17 10:59	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			297143	03/10/17 08:35	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: Reid/HMPL Impoundment GW CCR-Round 5

TestAmerica Job ID: 490-121745-1

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

Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 5

TestAmerica Job ID: 490-121745-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-17

The following analytes are included in this report, but 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 certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-17
California	State Program	9	2891	03-31-18
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-17
Illinois	NELAP	5	200005	06-30-17
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-17
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-17 *
North Carolina (WW/SW)	State Program	4	434	12-31-17
Pennsylvania	NELAP	3	02-00416	04-30-17
South Carolina	State Program	4	89014	04-30-17
Texas	NELAP	6	T104704528-15-2	03-31-17
US Fish & Wildlife	Federal		LE94312A-1	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Big Rivers Electric Corporation
TestAmerica Job ID: 490-121745-1
Project/Site: Reid/HMPL Impoundment GW CCR-Round 5

Laboratory: TestAmerica St. Louis (Continued)

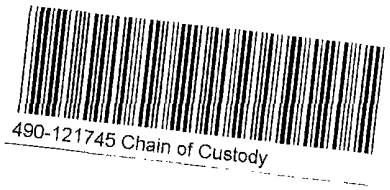
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM



Cooler Received/Opened On 2/10/2017 @ 0935

Time Samples Removed From Cooler 1113 Time Samples Placed In Storage 1136 (2 Hour Window)

1. Tracking # 7241 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960353 pH Strip Lot HC693124 Chlorine Strip Lot 0811167K

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 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) 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) PM

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) PM

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) PM

I certify that I attached a label with the unique LIMS number to each container (intial) PM

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: 02/09/2017**
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: Reid/HMPL Impoundment GW CCR-Round 5	☐ 1 week		
Site: Reid/HMPL Impoundment	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-62475-18050.2
1 of 1 COCs
Sampler: Greg Dick
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Loc: 490
121745

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-10	2/9/17	1205	G	Water	6	N	N	x	x	x	x	
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: 2/9/2017 1530	Received by:	Company: TAN	Date/Time: 2/10/17 935
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

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2/13/2017

121745

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

Mug Dick
BREC
2/9/2017 1530

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-121745 Chain of Custody

TestAmerica
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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-53539.1
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 #: 490-121745-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/10/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Reid/HMPL Impoundment GW CCR-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	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-10 (490-121745-1)	2/9/17	12:05 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 *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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: Billy Barnes	2-7-17 1330	TAN	Kristen Taylor	2/11/17 0830	TASL
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:

3/13/2017

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-121745 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	COC No: 490-53610.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@... Kentucky	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Kentucky (UST)	Job #: 490-121745-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 3/7/2017		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:		
Email:	WO #:		
Project Name: Reid/HMPL Impoundment GW CCR-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/3005A (MOD) Lithium	6020A/3005A (MOD) ICP/MS Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-10 (490-121745-1)	2/9/17	12:05 Central		Water			X	X	2	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 *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: 2-13-17 @ 1450	Company: TAN	Received by:	Date/Time: 2/14/17 930	Company: 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:

3/13/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-121745-1
SDG Number:

Login Number: 121745
List Number: 1
Creator: Ngo, Phiet

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: 490-121745-1
SDG Number:

Login Number: 121745
List Number: 3
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 02/14/17 01:45 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: 490-121745-1
SDG Number:

Login Number: 121745
List Number: 2
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 02/11/17 11:38 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.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.6
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: Reid/HMPL Impoundment GW CCR-Round 5

TestAmerica Job ID: 490-121745-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
490-121745-1	MW-10	83.8
600-143540-C-2-B MS	Matrix Spike	86.7
600-143540-D-2-A MSD	Matrix Spike Duplicate	84.4
LCS 160-292265/2-A	Lab Control Sample	90.6
MB 160-292265/1-A	Method Blank	87.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
490-121745-1	MW-10	83.8	84.5
600-143540-C-2-F MS	Matrix Spike	86.7	85.2
600-143540-D-2-C MSD	Matrix Spike Duplicate	84.4	86.4
LCS 160-292279/2-A	Lab Control Sample	90.6	85.2
MB 160-292279/1-A	Method Blank	87.3	87.1

Tracer/Carrier Legend

Ba = Ba Carrier

Y = 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: 490-128490-1
TestAmerica Sample Delivery Group: Reid/HMPL Impoundment
Client Project/Site: Reid/HMPL Impoundment GW CCR-Round 6
Sampling Event: Big Rivers CCR/SemiAnnual GW

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
6/23/2017 11:19:47 AM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 6

TestAmerica Job ID: 490-128490-1
SDG: Reid/HMPL Impoundment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-128490-1	MW-7	Water	05/11/17 11:20	05/13/17 17:02
490-128490-2	MW-8	Water	05/11/17 13:05	05/13/17 17:02
490-128490-3	MW-9	Water	05/11/17 14:30	05/13/17 17:02
490-128490-4	MW-10	Water	05/11/17 16:10	05/13/17 17:02
490-128490-5	DUPE	Water	05/11/17 14:55	05/13/17 17:02
490-128490-6	FIELD BLANK	Water	05/11/17 16:30	05/13/17 17:02

Job ID: 490-128490-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-128490-1

Comments
No additional comments.

Receipt
The samples were received on 5/13/2017 10:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3º C and 0.4º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-433786 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 490-433786 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 490-433786 contained Chloride and Fluoride 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 490-433980 contained Fluoride 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 490-433980 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-433980 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 490-433980 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 (490-128490-4). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-434477 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 490-434477 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-434477 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-8 (490-128490-2). 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.

Job ID: 490-128490-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

RAD

Method(s) PrecSep-21: Radium 226 Prep Batch 160-3090087: 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-7 (490-128490-1), MW-8 (490-128490-2), MW-9 (490-128490-3), MW-10 (490-128490-4), DUPE (490-128490-5) and FIELD BLANK (490-128490-6)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-309087: The following samples were reduced due to limited volume. MW-7 (490-128490-1), MW-8 (490-128490-2), MW-9 (490-128490-3), MW-10 (490-128490-4), DUPE (490-128490-5) and FIELD BLANK (490-128490-6)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-309095: 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-7 (490-128490-1), MW-8 (490-128490-2), MW-9 (490-128490-3), MW-10 (490-128490-4), DUPE (490-128490-5) and FIELD BLANK (490-128490-6)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-309095: The following samples were reduced due to limited volume. MW-7 (490-128490-1), MW-8 (490-128490-2), MW-9 (490-128490-3), MW-10 (490-128490-4), DUPE (490-128490-5) and FIELD BLANK (490-128490-6)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6020A: The closing low level check standard recovery is outside the acceptance criteria for Manganese. This is due to the high concentrations found in the soil/sediment samples analyzed before the CCVL. No bias in the sample results is suspected.

No additional analytical or quality issues were noted, other than those described above or 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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
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-7

Date Collected: 05/11/17 11:20
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.73**	**B**	3.00	0.200	mg/L			05/31/17 19:45	1
Fluoride	**0.282**	**J**	1.00	0.0100	mg/L			05/31/17 19:45	1
Sulfate	**25.7**		5.00	0.0300	mg/L			05/31/17 19:45	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		06/13/17 12:33	06/14/17 13:05	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		06/13/17 14:36	06/16/17 19:37	1
Arsenic	**0.000606**	**J**	0.00500	0.000118	mg/L		06/13/17 14:36	06/16/17 19:37	1
Barium	**0.0592**	**J**	0.200	0.000270	mg/L		06/13/17 14:36	06/16/17 19:37	1
Beryllium	ND		0.00200	0.000102	mg/L		06/13/17 14:36	06/16/17 19:37	1
Boron	**0.295**	**J**	1.00	0.00339	mg/L		06/13/17 14:36	06/16/17 19:37	1
Cadmium	ND		0.00100	0.000152	mg/L		06/13/17 14:36	06/16/17 19:37	1
Calcium	**41.1**		1.00	0.0412	mg/L		06/13/17 14:36	06/16/17 19:37	1
Chromium	ND		0.00300	0.000339	mg/L		06/13/17 14:36	06/16/17 19:37	1
Cobalt	**0.000192**	**J B**	0.00500	0.0000218	mg/L		06/13/17 14:36	06/16/17 19:37	1
Lead	ND		0.00500	0.0000675	mg/L		06/13/17 14:36	06/16/17 19:37	1
Molybdenum	**0.00764**	**J**	0.0100	0.000873	mg/L		06/13/17 14:36	06/16/17 19:37	1
Selenium	ND		0.0100	0.000348	mg/L		06/13/17 14:36	06/16/17 19:37	1
Thallium	ND		0.00100	0.0000360	mg/L		06/13/17 14:36	06/16/17 19:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 17:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.25**		0.100	0.100	SU			05/17/17 17:21	1
Temperature	**22.6**		0.100	0.100	Degrees C			05/17/17 17:21	1
Total Dissolved Solids	**291**		10.0	7.00	mg/L			05/18/17 17:49	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	**0.349**		0.131	0.135	1.00	0.123	pCi/L	05/17/17 08:54	06/08/17 05:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:54*	*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	0.322	0.323	1.00	0.523	pCi/L	05/17/17 09:10	05/31/17 14:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:20*	*1*

Client Sample ID: MW-7
Date Collected: 05/11/17 11:20
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-1
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*76.3*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:20*	*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	**0.662**		0.347	0.350	5.00	0.523	pCi/L		06/12/17 11:55	1

Client Sample ID: MW-8

Date Collected: 05/11/17 13:05
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.6	B	15.0	1.00	mg/L			06/01/17 15:09	5
Fluoride	0.480	J	1.00	0.0100	mg/L			05/31/17 19:59	1
Sulfate	1180	B	250	1.50	mg/L			06/01/17 15:23	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0377	J	0.0500	0.00959	mg/L		06/13/17 12:33	06/14/17 13:10	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00125	J B	0.00200	0.0000213	mg/L		06/14/17 13:36	06/21/17 21:03	1
Arsenic	0.000755	J	0.00500	0.000118	mg/L		06/14/17 13:36	06/21/17 21:03	1
Barium	0.0173	J	0.200	0.000270	mg/L		06/14/17 13:36	06/21/17 21:03	1
Beryllium	ND		0.00200	0.000102	mg/L		06/14/17 13:36	06/21/17 21:03	1
Boron	1.60	B	1.00	0.00339	mg/L		06/14/17 13:36	06/21/17 21:03	1
Cadmium	ND		0.00100	0.000152	mg/L		06/14/17 13:36	06/21/17 21:03	1
Calcium	251		1.00	0.0412	mg/L		06/14/17 13:36	06/21/17 21:03	1
Chromium	ND		0.00300	0.000339	mg/L		06/14/17 13:36	06/21/17 21:03	1
Cobalt	0.0000380	J	0.00500	0.0000218	mg/L		06/14/17 13:36	06/21/17 21:03	1
Lead	ND		0.00500	0.0000675	mg/L		06/14/17 13:36	06/21/17 21:03	1
Molybdenum	0.0158		0.0100	0.000873	mg/L		06/14/17 13:36	06/21/17 21:03	1
Selenium	ND		0.0100	0.000348	mg/L		06/14/17 13:36	06/21/17 21:03	1
Thallium	ND		0.00100	0.0000360	mg/L		06/14/17 13:36	06/21/17 21:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 17:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.14		0.100	0.100	SU			05/17/17 17:21	1
Temperature	22.5		0.100	0.100	Degrees C			05/17/17 17:21	1
Total Dissolved Solids	1990		20.0	14.0	mg/L			05/18/17 17:49	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	0.489		0.158	0.164	1.00	0.144	pCi/L	05/17/17 08:54	06/08/17 05:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:55*	*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	0.630		0.353	0.358	1.00	0.529	pCi/L	05/17/17 09:10	05/31/17 14:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:20*	*1*

Client Sample ID: MW-8
Date Collected: 05/11/17 13:05
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	80.0		40 - 110	05/17/17 09:10	05/31/17 14:20	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	1.12		0.387	0.394	5.00	0.529	pCi/L		06/12/17 11:55	1

Client Sample ID: MW-9

Date Collected: 05/11/17 14:30
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.0	B	3.00	0.200	mg/L			05/31/17 20:12	1
Fluoride	0.287	J	1.00	0.0100	mg/L			05/31/17 20:12	1
Sulfate	30.4		5.00	0.0300	mg/L			05/31/17 20:12	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0136	J	0.0500	0.00959	mg/L		06/13/17 12:33	06/14/17 13:16	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000903	J B	0.00200	0.0000213	mg/L		06/14/17 13:36	06/21/17 21:08	1
Arsenic	0.000632	J	0.00500	0.000118	mg/L		06/14/17 13:36	06/21/17 21:08	1
Barium	0.833		0.200	0.000270	mg/L		06/14/17 13:36	06/21/17 21:08	1
Beryllium	ND		0.00200	0.000102	mg/L		06/14/17 13:36	06/21/17 21:08	1
Boron	0.362	J B	1.00	0.00339	mg/L		06/14/17 13:36	06/21/17 21:08	1
Cadmium	ND		0.00100	0.000152	mg/L		06/14/17 13:36	06/21/17 21:08	1
Calcium	72.9		1.00	0.0412	mg/L		06/14/17 13:36	06/21/17 21:08	1
Chromium	ND		0.00300	0.000339	mg/L		06/14/17 13:36	06/21/17 21:08	1
Cobalt	ND		0.00500	0.0000218	mg/L		06/14/17 13:36	06/21/17 21:08	1
Lead	ND		0.00500	0.0000675	mg/L		06/14/17 13:36	06/21/17 21:08	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/14/17 13:36	06/21/17 21:08	1
Selenium	ND		0.0100	0.000348	mg/L		06/14/17 13:36	06/21/17 21:08	1
Thallium	ND		0.00100	0.0000360	mg/L		06/14/17 13:36	06/21/17 21:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 17:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.35		0.100	0.100	SU			05/17/17 17:21	1
Temperature	22.5		0.100	0.100	Degrees C			05/17/17 17:21	1
Total Dissolved Solids	435		10.0	7.00	mg/L			05/18/17 17:49	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	0.865		0.205	0.219	1.00	0.166	pCi/L	05/17/17 08:54	06/08/17 05:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:55*	*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	1.67		0.571	0.591	1.00	0.796	pCi/L	05/17/17 09:10	05/31/17 14:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:42*	*1*

Client Sample ID: MW-9
Date Collected: 05/11/17 14:30
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-3
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	71.4		40 - 110	05/17/17 09:10	05/31/17 14:42	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	2.53		0.607	0.631	5.00	0.796	pCi/L		06/12/17 11:55	1

Client Sample ID: MW-10

Date Collected: 05/11/17 16:10
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.1	B	3.00	0.200	mg/L			05/30/17 22:48	1
Fluoride	0.556	J	1.00	0.0100	mg/L			05/30/17 22:48	1
Sulfate	168		25.0	0.150	mg/L			05/31/17 17:02	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.607		0.0500	0.00959	mg/L		06/13/17 12:33	06/14/17 13:31	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00115	J B	0.00200	0.0000213	mg/L		06/14/17 13:36	06/21/17 21:13	1
Arsenic	0.00373	J	0.00500	0.000118	mg/L		06/14/17 13:36	06/21/17 21:13	1
Barium	0.0591	J	0.200	0.000270	mg/L		06/14/17 13:36	06/21/17 21:13	1
Beryllium	ND		0.00200	0.000102	mg/L		06/14/17 13:36	06/21/17 21:13	1
Boron	0.679	J B	1.00	0.00339	mg/L		06/14/17 13:36	06/21/17 21:13	1
Cadmium	ND		0.00100	0.000152	mg/L		06/14/17 13:36	06/21/17 21:13	1
Calcium	13.1		1.00	0.0412	mg/L		06/14/17 13:36	06/21/17 21:13	1
Chromium	0.00169	J	0.00300	0.000339	mg/L		06/14/17 13:36	06/21/17 21:13	1
Cobalt	0.000408	J	0.00500	0.0000218	mg/L		06/14/17 13:36	06/21/17 21:13	1
Lead	0.000188	J	0.00500	0.0000675	mg/L		06/14/17 13:36	06/21/17 21:13	1
Molybdenum	0.00987	J	0.0100	0.000873	mg/L		06/14/17 13:36	06/21/17 21:13	1
Selenium	ND		0.0100	0.000348	mg/L		06/14/17 13:36	06/21/17 21:13	1
Thallium	ND		0.00100	0.0000360	mg/L		06/14/17 13:36	06/21/17 21:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 17:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.69		0.100	0.100	SU			05/17/17 17:21	1
Temperature	22.5		0.100	0.100	Degrees C			05/17/17 17:21	1
Total Dissolved Solids	763		10.0	7.00	mg/L			05/18/17 17:49	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	0.0671	U	0.0921	0.0923	1.00	0.155	pCi/L	05/17/17 08:54	06/08/17 05:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:56*	*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	0.220	U	0.465	0.466	1.00	0.793	pCi/L	05/17/17 09:10	05/31/17 14:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:42*	*1*

Client Sample ID: MW-10

Date Collected: 05/11/17 16:10
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-4

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*71.0*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:42*	*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	0.287	U	0.475	0.475	5.00	0.793	pCi/L		06/12/17 11:55	1

Client Sample ID: DUPE

Date Collected: 05/11/17 14:55
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.0	B	3.00	0.200	mg/L			05/30/17 23:02	1
Fluoride	0.249	J	1.00	0.0100	mg/L			05/30/17 23:02	1
Sulfate	20.5	B	5.00	0.0300	mg/L			05/30/17 23:02	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0123	J	0.0500	0.00959	mg/L		06/13/17 12:33	06/14/17 13:36	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000903	J B	0.00200	0.0000213	mg/L		06/14/17 13:36	06/21/17 21:17	1
Arsenic	0.000554	J	0.00500	0.000118	mg/L		06/14/17 13:36	06/21/17 21:17	1
Barium	0.704		0.200	0.000270	mg/L		06/14/17 13:36	06/21/17 21:17	1
Beryllium	ND		0.00200	0.000102	mg/L		06/14/17 13:36	06/21/17 21:17	1
Boron	0.298	J B	1.00	0.00339	mg/L		06/14/17 13:36	06/21/17 21:17	1
Cadmium	ND		0.00100	0.000152	mg/L		06/14/17 13:36	06/21/17 21:17	1
Calcium	67.3		1.00	0.0412	mg/L		06/14/17 13:36	06/21/17 21:17	1
Chromium	ND		0.00300	0.000339	mg/L		06/14/17 13:36	06/21/17 21:17	1
Cobalt	0.0000240	J	0.00500	0.0000218	mg/L		06/14/17 13:36	06/21/17 21:17	1
Lead	ND		0.00500	0.0000675	mg/L		06/14/17 13:36	06/21/17 21:17	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/14/17 13:36	06/21/17 21:17	1
Selenium	ND		0.0100	0.000348	mg/L		06/14/17 13:36	06/21/17 21:17	1
Thallium	ND		0.00100	0.0000360	mg/L		06/14/17 13:36	06/21/17 21:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 17:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.35		0.100	0.100	SU			05/17/17 17:21	1
Temperature	22.5		0.100	0.100	Degrees C			05/17/17 17:21	1
Total Dissolved Solids	403		10.0	7.00	mg/L			05/18/17 17:49	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	0.730		0.179	0.191	1.00	0.106	pCi/L	05/17/17 08:54	06/08/17 05:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:57*	*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	1.61		0.513	0.534	1.00	0.694	pCi/L	05/17/17 09:10	05/31/17 14:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:42*	*1*

Client Sample ID: DUPE
Date Collected: 05/11/17 14:55
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-5
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	75.5		40 - 110	05/17/17 09:10	05/31/17 14:42	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	2.34		0.543	0.567	5.00	0.694	pCi/L		06/12/17 11:55	1

Client Sample ID: FIELD BLANK

Date Collected: 05/11/17 16:30
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-6

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			05/30/17 23:16	1
Fluoride	ND		1.00	0.0100	mg/L			05/30/17 23:16	1
Sulfate	**0.403**	**J B**	5.00	0.0300	mg/L			05/30/17 23:16	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		06/13/17 12:33	06/14/17 13:41	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00108**	**J B**	0.00200	0.0000213	mg/L		06/14/17 13:36	06/21/17 21:22	1
Arsenic	**0.000244**	**J**	0.00500	0.000118	mg/L		06/14/17 13:36	06/21/17 21:22	1
Barium	ND		0.200	0.000270	mg/L		06/14/17 13:36	06/21/17 21:22	1
Beryllium	ND		0.00200	0.000102	mg/L		06/14/17 13:36	06/21/17 21:22	1
Boron	**0.00416**	**J B**	1.00	0.00339	mg/L		06/14/17 13:36	06/21/17 21:22	1
Cadmium	ND		0.00100	0.000152	mg/L		06/14/17 13:36	06/21/17 21:22	1
Calcium	ND		1.00	0.0412	mg/L		06/14/17 13:36	06/21/17 21:22	1
Chromium	ND		0.00300	0.000339	mg/L		06/14/17 13:36	06/21/17 21:22	1
Cobalt	ND		0.00500	0.0000218	mg/L		06/14/17 13:36	06/21/17 21:22	1
Lead	ND		0.00500	0.0000675	mg/L		06/14/17 13:36	06/21/17 21:22	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/14/17 13:36	06/21/17 21:22	1
Selenium	ND		0.0100	0.000348	mg/L		06/14/17 13:36	06/21/17 21:22	1
Thallium	ND		0.00100	0.0000360	mg/L		06/14/17 13:36	06/21/17 21:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 17:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.15**		0.100	0.100	SU			05/17/17 17:21	1
Temperature	**22.6**		0.100	0.100	Degrees C			05/17/17 17:21	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/18/17 17:49	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	-0.0292	U	0.0231	0.0232	1.00	0.0965	pCi/L	05/17/17 08:54	06/08/17 05:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:57*	*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	0.169	U	0.426	0.426	1.00	0.728	pCi/L	05/17/17 09:10	05/31/17 14:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:42*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 05/11/17 16:30
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-6

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	*74.4*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:42*	*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	0.426	0.427	5.00	0.728	pCi/L		06/12/17 11:55	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-433786/3
Matrix: Water
Analysis Batch: 433786

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4061	J	3.00	0.200	mg/L			05/30/17 22:08	1
Fluoride	ND		1.00	0.0100	mg/L			05/30/17 22:08	1
Sulfate	0.4052	J	5.00	0.0300	mg/L			05/30/17 22:08	1

Lab Sample ID: LCS 490-433786/4
Matrix: Water
Analysis Batch: 433786

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	10.21		mg/L		102	80 - 120
Fluoride	1.00	0.9347	J	mg/L		93	80 - 120
Sulfate	10.0	9.908		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-433786/5
Matrix: Water
Analysis Batch: 433786

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	10.21		mg/L		102	80 - 120	0	20
Fluoride	1.00	0.9587	J	mg/L		96	80 - 120	3	20
Sulfate	10.0	9.901		mg/L		99	80 - 120	0	20

Lab Sample ID: 490-128490-6 MS
Matrix: Water
Analysis Batch: 433786

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	1.951	J	mg/L		98	80 - 120
Fluoride	ND		0.200	0.2291	J	mg/L		115	80 - 120
Sulfate	0.403	J B	2.00	2.129	J	mg/L		86	80 - 120

Lab Sample ID: 490-128490-6 MSD
Matrix: Water
Analysis Batch: 433786

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	1.912	J	mg/L		96	80 - 120	2	20
Fluoride	ND		0.200	0.2274	J	mg/L		114	80 - 120	1	20
Sulfate	0.403	J B	2.00	2.137	J	mg/L		87	80 - 120	0	20

Lab Sample ID: MB 490-433980/3
Matrix: Water
Analysis Batch: 433980

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2048	J	3.00	0.200	mg/L			05/31/17 16:21	1
Fluoride	ND		1.00	0.0100	mg/L			05/31/17 16:21	1
Sulfate	ND		5.00	0.0300	mg/L			05/31/17 16:21	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-433980/4
Matrix: Water
Analysis Batch: 433980

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	10.27		mg/L		103	80 - 120
Fluoride	1.00	1.046		mg/L		105	80 - 120
Sulfate	10.0	10.38		mg/L		104	80 - 120

Lab Sample ID: LCSD 490-433980/5
Matrix: Water
Analysis Batch: 433980

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	10.51		mg/L		105	80 - 120	2	20
Fluoride	1.00	1.078		mg/L		108	80 - 120	3	20
Sulfate	10.0	10.44		mg/L		104	80 - 120	1	20

Lab Sample ID: 490-129545-B-4 MS
Matrix: Water
Analysis Batch: 433980

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	190	E B	2.00	168.2	E 4	mg/L		-1097	80 - 120
Fluoride	0.134	J F1	0.200	0.2563	J F1	mg/L		61	80 - 120
Sulfate	123	E	2.00	110.0	E 4	mg/L		-667	80 - 120

Lab Sample ID: 490-129545-B-4 MSD
Matrix: Water
Analysis Batch: 433980

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	190	E B	2.00	170.0	E 4	mg/L		-1005	80 - 120	1	20
Fluoride	0.134	J F1	0.200	0.2617	J F1	mg/L		64	80 - 120	2	20
Sulfate	123	E	2.00	111.4	E 4	mg/L		-600	80 - 120	1	20

Lab Sample ID: MB 490-434477/3
Matrix: Water
Analysis Batch: 434477

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2050	J	3.00	0.200	mg/L			06/01/17 14:28	1
Fluoride	ND		1.00	0.0100	mg/L			06/01/17 14:28	1
Sulfate	0.4050	J	5.00	0.0300	mg/L			06/01/17 14:28	1

Lab Sample ID: LCS 490-434477/4
Matrix: Water
Analysis Batch: 434477

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	10.06		mg/L		101	80 - 120
Fluoride	1.00	0.9548	J	mg/L		95	80 - 120
Sulfate	10.0	10.46		mg/L		105	80 - 120

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 490-434477/5
Matrix: Water
Analysis Batch: 434477

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	1.069		mg/L		107	80 - 120	11	20
Sulfate			10.0	10.93		mg/L		109	80 - 120	4	20

Lab Sample ID: 490-129545-B-4 MS
Matrix: Water
Analysis Batch: 434477

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	185	B	20.0	206.6	4	mg/L		110	80 - 120
Fluoride	0.549	J F1 F2	2.00	2.601	J	mg/L		103	80 - 120
Sulfate	119	B	20.0	140.0	4	mg/L		106	80 - 120

Lab Sample ID: 490-129545-B-4 MSD
Matrix: Water
Analysis Batch: 434477

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	185	B	20.0	204.7	4	mg/L		101	80 - 120	1	20
Fluoride	0.549	J F1 F2	2.00	2.056	J F1 F2	mg/L		75	80 - 120	23	20
Sulfate	119	B	20.0	138.0	4	mg/L		95	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-214041/1-A
Matrix: Water
Analysis Batch: 214225

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 214041

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/13/17 12:33	06/14/17 11:48	1

Lab Sample ID: LCS 180-214041/2-A
Matrix: Water
Analysis Batch: 214225

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 214041

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium			1.00	1.019		mg/L		102	80 - 120

Lab Sample ID: 180-66643-E-5-B MS
Matrix: Water
Analysis Batch: 214225

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 214041

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0393	J	1.00	1.116		mg/L		108	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 180-66643-E-5-C MSD
Matrix: Water
Analysis Batch: 214225

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 214041

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0393	J	1.00	1.108		mg/L		107	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-214067/1-A
Matrix: Water
Analysis Batch: 214571

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 214067

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		06/13/17 14:36	06/16/17 18:27	1
Arsenic	ND		0.00500	0.000118	mg/L		06/13/17 14:36	06/16/17 18:27	1
Barium	ND		0.200	0.000270	mg/L		06/13/17 14:36	06/16/17 18:27	1
Beryllium	ND		0.00200	0.000102	mg/L		06/13/17 14:36	06/16/17 18:27	1
Boron	ND		1.00	0.00339	mg/L		06/13/17 14:36	06/16/17 18:27	1
Cadmium	ND		0.00100	0.000152	mg/L		06/13/17 14:36	06/16/17 18:27	1
Calcium	ND		1.00	0.0412	mg/L		06/13/17 14:36	06/16/17 18:27	1
Chromium	ND		0.00300	0.000339	mg/L		06/13/17 14:36	06/16/17 18:27	1
Cobalt	0.00005200	J	0.00500	0.0000218	mg/L		06/13/17 14:36	06/16/17 18:27	1
Lead	ND		0.00500	0.0000675	mg/L		06/13/17 14:36	06/16/17 18:27	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/13/17 14:36	06/16/17 18:27	1
Selenium	ND		0.0100	0.000348	mg/L		06/13/17 14:36	06/16/17 18:27	1
Thallium	ND		0.00100	0.0000360	mg/L		06/13/17 14:36	06/16/17 18:27	1

Lab Sample ID: LCS 180-214067/2-A
Matrix: Water
Analysis Batch: 214571

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 214067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4724		mg/L		94	80 - 120
Arsenic	0.0400	0.03931		mg/L		98	80 - 120
Barium	2.00	1.887		mg/L		94	80 - 120
Beryllium	0.0500	0.04682		mg/L		94	80 - 120
Boron	1.00	1.059		mg/L		106	80 - 120
Cadmium	0.0500	0.04806		mg/L		96	80 - 120
Calcium	50.0	44.23		mg/L		88	80 - 120
Chromium	0.200	0.1904		mg/L		95	80 - 120
Cobalt	0.500	0.4929		mg/L		99	80 - 120
Lead	0.0200	0.02007		mg/L		100	80 - 120
Molybdenum	1.00	1.019		mg/L		102	80 - 120
Selenium	0.0100	0.008399	J	mg/L		84	80 - 120
Thallium	0.0500	0.04912		mg/L		98	80 - 120

Lab Sample ID: MB 180-214210/1-A
Matrix: Water
Analysis Batch: 215111

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 214210

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001000	J	0.00200	0.0000213	mg/L		06/14/17 13:36	06/21/17 19:14	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-214210/1-A
Matrix: Water
Analysis Batch: 215111

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 214210

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00500	0.000118	mg/L		06/14/17 13:36	06/21/17 19:14	1
Barium	ND		0.200	0.000270	mg/L		06/14/17 13:36	06/21/17 19:14	1
Beryllium	ND		0.00200	0.000102	mg/L		06/14/17 13:36	06/21/17 19:14	1
Boron	0.003459	J	1.00	0.00339	mg/L		06/14/17 13:36	06/21/17 19:14	1
Cadmium	ND		0.00100	0.000152	mg/L		06/14/17 13:36	06/21/17 19:14	1
Calcium	ND		1.00	0.0412	mg/L		06/14/17 13:36	06/21/17 19:14	1
Chromium	ND		0.00300	0.000339	mg/L		06/14/17 13:36	06/21/17 19:14	1
Cobalt	ND		0.00500	0.0000218	mg/L		06/14/17 13:36	06/21/17 19:14	1
Lead	ND		0.00500	0.0000675	mg/L		06/14/17 13:36	06/21/17 19:14	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/14/17 13:36	06/21/17 19:14	1
Selenium	0.0003480	J	0.0100	0.000348	mg/L		06/14/17 13:36	06/21/17 19:14	1
Thallium	ND		0.00100	0.0000360	mg/L		06/14/17 13:36	06/21/17 19:14	1

Lab Sample ID: LCS 180-214210/2-A
Matrix: Water
Analysis Batch: 215111

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 214210

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5136		mg/L		103	80 - 120
Arsenic	0.0400	0.04055		mg/L		101	80 - 120
Barium	2.00	2.042		mg/L		102	80 - 120
Beryllium	0.0500	0.05410		mg/L		108	80 - 120
Boron	1.00	1.098		mg/L		110	80 - 120
Cadmium	0.0500	0.05160		mg/L		103	80 - 120
Calcium	50.0	49.24		mg/L		98	80 - 120
Chromium	0.200	0.1959		mg/L		98	80 - 120
Cobalt	0.500	0.4904		mg/L		98	80 - 120
Lead	0.0200	0.02054		mg/L		103	80 - 120
Molybdenum	1.00	1.008		mg/L		101	80 - 120
Selenium	0.0100	0.01103		mg/L		110	80 - 120
Thallium	0.0500	0.04941		mg/L		99	80 - 120

Lab Sample ID: 180-66885-F-1-B MS
Matrix: Water
Analysis Batch: 215111

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 214210

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00120	J B	0.500	0.4945		mg/L		99	75 - 125
Arsenic	0.000311	J	0.0400	0.03929		mg/L		97	75 - 125
Barium	ND		2.00	2.006		mg/L		100	75 - 125
Beryllium	ND		0.0500	0.05439		mg/L		109	75 - 125
Boron	ND		1.00	1.110		mg/L		111	75 - 125
Cadmium	ND		0.0500	0.05068		mg/L		101	75 - 125
Calcium	ND		50.0	48.69		mg/L		97	75 - 125
Chromium	ND		0.200	0.1898		mg/L		95	75 - 125
Cobalt	ND		0.500	0.4792		mg/L		96	75 - 125
Lead	ND		0.0200	0.02088		mg/L		104	75 - 125
Molybdenum	ND		1.00	0.9868		mg/L		99	75 - 125
Selenium	ND		0.0100	0.01017		mg/L		102	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-66885-F-1-B MS
Matrix: Water
Analysis Batch: 215111

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 214210

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	ND		0.0500	0.05014		mg/L		100	75 - 125

Lab Sample ID: 180-66885-F-1-C MSD
Matrix: Water
Analysis Batch: 215111

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 214210

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00120	J B	0.500	0.5121		mg/L		102	75 - 125	3	20
Arsenic	0.000311	J	0.0400	0.04020		mg/L		100	75 - 125	2	20
Barium	ND		2.00	2.032		mg/L		102	75 - 125	1	20
Beryllium	ND		0.0500	0.05593		mg/L		112	75 - 125	3	20
Boron	ND		1.00	1.096		mg/L		110	75 - 125	1	20
Cadmium	ND		0.0500	0.05091		mg/L		102	75 - 125	0	20
Calcium	ND		50.0	48.25		mg/L		97	75 - 125	1	20
Chromium	ND		0.200	0.1883		mg/L		94	75 - 125	1	20
Cobalt	ND		0.500	0.4816		mg/L		96	75 - 125	0	20
Lead	ND		0.0200	0.02215		mg/L		111	75 - 125	6	20
Molybdenum	ND		1.00	1.008		mg/L		101	75 - 125	2	20
Selenium	ND		0.0100	0.009356	J	mg/L		94	75 - 125	8	20
Thallium	ND		0.0500	0.05264		mg/L		105	75 - 125	5	20

Lab Sample ID: 180-66708-B-6-H MS
Matrix: Water
Analysis Batch: 214571

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 214067

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000266	J	0.500	0.4618		mg/L		92	75 - 125
Arsenic	0.000432	J	0.0400	0.03628		mg/L		90	75 - 125
Barium	0.0143	J	2.00	1.829		mg/L		91	75 - 125
Beryllium	ND		0.0500	0.04779		mg/L		96	75 - 125
Boron	0.0157	J	1.00	1.133		mg/L		112	75 - 125
Cadmium	ND		0.0500	0.04937		mg/L		99	75 - 125
Calcium	13.5		50.0	57.81		mg/L		89	75 - 125
Chromium	ND		0.200	0.1920		mg/L		96	75 - 125
Cobalt	0.000109	J B	0.500	0.4712		mg/L		94	75 - 125
Lead	ND		0.0200	0.01974		mg/L		99	75 - 125
Molybdenum	ND		1.00	0.9797		mg/L		98	75 - 125
Selenium	0.000355	J F1 F2	0.0100	0.008926	J	mg/L		86	75 - 125
Thallium	ND		0.0500	0.04738		mg/L		95	75 - 125

Lab Sample ID: 180-66708-B-6-I MSD
Matrix: Water
Analysis Batch: 214571

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 214067

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000266	J	0.500	0.4517		mg/L		90	75 - 125	2	20
Arsenic	0.000432	J	0.0400	0.03589		mg/L		89	75 - 125	1	20
Barium	0.0143	J	2.00	1.891		mg/L		94	75 - 125	3	20
Beryllium	ND		0.0500	0.04793		mg/L		96	75 - 125	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-66708-B-6-I MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 214571 — **Prep Batch: 214067**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.0157	J	1.00	1.132		mg/L		112	75 - 125	0	20
Cadmium	ND		0.0500	0.04847		mg/L		97	75 - 125	2	20
Calcium	13.5		50.0	58.39		mg/L		90	75 - 125	1	20
Chromium	ND		0.200	0.1701		mg/L		85	75 - 125	12	20
Cobalt	0.000109	J B	0.500	0.4431		mg/L		89	75 - 125	6	20
Lead	ND		0.0200	0.02075		mg/L		104	75 - 125	5	20
Molybdenum	ND		1.00	0.9567		mg/L		96	75 - 125	2	20
Selenium	0.000355	J F1 F2	0.0100	0.006713	J F1 F2	mg/L		64	75 - 125	28	20
Thallium	ND		0.0500	0.05020		mg/L		100	75 - 125	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-430332/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 430979 — **Prep Batch: 430332**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		05/16/17 11:31	05/17/17 16:57	1

Lab Sample ID: LCS 490-430332/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 430979 — **Prep Batch: 430332**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.9935		ug/L		99	80 - 120

Lab Sample ID: 490-128536-F-4-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 430979 — **Prep Batch: 430332**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.027		ug/L		103	75 - 125

Lab Sample ID: 490-128536-F-4-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 430979 — **Prep Batch: 430332**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.033		ug/L		103	75 - 125	1	20

Method: 9040C - pH

Lab Sample ID: LCS 490-430840/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 430840

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.040		SU		101	98 - 103

Method: 9040C - pH (Continued)

Lab Sample ID: 490-128490-1 DU
Matrix: Water
Analysis Batch: 430840

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.25			7.250		SU				0	20
Temperature	22.6			22.60		Degrees C				0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-431132/1
Matrix: Water
Analysis Batch: 431132

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			05/18/17 17:49	1

Lab Sample ID: LCS 490-431132/2
Matrix: Water
Analysis Batch: 431132

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	100.0		mg/L		100	90 - 110		

Lab Sample ID: 490-128444-C-1 DU
Matrix: Water
Analysis Batch: 431132

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	23500			23700		mg/L				0.8	20

Lab Sample ID: 490-128551-J-1 DU
Matrix: Water
Analysis Batch: 431132

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	113			112.0		mg/L				0.9	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-309087/1-A
Matrix: Water
Analysis Batch: 312378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309087

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07246	U	0.0788	0.0791	1.00	0.125	pCi/L	05/17/17 08:54	06/08/17 05:54	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*05/17/17 08:54*	*06/08/17 05:54*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-309087/2-A
Matrix: Water
Analysis Batch: 312378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309087

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.1	12.49		1.33	1.00	0.136	pCi/L	82	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*

Lab Sample ID: LCSD 160-309087/3-A
Matrix: Water
Analysis Batch: 312378

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309087

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			15.1	11.74		1.25	1.00	0.107	pCi/L	77	68 - 137	0.29	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*104*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-309095/1-A
Matrix: Water
Analysis Batch: 311213

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309095

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2219	U	0.302	0.302	1.00	0.504	pCi/L	05/17/17 09:10	05/31/17 14:20	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:20*	*1*
Y Carrier	*75.9*		*40 - 110*	*05/17/17 09:10*	*05/31/17 14:20*	*1*

Lab Sample ID: LCS 160-309095/2-A
Matrix: Water
Analysis Batch: 311213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309095

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			17.8	18.41		1.98	1.00	0.498	pCi/L	103	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*
Y Carrier	*79.6*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-309095/3-A
Matrix: Water
Analysis Batch: 311213

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309095

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			17.8	20.58		2.20	1.00	0.493	pCi/L	115	56 - 140	0.52	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*104*		*40 - 110*
Y Carrier	*74.0*		*40 - 110*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-137872-A-3 DU
Matrix: Water
Analysis Batch: 313033

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	1.41			1.134		0.366	5.00	0.464	pCi/L			0.36	

HPLC/IC

Analysis Batch: 433786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-4	MW-10	Total/NA	Water	9056A	
490-128490-5	DUPE	Total/NA	Water	9056A	
490-128490-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-433786/3	Method Blank	Total/NA	Water	9056A	
LCS 490-433786/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-433786/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-128490-6 MS	FIELD BLANK	Total/NA	Water	9056A	
490-128490-6 MSD	FIELD BLANK	Total/NA	Water	9056A	

Analysis Batch: 433980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	9056A	
490-128490-2	MW-8	Total/NA	Water	9056A	
490-128490-3	MW-9	Total/NA	Water	9056A	
490-128490-4	MW-10	Total/NA	Water	9056A	
MB 490-433980/3	Method Blank	Total/NA	Water	9056A	
LCS 490-433980/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-433980/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-129545-B-4 MS	Matrix Spike	Total/NA	Water	9056A	
490-129545-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 434477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-2	MW-8	Total/NA	Water	9056A	
490-128490-2	MW-8	Total/NA	Water	9056A	
MB 490-434477/3	Method Blank	Total/NA	Water	9056A	
LCS 490-434477/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-434477/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-129545-B-4 MS	Matrix Spike	Total/NA	Water	9056A	
490-129545-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Filtration Batch: 213235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-66708-B-6-H MS	Matrix Spike	Dissolved	Water	Filtration	
180-66708-B-6-I MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 214041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total Recoverable	Water	3005A	
490-128490-2	MW-8	Total Recoverable	Water	3005A	
490-128490-3	MW-9	Total Recoverable	Water	3005A	
490-128490-4	MW-10	Total Recoverable	Water	3005A	
490-128490-5	DUPE	Total Recoverable	Water	3005A	
490-128490-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-214041/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-214041/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-66643-E-5-B MS	Matrix Spike	Dissolved	Water	3005A	
180-66643-E-5-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 214067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total Recoverable	Water	3005A	
MB 180-214067/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-214067/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-66708-B-6-H MS	Matrix Spike	Dissolved	Water	3005A	213235
180-66708-B-6-I MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	213235

Prep Batch: 214210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-2	MW-8	Total Recoverable	Water	3005A	
490-128490-3	MW-9	Total Recoverable	Water	3005A	
490-128490-4	MW-10	Total Recoverable	Water	3005A	
490-128490-5	DUPE	Total Recoverable	Water	3005A	
490-128490-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-214210/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-214210/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-66885-F-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-66885-F-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 214225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total Recoverable	Water	6010C	214041
490-128490-2	MW-8	Total Recoverable	Water	6010C	214041
490-128490-3	MW-9	Total Recoverable	Water	6010C	214041
490-128490-4	MW-10	Total Recoverable	Water	6010C	214041
490-128490-5	DUPE	Total Recoverable	Water	6010C	214041
490-128490-6	FIELD BLANK	Total Recoverable	Water	6010C	214041
MB 180-214041/1-A	Method Blank	Total Recoverable	Water	6010C	214041
LCS 180-214041/2-A	Lab Control Sample	Total Recoverable	Water	6010C	214041
180-66643-E-5-B MS	Matrix Spike	Dissolved	Water	6010C	214041
180-66643-E-5-C MSD	Matrix Spike Duplicate	Dissolved	Water	6010C	214041

Analysis Batch: 214571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total Recoverable	Water	6020A	214067
MB 180-214067/1-A	Method Blank	Total Recoverable	Water	6020A	214067
LCS 180-214067/2-A	Lab Control Sample	Total Recoverable	Water	6020A	214067
180-66708-B-6-H MS	Matrix Spike	Dissolved	Water	6020A	214067
180-66708-B-6-I MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	214067

Analysis Batch: 215111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-2	MW-8	Total Recoverable	Water	6020A	214210
490-128490-3	MW-9	Total Recoverable	Water	6020A	214210
490-128490-4	MW-10	Total Recoverable	Water	6020A	214210
490-128490-5	DUPE	Total Recoverable	Water	6020A	214210
490-128490-6	FIELD BLANK	Total Recoverable	Water	6020A	214210
MB 180-214210/1-A	Method Blank	Total Recoverable	Water	6020A	214210
LCS 180-214210/2-A	Lab Control Sample	Total Recoverable	Water	6020A	214210
180-66885-F-1-B MS	Matrix Spike	Total Recoverable	Water	6020A	214210
180-66885-F-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	214210

Metals (Continued)

Prep Batch: 430332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	7470A	
490-128490-2	MW-8	Total/NA	Water	7470A	
490-128490-3	MW-9	Total/NA	Water	7470A	
490-128490-4	MW-10	Total/NA	Water	7470A	
490-128490-5	DUPE	Total/NA	Water	7470A	
490-128490-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-430332/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-430332/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-128536-F-4-B MS	Matrix Spike	Dissolved	Water	7470A	
490-128536-F-4-C MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	

Analysis Batch: 430979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	7470A	430332
490-128490-2	MW-8	Total/NA	Water	7470A	430332
490-128490-3	MW-9	Total/NA	Water	7470A	430332
490-128490-4	MW-10	Total/NA	Water	7470A	430332
490-128490-5	DUPE	Total/NA	Water	7470A	430332
490-128490-6	FIELD BLANK	Total/NA	Water	7470A	430332
MB 490-430332/1-A	Method Blank	Total/NA	Water	7470A	430332
LCS 490-430332/2-A	Lab Control Sample	Total/NA	Water	7470A	430332
490-128536-F-4-B MS	Matrix Spike	Dissolved	Water	7470A	430332
490-128536-F-4-C MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	430332

General Chemistry

Analysis Batch: 430840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	9040C	
490-128490-2	MW-8	Total/NA	Water	9040C	
490-128490-3	MW-9	Total/NA	Water	9040C	
490-128490-4	MW-10	Total/NA	Water	9040C	
490-128490-5	DUPE	Total/NA	Water	9040C	
490-128490-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-430840/1	Lab Control Sample	Total/NA	Water	9040C	
490-128490-1 DU	MW-7	Total/NA	Water	9040C	

Analysis Batch: 431132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	SM 2540C	
490-128490-2	MW-8	Total/NA	Water	SM 2540C	
490-128490-3	MW-9	Total/NA	Water	SM 2540C	
490-128490-4	MW-10	Total/NA	Water	SM 2540C	
490-128490-5	DUPE	Total/NA	Water	SM 2540C	
490-128490-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-431132/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-431132/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-128444-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-128551-J-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 309087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	PrecSep-21	
490-128490-2	MW-8	Total/NA	Water	PrecSep-21	
490-128490-3	MW-9	Total/NA	Water	PrecSep-21	
490-128490-4	MW-10	Total/NA	Water	PrecSep-21	
490-128490-5	DUPE	Total/NA	Water	PrecSep-21	
490-128490-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-309087/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-309087/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-309087/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 309095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-128490-1	MW-7	Total/NA	Water	PrecSep_0	
490-128490-2	MW-8	Total/NA	Water	PrecSep_0	
490-128490-3	MW-9	Total/NA	Water	PrecSep_0	
490-128490-4	MW-10	Total/NA	Water	PrecSep_0	
490-128490-5	DUPE	Total/NA	Water	PrecSep_0	
490-128490-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-309095/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-309095/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-309095/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-7

Date Collected: 05/11/17 11:20
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-1

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			433980	05/31/17 19:45	T1C	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214041	06/13/17 12:33	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			214225	06/14/17 13:05	RJG	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214067	06/13/17 14:36	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	214571	06/16/17 19:37	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	430332	05/16/17 11:31	CAH	TAL NSH
Total/NA	Analysis	7470A		1			430979	05/17/17 17:28	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430840	05/17/17 17:21	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	431132	05/18/17 17:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			750.33 mL	1.0 g	309087	05/17/17 08:54	LDE	TAL SL
Total/NA	Analysis	903.0		1			312378	06/08/17 05:54	ALD	TAL SL
Total/NA	Prep	PrecSep_0			750.33 mL	1.0 g	309095	05/17/17 09:10	LDE	TAL SL
Total/NA	Analysis	904.0		1			311213	05/31/17 14:20	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313033	06/12/17 11:55	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 05/11/17 13:05
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-2

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			433980	05/31/17 19:59	T1C	TAL NSH
Total/NA	Analysis	9056A		5			434477	06/01/17 15:09	T1C	TAL NSH
Total/NA	Analysis	9056A		50			434477	06/01/17 15:23	T1C	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214041	06/13/17 12:33	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			214225	06/14/17 13:10	RJG	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214210	06/14/17 13:36	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1			215111	06/21/17 21:03	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	430332	05/16/17 11:31	CAH	TAL NSH
Total/NA	Analysis	7470A		1			430979	05/17/17 17:33	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430840	05/17/17 17:21	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	431132	05/18/17 17:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			750.67 mL	1.0 g	309087	05/17/17 08:54	LDE	TAL SL
Total/NA	Analysis	903.0		1			312380	06/08/17 05:55	ALD	TAL SL
Total/NA	Prep	PrecSep_0			750.67 mL	1.0 g	309095	05/17/17 09:10	LDE	TAL SL
Total/NA	Analysis	904.0		1			311213	05/31/17 14:20	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313033	06/12/17 11:55	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 05/11/17 14:30
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-3

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			433980	05/31/17 20:12	T1C	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214041	06/13/17 12:33	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			214225	06/14/17 13:16	RJG	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214210	06/14/17 13:36	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1			215111	06/21/17 21:08	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	430332	05/16/17 11:31	CAH	TAL NSH
Total/NA	Analysis	7470A		1			430979	05/17/17 17:31	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430840	05/17/17 17:21	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	431132	05/18/17 17:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			749.28 mL	1.0 g	309087	05/17/17 08:54	LDE	TAL SL
Total/NA	Analysis	903.0		1			312380	06/08/17 05:55	ALD	TAL SL
Total/NA	Prep	PrecSep_0			749.28 mL	1.0 g	309095	05/17/17 09:10	LDE	TAL SL
Total/NA	Analysis	904.0		1			311334	05/31/17 14:42	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313033	06/12/17 11:55	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 05/11/17 16:10
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-4

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			433786	05/30/17 22:48	T1C	TAL NSH
Total/NA	Analysis	9056A		5			433980	05/31/17 17:02	T1C	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214041	06/13/17 12:33	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			214225	06/14/17 13:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214210	06/14/17 13:36	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1			215111	06/21/17 21:13	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	430332	05/16/17 11:31	CAH	TAL NSH
Total/NA	Analysis	7470A		1			430979	05/17/17 17:36	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430840	05/17/17 17:21	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	431132	05/18/17 17:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			750.26 mL	1.0 g	309087	05/17/17 08:54	LDE	TAL SL
Total/NA	Analysis	903.0		1			312379	06/08/17 05:56	ALD	TAL SL
Total/NA	Prep	PrecSep_0			750.26 mL	1.0 g	309095	05/17/17 09:10	LDE	TAL SL
Total/NA	Analysis	904.0		1			311334	05/31/17 14:42	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313033	06/12/17 11:55	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 05/11/17 14:55
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-5

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			433786	05/30/17 23:02	T1C	TAL NSH

Client Sample ID: DUPE

Date Collected: 05/11/17 14:55
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-5

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			50.0 mL	50.0 mL	214041	06/13/17 12:33	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			214225	06/14/17 13:36	RJG	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214210	06/14/17 13:36	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1			215111	06/21/17 21:17	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	430332	05/16/17 11:31	CAH	TAL NSH
Total/NA	Analysis	7470A		1			430979	05/17/17 17:38	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430840	05/17/17 17:21	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	431132	05/18/17 17:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			749.70 mL	1.0 g	309087	05/17/17 08:54	LDE	TAL SL
Total/NA	Analysis	903.0		1			312379	06/08/17 05:57	ALD	TAL SL
Total/NA	Prep	PrecSep_0			749.70 mL	1.0 g	309095	05/17/17 09:10	LDE	TAL SL
Total/NA	Analysis	904.0		1			311334	05/31/17 14:42	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313033	06/12/17 11:55	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 05/11/17 16:30
Date Received: 05/13/17 17:02

Lab Sample ID: 490-128490-6

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			433786	05/30/17 23:16	T1C	TAL NSH
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214041	06/13/17 12:33	JVH	TAL PIT
Total Recoverable	Analysis	6010C		1			214225	06/14/17 13:41	RJG	TAL PIT
Total Recoverable	Prep	3005A			50.0 mL	50.0 mL	214210	06/14/17 13:36	JVH	TAL PIT
Total Recoverable	Analysis	6020A		1			215111	06/21/17 21:22	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	430332	05/16/17 11:31	CAH	TAL NSH
Total/NA	Analysis	7470A		1			430979	05/17/17 17:41	CAH	TAL NSH
Total/NA	Analysis	9040C		1			430840	05/17/17 17:21	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	431132	05/18/17 17:49	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			750.61 mL	1.0 g	309087	05/17/17 08:54	LDE	TAL SL
Total/NA	Analysis	903.0		1			312379	06/08/17 05:57	ALD	TAL SL
Total/NA	Prep	PrecSep_0			750.61 mL	1.0 g	309095	05/17/17 09:10	LDE	TAL SL
Total/NA	Analysis	904.0		1			311334	05/31/17 14:42	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			313033	06/12/17 11:55	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: Reid/HMPL Impoundment GW CCR-Round 6

TestAmerica Job ID: 490-128490-1
SDG: Reid/HMPL Impoundment

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: Reid/HMPL Impoundment GW CCR-Round 6

TestAmerica Job ID: 490-128490-1
SDG: Reid/HMPL Impoundment

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	06-30-17

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
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	06-30-17
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-18
Louisiana	NELAP	6	04041	06-30-17
New Hampshire	NELAP	1	2030	04-04-18
New Jersey	NELAP	2	PA005	06-30-17
New York	NELAP	2	11182	03-31-18
North Carolina (WW/SW)	State Program	4	434	12-31-17
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	10-31-17
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-17 *
Virginia	NELAP	3	460189	09-14-17
West Virginia DEP	State Program	3	142	01-31-18
Wisconsin	State Program	5	998027800	08-31-17

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	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 6

TestAmerica Job ID: 490-128490-1
SDG: Reid/HMPL Impoundment

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
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17 *
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-128490 Chain of Custody

Cooler Received/Opened On 05-13-2017 @ 10:50

Time Samples Removed From Cooler 1254 Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 6286 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_160656838_____ pH Strip Lot N/A Chlorine Strip Lot N/A

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: 1F 1B

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) AL

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) AT

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) _____

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) _____

I certify that I attached a label with the unique LIMS number to each container (initial) _____

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
128490

COOLER RECEIPT FORM

Cooler Received/Opened On 05-13-2017 @ 10:50

Time Samples Removed From Cooler 1240 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 6347 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_160656838_____ pH Strip Lot NA Chlorine Strip Lot NA

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: 1F 1B

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) AC

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) AC

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) _____

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) _____

I certify that I attached a label with the unique LIMS number to each container (initial) _____

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

6/23/2017

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: 5/12/2017**	COC No: 490-65879-18050.1
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: Reid/HMPL Impoundment GW CCR-Round 6	☐ 1 week			
Site: Reid/HMPL Impoundment	☐ 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	6010B, 7470A	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-7	5/11/17	1120	G	Water	6	N	N	x	x	x	x	
MW-8	5/11/17	1305	G	Water	6	N	N	x	x	x	x	
MW-9	5/11/17	1430	G	Water	6	N	N	x	x	x	x	
MW-10	5/11/17	1610	G	Water	6	N	N	x	x	x	x	
DUPE	5/11/17	1455	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	5/11/17	1630	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Loc: 490
128490

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: Mugsy Dick	Company: BREC	Date/Time: 5/12/2017 1245	Received by:	Company: TAN	Date/Time: 5-13-17 1050
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record



490-128490 Chain of Custody

testAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne		COC No: 490-57386.1
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 #: 490-128490-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/13/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Reid/HMPL Impoundment GW CCR-Round 6	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-7 (490-128490-1)	5/11/17	11:20 Central		Water			X	X	X	2	Historical Review required
MW-8 (490-128490-2)	5/11/17	13:05 Central		Water			X	X	X	2	Historical Review required
MW-9 (490-128490-3)	5/11/17	14:30 Central		Water			X	X	X	2	Historical Review required
MW-10 (490-128490-4)	5/11/17	16:10 Central		Water			X	X	X	2	Historical Review required
DUPE (490-128490-5)	5/11/17	14:55 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-128490-6)	5/11/17	16:30 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 *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: 5.15.17	Company: TAN	Received by:	Date/Time: 5/16/17 0920	Company
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:

6/23/2017

TAL-0090(1014)

ORIGIN ID:ALOA (319) 277-2401
BRIAN GRAETTINGER
TESTAMERICA
704 ENTERPRISE DR.

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE: 16MAY17
ACTWGT: 44.90 LB
CAD: 0068114/CAFE3011

BILL THIRD PARTY

TO SAMPLE RECEIVING
TEST AMERICA
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238

(412) 963-2439 REF:
INV: PO: DEPT:

540C1/8734/727F

FedEx Express

J161216101001uv

WED - 17 MAY 3:00P
STANDARD OVERNIGHT

TRK# 0201 7150 1976 9285

NA AGCA

15238
PA-US PIT

12 EXP 03

Uncorrected temp 2.3 °C
Thermometer ID 12

CF 0 Initials TJ

PT-WI-SR-001 effective 7/26/13

490-128490 Waybill

490-128490 Chain of Custody

Rec Thermometer Dry TAP
5/18/17 845

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-128490-1
SDG Number: Reid/HMPL Impoundment

Login Number: 128490
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.	N/A	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-128490-1
SDG Number: Reid/HMPL Impoundment

Login Number: 128490
List Number: 3
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh
List Creation: 05/18/17 11:50 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.	False	
COC is filled out in ink and legible.	False	
COC is filled out with all pertinent information.	False	
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: 490-128490-1
SDG Number: Reid/HMPL Impoundment

Login Number: 128490
List Number: 2
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 05/16/17 11:55 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	18
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: Reid/HMPL Impoundment GW CCR-Round 6

TestAmerica Job ID: 490-128490-1
SDG: Reid/HMPL Impoundment

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-128490-1	MW-7	94.4
490-128490-2	MW-8	91.4
490-128490-3	MW-9	89.4
490-128490-4	MW-10	85.8
490-128490-5	DUPE	90.6
490-128490-6	FIELD BLANK	95.0
LCS 160-309087/2-A	Lab Control Sample	105
LCSD 160-309087/3-A	Lab Control Sample Dup	104
MB 160-309087/1-A	Method Blank	102

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-128490-1	MW-7	94.4	76.3
490-128490-2	MW-8	91.4	80.0
490-128490-3	MW-9	89.4	71.4
490-128490-4	MW-10	85.8	71.0
490-128490-5	DUPE	90.6	75.5
490-128490-6	FIELD BLANK	95.0	74.4
LCS 160-309095/2-A	Lab Control Sample	105	79.6
LCSD 160-309095/3-A	Lab Control Sample Dup	104	74.0
MB 160-309095/1-A	Method Blank	102	75.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-135388-1
TestAmerica Sample Delivery Group: Reid/HMPL Impoundment
Client Project/Site: Reid/HMPL Impoundment GW CCR-Round 7
Sampling Event: Big Rivers CCR/SemiAnnual GW

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
9/27/2017 3:09:49 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-135388-1	MW-7	Water	08/23/17 10:45	08/25/17 09:50
490-135388-2	MW-8	Water	08/23/17 13:05	08/25/17 09:50
490-135388-3	MW-9	Water	08/23/17 14:25	08/25/17 09:50
490-135388-4	MW-10	Water	08/23/17 15:35	08/25/17 09:50
490-135388-5	DUPE	Water	08/23/17 11:20	08/25/17 09:50
490-135388-6	FIELD BLANK	Water	08/23/17 16:43	08/25/17 09:50

Job ID: 490-135388-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-135388-1

Comments
No additional comments.

Receipt
The samples were received on 8/25/2017 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 1.8° C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-456390 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-8 (490-135388-2) and MW-10 (490-135388-4). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The method blank for analytical batch 490-456445 contained chloride and/or sulfate above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because the results were greater than 10X the value found in the method blank.

Method(s) 9056, 9056A: The following samples was diluted due to the nature of the sample matrix: MW-7 (490-135388-1), MW-8 (490-135388-2), MW-10 (490-135388-4) and DUPE (490-135388-5). 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.

Metals
Method(s) 7470A: The method blank for preparation batch 490-456043 and analytical batch 490-456209 contained Mercury 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.

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.

Narrative

Job Narrative
490-135388-2

Comments
No additional comments.

Receipt
The samples were received on 8/25/2017 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 1.8° C.

RAD
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.
F1	MS and/or MSD Recovery is outside acceptance limits.
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
F2	MS/MSD RPD exceeds control limits
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-7

Date Collected: 08/23/17 10:45
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.99	F1 B	3.00	0.200	mg/L			08/29/17 18:37	1
Fluoride	0.279	J F1	1.00	0.0100	mg/L			08/29/17 18:37	1
Sulfate	22.3	B	10.0	0.0600	mg/L			08/30/17 08:37	2

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		09/01/17 08:07	09/05/17 14:39	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000202	J B	0.00200	0.0000213	mg/L		09/05/17 08:41	09/06/17 00:53	1
Arsenic	0.000882	J	0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 00:53	1
Barium	0.0597	J	0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 00:53	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 00:53	1
Boron	0.286	J B	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 00:53	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 00:53	1
Calcium	45.1		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 00:53	1
Chromium	ND		0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 00:53	1
Cobalt	0.000230	J	0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 00:53	1
Lead	ND		0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 00:53	1
Molybdenum	0.00946	J	0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 00:53	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 00:53	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 00:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.135	J B	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 21:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.25		0.100	0.100	SU			09/02/17 20:51	1
Temperature	21.1		0.100	0.100	Degrees C			09/02/17 20:51	1
Total Dissolved Solids	290		10.0	7.00	mg/L			08/27/17 21:42	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	0.272		0.0947	0.0978	1.00	0.0705	pCi/L	08/31/17 09:42	09/22/17 08:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*08/31/17 09:42*	*09/22/17 08:20*	*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	0.523		0.243	0.248	1.00	0.350	pCi/L	08/31/17 10:33	09/07/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:49*	*1*

Client Sample ID: MW-7
Date Collected: 08/23/17 10:45
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-1
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	08/31/17 10:33	09/07/17 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	0.795		0.261	0.267	5.00	0.350	pCi/L		09/25/17 10:38	1

Client Sample ID: MW-8

Date Collected: 08/23/17 13:05
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47.1	B	15.0	1.00	mg/L			08/30/17 08:48	5
Fluoride	0.790	J	1.00	0.0100	mg/L			08/29/17 19:42	1
Sulfate	1110		500	3.00	mg/L			08/29/17 19:52	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0367	J	0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 14:44	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		09/05/17 08:41	09/06/17 01:11	1
Arsenic	ND		0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 01:11	1
Barium	0.0177	J	0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 01:11	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 01:11	1
Boron	1.37	B	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 01:11	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 01:11	1
Calcium	253		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 01:11	1
Chromium	ND		0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 01:11	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 01:11	1
Lead	ND		0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 01:11	1
Molybdenum	0.0175		0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 01:11	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 01:11	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 01:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.128	J B	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 21:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.17		0.100	0.100	SU			09/02/17 20:51	1
Temperature	20.9		0.100	0.100	Degrees C			09/02/17 20:51	1
Total Dissolved Solids	2090		20.0	14.0	mg/L			08/27/17 21:42	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	0.382		0.111	0.116	1.00	0.0989	pCi/L	08/31/17 09:42	09/22/17 08:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*08/31/17 09:42*	*09/22/17 08:20*	*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	1.10		0.350	0.364	1.00	0.465	pCi/L	08/31/17 10:33	09/07/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:49*	*1*

Client Sample ID: MW-8
Date Collected: 08/23/17 13:05
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*68.4*		*40 - 110*	*08/31/17 10:33*	*09/07/17 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	**1.48**		0.367	0.382	5.00	0.465	pCi/L		09/25/17 10:38	1

Client Sample ID: MW-9

Date Collected: 08/23/17 14:25
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.40	B	3.00	0.200	mg/L			08/29/17 20:03	1
Fluoride	0.203	J	1.00	0.0100	mg/L			08/29/17 20:03	1
Sulfate	1.11	J	5.00	0.0300	mg/L			08/29/17 20:03	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		09/01/17 08:07	09/05/17 15:00	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000158	J B	0.00200	0.0000213	mg/L		09/05/17 08:41	09/06/17 01:15	1
Arsenic	0.000169	J	0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 01:15	1
Barium	0.253		0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 01:15	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 01:15	1
Boron	0.101	J B	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 01:15	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 01:15	1
Calcium	60.8		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 01:15	1
Chromium	ND		0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 01:15	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 01:15	1
Lead	ND		0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 01:15	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 01:15	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 01:15	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 01:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.119	J B	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 21:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.06		0.100	0.100	SU			09/02/17 20:51	1
Temperature	20.9		0.100	0.100	Degrees C			09/02/17 20:51	1
Total Dissolved Solids	303		10.0	7.00	mg/L			08/27/17 21:42	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	0.517		0.124	0.132	1.00	0.0672	pCi/L	08/31/17 09:42	09/22/17 08:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*08/31/17 09:42*	*09/22/17 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	0.759		0.269	0.278	1.00	0.368	pCi/L	08/31/17 10:33	09/07/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:49*	*1*

Client Sample ID: MW-9
Date Collected: 08/23/17 14:25
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-3
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	86.7		40 - 110	08/31/17 10:33	09/07/17 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	1.28		0.296	0.308	5.00	0.368	pCi/L		09/25/17 10:38	1

Client Sample ID: MW-10

Date Collected: 08/23/17 15:35
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.3	B	15.0	1.00	mg/L			08/29/17 20:35	5
Fluoride	0.470	J	1.00	0.0100	mg/L			08/29/17 20:25	1
Sulfate	177	B	100	0.600	mg/L			08/30/17 08:58	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.204		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 15:05	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000990	J B	0.00200	0.0000213	mg/L		09/05/17 08:41	09/06/17 01:20	1
Arsenic	0.00431	J	0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 01:20	1
Barium	0.121	J	0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 01:20	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 01:20	1
Boron	0.560	J B	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 01:20	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 01:20	1
Calcium	33.7		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 01:20	1
Chromium	0.000340	J	0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 01:20	1
Cobalt	0.0000530	J	0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 01:20	1
Lead	ND		0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 01:20	1
Molybdenum	0.00374	J	0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 01:20	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 01:20	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 01:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.122	J B	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 22:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.01		0.100	0.100	SU			09/02/17 20:51	1
Temperature	20.8		0.100	0.100	Degrees C			09/02/17 20:51	1
Total Dissolved Solids	758		10.0	7.00	mg/L			08/27/17 21:42	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		0.0734	0.0749	1.00	0.0740	pCi/L	08/31/17 09:42	09/22/17 14:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*08/31/17 09:42*	*09/22/17 14:21*	*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	0.453		0.237	0.240	1.00	0.351	pCi/L	08/31/17 10:33	09/07/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:49*	*1*

Client Sample ID: MW-10
Date Collected: 08/23/17 15:35
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-4
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.1		40 - 110	08/31/17 10:33	09/07/17 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	0.619		0.248	0.252	5.00	0.351	pCi/L		09/25/17 10:38	1

Client Sample ID: DUPE

Date Collected: 08/23/17 11:20
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.79	B	3.00	0.200	mg/L			08/29/17 20:57	1
Fluoride	0.255	J	1.00	0.0100	mg/L			08/29/17 20:57	1
Sulfate	18.4	B	10.0	0.0600	mg/L			08/30/17 09:09	2

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		09/01/17 08:07	09/05/17 15:10	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000361	J B	0.00200	0.0000213	mg/L		09/05/17 08:41	09/06/17 01:24	1
Arsenic	0.000723	J	0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 01:24	1
Barium	0.0554	J	0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 01:24	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 01:24	1
Boron	0.273	J B	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 01:24	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 01:24	1
Calcium	43.0		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 01:24	1
Chromium	ND		0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 01:24	1
Cobalt	0.000168	J	0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 01:24	1
Lead	ND		0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 01:24	1
Molybdenum	0.0110		0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 01:24	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 01:24	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 01:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.131	J B	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 22:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.57		0.100	0.100	SU			09/02/17 20:51	1
Temperature	20.9		0.100	0.100	Degrees C			09/02/17 20:51	1
Total Dissolved Solids	250		10.0	7.00	mg/L			08/30/17 17:36	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	0.217		0.0816	0.0839	1.00	0.0750	pCi/L	08/31/17 09:42	09/22/17 14:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*08/31/17 09:42*	*09/22/17 14:21*	*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	0.289	U	0.231	0.232	1.00	0.366	pCi/L	08/31/17 10:33	09/07/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:49*	*1*

Client Sample ID: DUPE
Date Collected: 08/23/17 11:20
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-5
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.8		40 - 110	08/31/17 10:33	09/07/17 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	0.506		0.245	0.247	5.00	0.366	pCi/L		09/25/17 10:38	1

Client Sample ID: FIELD BLANK

Date Collected: 08/23/17 16:43
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.480**	**J B**	3.00	0.200	mg/L			08/29/17 21:19	1
Fluoride	ND		1.00	0.0100	mg/L			08/29/17 21:19	1
Sulfate	**0.0703**	**J**	5.00	0.0300	mg/L			08/29/17 21:19	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		09/01/17 08:07	09/05/17 15:15	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0000900**	**J B**	0.00200	0.0000213	mg/L		09/05/17 08:41	09/06/17 01:29	1
Arsenic	ND		0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 01:29	1
Barium	ND		0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 01:29	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 01:29	1
Boron	**0.00994**	**J B**	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 01:29	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 01:29	1
Calcium	ND		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 01:29	1
Chromium	ND		0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 01:29	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 01:29	1
Lead	ND		0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 01:29	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 01:29	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 01:29	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 01:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.125**	**J B**	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 22:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.44**		0.100	0.100	SU			09/02/17 20:51	1
Temperature	**21.0**		0.100	0.100	Degrees C			09/02/17 20:51	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			08/30/17 17:36	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	0.00605	U	0.0251	0.0251	1.00	0.0543	pCi/L	08/31/17 09:42	09/22/17 14:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*08/31/17 09:42*	*09/22/17 14:21*	*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	0.0580	U	0.242	0.242	1.00	0.419	pCi/L	08/31/17 10:33	09/07/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:49*	*1*

Client Sample ID: FIELD BLANK

Date Collected: 08/23/17 16:43
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-6

Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	90.5		40 - 110	08/31/17 10:33	09/07/17 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	0.0640	U	0.244	0.244	5.00	0.419	pCi/L		09/25/17 10:38	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-456390/3
Matrix: Water
Analysis Batch: 456390

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3946	J	3.00	0.200	mg/L			08/29/17 16:39	1
Fluoride	ND		1.00	0.0100	mg/L			08/29/17 16:39	1
Sulfate	ND		5.00	0.0300	mg/L			08/29/17 16:39	1

Lab Sample ID: LCS 490-456390/4
Matrix: Water
Analysis Batch: 456390

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	9.249		mg/L		92	80 - 120
Fluoride	1.00	0.9001	J	mg/L		90	80 - 120
Sulfate	10.0	9.139		mg/L		91	80 - 120

Lab Sample ID: LCSD 490-456390/5
Matrix: Water
Analysis Batch: 456390

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	9.197		mg/L		92	80 - 120	1	20
Fluoride	1.00	0.8652	J	mg/L		86	80 - 120	4	20
Sulfate	10.0	8.990		mg/L		90	80 - 120	2	20

Lab Sample ID: MB 490-456445/3
Matrix: Water
Analysis Batch: 456445

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4321	J	3.00	0.200	mg/L			08/29/17 23:55	1
Fluoride	ND		1.00	0.0100	mg/L			08/29/17 23:55	1
Sulfate	0.06002	J	5.00	0.0300	mg/L			08/29/17 23:55	1

Lab Sample ID: LCS 490-456445/4
Matrix: Water
Analysis Batch: 456445

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	9.338		mg/L		93	80 - 120
Fluoride	1.00	0.9367	J	mg/L		93	80 - 120
Sulfate	10.0	9.275		mg/L		93	80 - 120

Lab Sample ID: LCSD 490-456445/5
Matrix: Water
Analysis Batch: 456445

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	9.268		mg/L		93	80 - 120	1	20
Fluoride	1.00	0.9911	J	mg/L		99	80 - 120	6	20
Sulfate	10.0	9.061		mg/L		91	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-221801/1-A
Matrix: Water
Analysis Batch: 222099

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/01/17 08:07	09/05/17 14:24	1

Lab Sample ID: LCS 180-221801/2-A
Matrix: Water
Analysis Batch: 222099

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.041		mg/L		104	80 - 120

Lab Sample ID: 490-134486-B-8-B MS
Matrix: Water
Analysis Batch: 222099

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	1.028		mg/L		103	75 - 125

Lab Sample ID: 490-134486-B-8-C MSD
Matrix: Water
Analysis Batch: 222099

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 221801

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	1.037		mg/L		104	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-221994/1-A
Matrix: Water
Analysis Batch: 222180

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 221994

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00002700	J	0.00200	0.0000213	mg/L		09/05/17 08:41	09/06/17 00:25	1
Arsenic	ND		0.00500	0.000118	mg/L		09/05/17 08:41	09/06/17 00:25	1
Barium	ND		0.200	0.000270	mg/L		09/05/17 08:41	09/06/17 00:25	1
Beryllium	ND		0.00200	0.000102	mg/L		09/05/17 08:41	09/06/17 00:25	1
Boron	0.01776	J	1.00	0.00339	mg/L		09/05/17 08:41	09/06/17 00:25	1
Cadmium	ND		0.00100	0.000152	mg/L		09/05/17 08:41	09/06/17 00:25	1
Calcium	ND		1.00	0.0412	mg/L		09/05/17 08:41	09/06/17 00:25	1
Chromium	ND		0.00300	0.000339	mg/L		09/05/17 08:41	09/06/17 00:25	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/05/17 08:41	09/06/17 00:25	1
Lead	0.00009100	J	0.00500	0.0000675	mg/L		09/05/17 08:41	09/06/17 00:25	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/05/17 08:41	09/06/17 00:25	1
Selenium	ND		0.0100	0.000348	mg/L		09/05/17 08:41	09/06/17 00:25	1
Thallium	ND		0.00100	0.0000360	mg/L		09/05/17 08:41	09/06/17 00:25	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-221994/2-A
Matrix: Water
Analysis Batch: 222180

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 221994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5093		mg/L		102	80 - 120
Arsenic	0.0400	0.03981		mg/L		100	80 - 120
Barium	2.00	1.876		mg/L		94	80 - 120
Beryllium	0.0500	0.05326		mg/L		107	80 - 120
Boron	1.00	1.009		mg/L		101	80 - 120
Cadmium	0.0500	0.05412		mg/L		108	80 - 120
Calcium	50.0	48.51		mg/L		97	80 - 120
Chromium	0.200	0.2026		mg/L		101	80 - 120
Cobalt	0.500	0.4208		mg/L		84	80 - 120
Lead	0.0200	0.02016		mg/L		101	80 - 120
Molybdenum	1.00	1.048		mg/L		105	80 - 120
Selenium	0.0100	0.01104		mg/L		110	80 - 120
Thallium	0.0500	0.04989		mg/L		100	80 - 120

Lab Sample ID: 180-69685-G-8-C MS
Matrix: Water
Analysis Batch: 222180

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 221994

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000111	J B	0.500	0.4938		mg/L		99	75 - 125
Arsenic	0.00246	J	0.0400	0.03868		mg/L		91	75 - 125
Barium	0.0390	J	2.00	1.892		mg/L		93	75 - 125
Beryllium	ND		0.0500	0.05198		mg/L		104	75 - 125
Boron	0.425	J B	1.00	1.366		mg/L		94	75 - 125
Cadmium	ND		0.0500	0.05344		mg/L		107	75 - 125
Calcium	52.6		50.0	105.1		mg/L		105	75 - 125
Chromium	ND		0.200	0.1960		mg/L		98	75 - 125
Cobalt	0.000135	J	0.500	0.4203		mg/L		84	75 - 125
Lead	ND		0.0200	0.01991		mg/L		100	75 - 125
Molybdenum	0.0703		1.00	1.098		mg/L		103	75 - 125
Selenium	ND	F2	0.0100	0.01085		mg/L		109	75 - 125
Thallium	ND		0.0500	0.04869		mg/L		97	75 - 125

Lab Sample ID: 180-69685-G-8-D MSD
Matrix: Water
Analysis Batch: 222180

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 221994

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000111	J B	0.500	0.5073		mg/L		101	75 - 125	3	20
Arsenic	0.00246	J	0.0400	0.04178		mg/L		98	75 - 125	8	20
Barium	0.0390	J	2.00	1.913		mg/L		94	75 - 125	1	20
Beryllium	ND		0.0500	0.05325		mg/L		107	75 - 125	2	20
Boron	0.425	J B	1.00	1.427		mg/L		100	75 - 125	4	20
Cadmium	ND		0.0500	0.05485		mg/L		110	75 - 125	3	20
Calcium	52.6		50.0	105.4		mg/L		106	75 - 125	0	20
Chromium	ND		0.200	0.1990		mg/L		100	75 - 125	2	20
Cobalt	0.000135	J	0.500	0.4249		mg/L		85	75 - 125	1	20
Lead	ND		0.0200	0.02003		mg/L		100	75 - 125	1	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-69685-G-8-D MSD
Matrix: Water
Analysis Batch: 222180

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 221994

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.0703		1.00	1.119		mg/L		105	75 - 125	2	20
Selenium	ND	F2	0.0100	0.008292	J F2	mg/L		83	75 - 125	27	20
Thallium	ND		0.0500	0.04926		mg/L		99	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-456043/1-A
Matrix: Water
Analysis Batch: 456209

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 456043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.1627	J	0.200	0.100	ug/L		08/28/17 14:27	08/28/17 21:23	1

Lab Sample ID: LCS 490-456043/2-A
Matrix: Water
Analysis Batch: 456209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 456043

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.114		ug/L		111	80 - 120

Lab Sample ID: 490-135346-A-1-E MS
Matrix: Water
Analysis Batch: 456209

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 456043

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.121	J B	1.00	1.032		ug/L		91	75 - 125

Lab Sample ID: 490-135346-A-1-F MSD
Matrix: Water
Analysis Batch: 456209

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 456043

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.121	J B	1.00	1.020		ug/L		90	75 - 125	1	20

Method: 9040C - pH

Lab Sample ID: LCS 490-457491/1
Matrix: Water
Analysis Batch: 457491

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: 490-135388-1 DU
Matrix: Water
Analysis Batch: 457491

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.25		7.250		SU		0	20

Method: 9040C - pH (Continued)

Lab Sample ID: 490-135388-1 DU
Matrix: Water
Analysis Batch: 457491

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Temperature	21.1			21.10		Degrees C				0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-455647/1
Matrix: Water
Analysis Batch: 455647

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			08/27/17 21:42	1

Lab Sample ID: LCS 490-455647/2
Matrix: Water
Analysis Batch: 455647

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: LCSD 490-455647/3
Matrix: Water
Analysis Batch: 455647

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	110.0		mg/L		110	90 - 110	17	20

Lab Sample ID: 490-135346-E-1 DU
Matrix: Water
Analysis Batch: 455647

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	1430			1424		mg/L				0.1	20

Lab Sample ID: 590-6912-B-1 DU
Matrix: Water
Analysis Batch: 455647

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	1890			1832		mg/L				3	20

Lab Sample ID: MB 490-455790/1
Matrix: Water
Analysis Batch: 455790

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			08/30/17 17:36	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-455790/2
Matrix: Water
Analysis Batch: 455790

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: LCSD 490-455790/3
Matrix: Water
Analysis Batch: 455790

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	91.00		mg/L		91	90 - 110	2	20

Lab Sample ID: 490-135388-5 DU
Matrix: Water
Analysis Batch: 455790

Client Sample ID: DUPE
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	250			251.0		mg/L				0.4	20

Lab Sample ID: 490-135622-H-1 DU
Matrix: Water
Analysis Batch: 455790

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	6630			6560		mg/L				1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-325275/1-A
Matrix: Water
Analysis Batch: 328529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 325275

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.004428	U	0.0411	0.0411	1.00	0.0923	pCi/L	08/31/17 09:42	09/22/17 07:57	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*08/31/17 09:42*	*09/22/17 07:57*	*1*

Lab Sample ID: LCS 160-325275/2-A
Matrix: Water
Analysis Batch: 328530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 325275

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	10.34		1.06	1.00	0.0745	pCi/L	108	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.2*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 160-24203-H-6-B DU
Matrix: Water
Analysis Batch: 328576

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 325275

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	2.31			2.363		0.324	1.00	0.0713	pCi/L			0.08	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-325291/1-A
Matrix: Water
Analysis Batch: 326167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 325291

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3477	U	0.233	0.235	1.00	0.359	pCi/L	08/31/17 10:33	09/07/17 13:44	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:44*	*1*
Y Carrier	*85.6*		*40 - 110*	*08/31/17 10:33*	*09/07/17 13:44*	*1*

Lab Sample ID: LCS 160-325291/2-A
Matrix: Water
Analysis Batch: 326167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 325291

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.9	11.35		1.24	1.00	0.283	pCi/L	88	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.2*		*40 - 110*
Y Carrier	*92.7*		*40 - 110*

Lab Sample ID: 160-24203-H-6-D DU
Matrix: Water
Analysis Batch: 326167

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 325291

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	1.02			1.165		0.315	1.00	0.374	pCi/L			0.24	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*
Y Carrier	*88.2*		*40 - 110*

HPLC/IC

Analysis Batch: 456390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	9056A	
490-135388-2	MW-8	Total/NA	Water	9056A	
490-135388-2	MW-8	Total/NA	Water	9056A	
490-135388-3	MW-9	Total/NA	Water	9056A	
490-135388-4	MW-10	Total/NA	Water	9056A	
490-135388-4	MW-10	Total/NA	Water	9056A	
490-135388-5	DUPE	Total/NA	Water	9056A	
490-135388-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-456390/3	Method Blank	Total/NA	Water	9056A	
LCS 490-456390/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-456390/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 456445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	9056A	
490-135388-2	MW-8	Total/NA	Water	9056A	
490-135388-4	MW-10	Total/NA	Water	9056A	
490-135388-5	DUPE	Total/NA	Water	9056A	
MB 490-456445/3	Method Blank	Total/NA	Water	9056A	
LCS 490-456445/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-456445/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 221801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total Recoverable	Water	3005A	
490-135388-2	MW-8	Total Recoverable	Water	3005A	
490-135388-3	MW-9	Total Recoverable	Water	3005A	
490-135388-4	MW-10	Total Recoverable	Water	3005A	
490-135388-5	DUPE	Total Recoverable	Water	3005A	
490-135388-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-221801/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-221801/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-134486-B-8-B MS	Matrix Spike	Total Recoverable	Water	3005A	
490-134486-B-8-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 221994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total Recoverable	Water	3005A	
490-135388-2	MW-8	Total Recoverable	Water	3005A	
490-135388-3	MW-9	Total Recoverable	Water	3005A	
490-135388-4	MW-10	Total Recoverable	Water	3005A	
490-135388-5	DUPE	Total Recoverable	Water	3005A	
490-135388-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-221994/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-221994/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-69685-G-8-C MS	Matrix Spike	Dissolved	Water	3005A	
180-69685-G-8-D MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Metals (Continued)

Analysis Batch: 222099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total Recoverable	Water	6010C	221801
490-135388-2	MW-8	Total Recoverable	Water	6010C	221801
490-135388-3	MW-9	Total Recoverable	Water	6010C	221801
490-135388-4	MW-10	Total Recoverable	Water	6010C	221801
490-135388-5	DUPE	Total Recoverable	Water	6010C	221801
490-135388-6	FIELD BLANK	Total Recoverable	Water	6010C	221801
MB 180-221801/1-A	Method Blank	Total Recoverable	Water	6010C	221801
LCS 180-221801/2-A	Lab Control Sample	Total Recoverable	Water	6010C	221801
490-134486-B-8-B MS	Matrix Spike	Total Recoverable	Water	6010C	221801
490-134486-B-8-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	221801

Analysis Batch: 222180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total Recoverable	Water	6020A	221994
490-135388-2	MW-8	Total Recoverable	Water	6020A	221994
490-135388-3	MW-9	Total Recoverable	Water	6020A	221994
490-135388-4	MW-10	Total Recoverable	Water	6020A	221994
490-135388-5	DUPE	Total Recoverable	Water	6020A	221994
490-135388-6	FIELD BLANK	Total Recoverable	Water	6020A	221994
MB 180-221994/1-A	Method Blank	Total Recoverable	Water	6020A	221994
LCS 180-221994/2-A	Lab Control Sample	Total Recoverable	Water	6020A	221994
180-69685-G-8-C MS	Matrix Spike	Dissolved	Water	6020A	221994
180-69685-G-8-D MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	221994

Prep Batch: 456043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	7470A	
490-135388-2	MW-8	Total/NA	Water	7470A	
490-135388-3	MW-9	Total/NA	Water	7470A	
490-135388-4	MW-10	Total/NA	Water	7470A	
490-135388-5	DUPE	Total/NA	Water	7470A	
490-135388-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-456043/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-456043/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-135346-A-1-E MS	Matrix Spike	Total/NA	Water	7470A	
490-135346-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 456209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	7470A	456043
490-135388-2	MW-8	Total/NA	Water	7470A	456043
490-135388-3	MW-9	Total/NA	Water	7470A	456043
490-135388-4	MW-10	Total/NA	Water	7470A	456043
490-135388-5	DUPE	Total/NA	Water	7470A	456043
490-135388-6	FIELD BLANK	Total/NA	Water	7470A	456043
MB 490-456043/1-A	Method Blank	Total/NA	Water	7470A	456043
LCS 490-456043/2-A	Lab Control Sample	Total/NA	Water	7470A	456043
490-135346-A-1-E MS	Matrix Spike	Total/NA	Water	7470A	456043
490-135346-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	456043

General Chemistry

Analysis Batch: 455647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	SM 2540C	
490-135388-2	MW-8	Total/NA	Water	SM 2540C	
490-135388-3	MW-9	Total/NA	Water	SM 2540C	
490-135388-4	MW-10	Total/NA	Water	SM 2540C	
MB 490-455647/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-455647/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-455647/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-135346-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	
590-6912-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 455790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-5	DUPE	Total/NA	Water	SM 2540C	
490-135388-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-455790/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-455790/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-455790/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-135388-5 DU	DUPE	Total/NA	Water	SM 2540C	
490-135622-H-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 457491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	9040C	
490-135388-2	MW-8	Total/NA	Water	9040C	
490-135388-3	MW-9	Total/NA	Water	9040C	
490-135388-4	MW-10	Total/NA	Water	9040C	
490-135388-5	DUPE	Total/NA	Water	9040C	
490-135388-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-457491/1	Lab Control Sample	Total/NA	Water	9040C	
490-135388-1 DU	MW-7	Total/NA	Water	9040C	

Rad

Prep Batch: 325275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	PrecSep-21	
490-135388-2	MW-8	Total/NA	Water	PrecSep-21	
490-135388-3	MW-9	Total/NA	Water	PrecSep-21	
490-135388-4	MW-10	Total/NA	Water	PrecSep-21	
490-135388-5	DUPE	Total/NA	Water	PrecSep-21	
490-135388-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-325275/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-325275/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-24203-H-6-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 325291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-1	MW-7	Total/NA	Water	PrecSep_0	
490-135388-2	MW-8	Total/NA	Water	PrecSep_0	
490-135388-3	MW-9	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 325291 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-135388-4	MW-10	Total/NA	Water	PrecSep_0	
490-135388-5	DUPE	Total/NA	Water	PrecSep_0	
490-135388-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-325291/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-325291/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-24203-H-6-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW-7

Date Collected: 08/23/17 10:45
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-1

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			456390	08/29/17 18:37	JHS	TAL NSH
Total/NA	Analysis	9056A		2			456445	08/30/17 08:37	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 14:39	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	221994	09/05/17 08:41	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222180	09/06/17 00:53	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	456043	08/28/17 14:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1			456209	08/28/17 21:53	RDF	TAL NSH
Total/NA	Analysis	9040C		1			457491	09/02/17 20:51	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	455647	08/27/17 21:42	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1001.00 mL	1.0 g	325275	08/31/17 09:42	LDE	TAL SL
Total/NA	Analysis	903.0		1			328576	09/22/17 08:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1001.00 mL	1.0 g	325291	08/31/17 10:33	LDE	TAL SL
Total/NA	Analysis	904.0		1			326164	09/07/17 13:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328841	09/25/17 10:38	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 08/23/17 13:05
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-2

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			456390	08/29/17 19:42	JHS	TAL NSH
Total/NA	Analysis	9056A		100			456390	08/29/17 19:52	JHS	TAL NSH
Total/NA	Analysis	9056A		5			456445	08/30/17 08:48	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 14:44	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	221994	09/05/17 08:41	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222180	09/06/17 01:11	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	456043	08/28/17 14:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1			456209	08/28/17 21:55	RDF	TAL NSH
Total/NA	Analysis	9040C		1			457491	09/02/17 20:51	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	455647	08/27/17 21:42	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.31 mL	1.0 g	325275	08/31/17 09:42	LDE	TAL SL
Total/NA	Analysis	903.0		1			328576	09/22/17 08:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.31 mL	1.0 g	325291	08/31/17 10:33	LDE	TAL SL
Total/NA	Analysis	904.0		1			326164	09/07/17 13:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328841	09/25/17 10:38	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW-9

Date Collected: 08/23/17 14:25
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-3

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			456390	08/29/17 20:03	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:00	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	221994	09/05/17 08:41	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222180	09/06/17 01:15	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	456043	08/28/17 14:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1			456209	08/28/17 21:57	RDF	TAL NSH
Total/NA	Analysis	9040C		1			457491	09/02/17 20:51	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	455647	08/27/17 21:42	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.56 mL	1.0 g	325275	08/31/17 09:42	LDE	TAL SL
Total/NA	Analysis	903.0		1			328576	09/22/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.56 mL	1.0 g	325291	08/31/17 10:33	LDE	TAL SL
Total/NA	Analysis	904.0		1			326164	09/07/17 13:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328841	09/25/17 10:38	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 08/23/17 15:35
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-4

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			456390	08/29/17 20:25	JHS	TAL NSH
Total/NA	Analysis	9056A		5			456390	08/29/17 20:35	JHS	TAL NSH
Total/NA	Analysis	9056A		20			456445	08/30/17 08:58	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:05	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	221994	09/05/17 08:41	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222180	09/06/17 01:20	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	456043	08/28/17 14:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1			456209	08/28/17 22:00	RDF	TAL NSH
Total/NA	Analysis	9040C		1			457491	09/02/17 20:51	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	455647	08/27/17 21:42	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.89 mL	1.0 g	325275	08/31/17 09:42	LDE	TAL SL
Total/NA	Analysis	903.0		1			328576	09/22/17 14:21	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.89 mL	1.0 g	325291	08/31/17 10:33	LDE	TAL SL
Total/NA	Analysis	904.0		1			326164	09/07/17 13:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328841	09/25/17 10:38	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

Client Sample ID: DUPE

Date Collected: 08/23/17 11:20
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-5

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			456390	08/29/17 20:57	JHS	TAL NSH
Total/NA	Analysis	9056A		2			456445	08/30/17 09:09	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:10	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	221994	09/05/17 08:41	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222180	09/06/17 01:24	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	456043	08/28/17 14:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1			456209	08/28/17 22:02	RDF	TAL NSH
Total/NA	Analysis	9040C		1			457491	09/02/17 20:51	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	455790	08/30/17 17:36	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.65 mL	1.0 g	325275	08/31/17 09:42	LDE	TAL SL
Total/NA	Analysis	903.0		1			328576	09/22/17 14:21	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.65 mL	1.0 g	325291	08/31/17 10:33	LDE	TAL SL
Total/NA	Analysis	904.0		1			326164	09/07/17 13:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328841	09/25/17 10:38	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 08/23/17 16:43
Date Received: 08/25/17 09:50

Lab Sample ID: 490-135388-6

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			456390	08/29/17 21:19	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	221801	09/01/17 08:07	SES	TAL PIT
Total Recoverable	Analysis	6010C		1			222099	09/05/17 15:15	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	221994	09/05/17 08:41	SES	TAL PIT
Total Recoverable	Analysis	6020A		1			222180	09/06/17 01:29	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	456043	08/28/17 14:27	RDF	TAL NSH
Total/NA	Analysis	7470A		1			456209	08/28/17 22:04	RDF	TAL NSH
Total/NA	Analysis	9040C		1			457491	09/02/17 20:51	SCR	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	455790	08/30/17 17:36	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.08 mL	1.0 g	325275	08/31/17 09:42	LDE	TAL SL
Total/NA	Analysis	903.0		1			328576	09/22/17 14:21	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.08 mL	1.0 g	325291	08/31/17 10:33	LDE	TAL SL
Total/NA	Analysis	904.0		1			326164	09/07/17 13:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			328841	09/25/17 10:38	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: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

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: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

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	12-31-17
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	09-14-17 *
West Virginia DEP	State Program	3	142	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
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: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

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	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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	06-30-17 *
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
Washington	State Program	10	C592	08-30-18
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

490-135388 Chain of Custody

Cooler Received/Opened On 8/25/2017 @ 0950

Time Samples Removed From Cooler 17:28 Time Samples Placed In Storage 18:10 (2 Hour Window)

1. Tracking # 0397 (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: 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 HG 8/25/17 HG

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)

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) AJH

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) AJH

I certify that I attached a label with the unique LIMS number to each container (intial) AJH

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
135388

COOLER RECEIPT FORM

Cooler Received/Opened On 08-25-2017 @ 09:50

Time Samples Removed From Cooler 17:28 Time Samples Placed In Storage 1810 (2 Hour Window)

1. Tracking # 0310 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960357 pH Strip Lot N/A Chlorine Strip Lot N/A

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: 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) 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 (initial) 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 (initial) 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 (initial) AOT

I certify that I attached a label with the unique LIMS number to each container (initial) 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 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: 08/24/2017**
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: Reid/HMPL Impoundment GW CCR-Round 7	☐ 1 week		
Site: Reid/HMPL Impoundment	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-68814-21290.1
___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	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-7	8/23/17	1045	G	Water	6	N	N	x	x	x	x	
MW-8	8/23/17	1305	G	Water	6	N	N	x	x	x	x	
MW-9	8/23/17	1425	G	Water	6	N	N	x	x	x	x	
MW-10	8/23/17	1535	G	Water	6	N	N	x	x	x	x	
DUPE	8/23/17	1120	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	8/23/17	1643	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Loc: 490
135388

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: 0.1 Corr'd:_____ Therm ID No.:_____

Relinquished by: Greg Dick	Company: BREC	Date/Time: 8/24/17 1045	Received by:	Company: TAN	Date/Time: 8/25/17 0950
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:

Loc: 490
135388

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
8/24/2017
1045



490-135388 Waybill

Test

THE LEADER

RONMENTAL TESTING

Part: 158470-434 RIT2 EXP 04/18

ORIGIN ID:RNCA (615) 72
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR

NASHVILLE, TN 37204
UNITED STATES US

SHIP DATE: 28AUG17
ACTWGT: 10.00 LB MAN
CAD: 820425/CAFE3011

BILL RECIPIENT

TO SHIPPING/RECE
TESTAMERICA L
301 ALPHA DRI
RIDC PARK
PITTSBURGH P
(412) 963-7058
REF: S490 - 72363

NG
ORATORIES, INC.

5238

FedEx Express

TUE - 29 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0201 4055 2578 11

17

15238

EV AGC A

Uncorrected temp 18.0 °C
Thermometer ID 12
CF 0 Initials TS

No Ice

PT-WI-SR-009 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

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-61964.1
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 #: 490-135388-2
Address: 13715 Rider Trail North,	Due Date Requested: 9/25/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Reid/HMPL Impoundment GW CCR-Round 7	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-7 (490-135388-1)	8/23/17	10:45 Central		Water			X	X	X	2	Historical Review required
MW-8 (490-135388-2)	8/23/17	13:05 Central		Water			X	X	X	2	Historical Review required
MW-9 (490-135388-3)	8/23/17	14:25 Central		Water			X	X	X	2	Historical Review required
MW-10 (490-135388-4)	8/23/17	15:35 Central		Water			X	X	X	2	Historical Review required
DUPE (490-135388-5)	8/23/17	11:20 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-135388-6)	8/23/17	16:43 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:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	8/28/17	TAN		8/29/17 0920	TAST
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:

9/27/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-135388-2
SDG Number: Reid/HMPL Impoundment

Login Number: 135388
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: 490-135388-2
SDG Number: Reid/HMPL Impoundment

Login Number: 135388
List Number: 3
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 08/29/17 03:56 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	0.7,19.0,19.0,2.0
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: Reid/HMPL Impoundment GW CCR-Round 7

TestAmerica Job ID: 490-135388-1
SDG: Reid/HMPL Impoundment

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
160-24203-H-6-B DU	Duplicate	97.6
490-135388-1	MW-7	90.6
490-135388-2	MW-8	96.8
490-135388-3	MW-9	95.6
490-135388-4	MW-10	92.9
490-135388-5	DUPE	92.6
490-135388-6	FIELD BLANK	99.7
LCS 160-325275/2-A	Lab Control Sample	96.2
MB 160-325275/1-A	Method Blank	94.4

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
160-24203-H-6-D DU	Duplicate	97.6	88.2
490-135388-1	MW-7	90.6	90.1
490-135388-2	MW-8	96.8	68.4
490-135388-3	MW-9	95.6	86.7
490-135388-4	MW-10	92.9	90.1
490-135388-5	DUPE	92.6	90.8
490-135388-6	FIELD BLANK	99.7	90.5
LCS 160-325291/2-A	Lab Control Sample	96.2	92.7
MB 160-325291/1-A	Method Blank	94.4	85.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-137404-1
TestAmerica Sample Delivery Group: Reid/HMPL Impoundment
Client Project/Site: Reid/HMPL Impoundment GW CCR-Round 8
Sampling Event: Big Rivers CCR/SemiAnnual GW

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Brad Coyle

Roxanne Cisneros

Authorized for release by:
10/26/2017 12:11:49 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-137404-1	MW-7	Water	09/22/17 12:10	09/26/17 15:25
490-137404-2	MW-8	Water	09/22/17 13:35	09/26/17 15:25
490-137404-3	MW-9	Water	09/22/17 14:58	09/26/17 15:25
490-137404-4	MW-10	Water	09/22/17 15:45	09/26/17 15:25
490-137404-5	DUPE	Water	09/22/17 14:08	09/26/17 15:25
490-137404-6	FIELD BLANK	Water	09/22/17 16:21	09/26/17 15:25

Job ID: 490-137404-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-137404-1

Comments
No additional comments.

Receipt
The samples were received on 9/26/2017 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 3.2º C.

HPLC/IC
Method(s) 9056A: The method blank for analytical batch 490-463835 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 490-463835 contained Chloride and 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 490-464004 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 following samples was diluted due to the nature of the sample matrix: MW-8 (490-137404-2), MW-10 (490-137404-4) and DUPE (490-137404-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: Due to the nature of the sample matrix, matrix spike/ matrix spike duplicate was not analyzed with 490-464004 . However, the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits. (LCSD 490-464004/5)

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 160-329692: 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-7 (490-137404-1), MW-8 (490-137404-2), MW-9 (490-137404-3), MW-10 (490-137404-4), DUPE (490-137404-5) and FIELD BLANK (490-137404-6)

Method(s) PrecSep_0: Radium-228 Prep Batch 160-329694: 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-7 (490-137404-1), MW-8 (490-137404-2), MW-9 (490-137404-3), MW-10 (490-137404-4), DUPE (490-137404-5) and FIELD BLANK (490-137404-6)

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
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-7

Date Collected: 09/22/17 12:10
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.28	F1 B	3.00	0.200	mg/L			09/28/17 14:55	1
Fluoride	0.332	J F1	1.00	0.0100	mg/L			09/28/17 14:55	1
Sulfate	16.6	B	5.00	0.0300	mg/L			09/28/17 14:55	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		09/29/17 11:29	10/02/17 09:50	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000391	J B	0.00200	0.0000213	mg/L		09/29/17 09:54	10/01/17 20:56	1
Arsenic	0.00308	J	0.00500	0.000118	mg/L		09/29/17 09:54	10/01/17 20:56	1
Barium	0.0699	J	0.200	0.000270	mg/L		09/29/17 09:54	10/01/17 20:56	1
Beryllium	ND		0.00200	0.000102	mg/L		09/29/17 09:54	10/01/17 20:56	1
Boron	0.268	J	1.00	0.00339	mg/L		09/29/17 09:54	10/01/17 20:56	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/01/17 20:56	1
Calcium	40.6		1.00	0.0412	mg/L		09/29/17 09:54	10/01/17 20:56	1
Chromium	ND		0.00300	0.000339	mg/L		09/29/17 09:54	10/01/17 20:56	1
Cobalt	0.00239	J	0.00500	0.0000218	mg/L		09/29/17 09:54	10/01/17 20:56	1
Lead	ND		0.00500	0.0000675	mg/L		09/29/17 09:54	10/01/17 20:56	1
Molybdenum	0.00543	J	0.0100	0.000873	mg/L		09/29/17 09:54	10/01/17 20:56	1
Selenium	ND		0.0100	0.000348	mg/L		09/29/17 09:54	10/01/17 20:56	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/01/17 20:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/27/17 10:54	09/27/17 17:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.55		0.100	0.100	SU			10/03/17 13:40	1
Temperature	20.8		0.100	0.100	Degrees C			10/03/17 13:40	1
Total Dissolved Solids	267		10.0	7.00	mg/L			09/27/17 22:57	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	0.482		0.113	0.121	1.00	0.0614	pCi/L	09/29/17 09:35	10/23/17 14:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*09/29/17 09:35*	*10/23/17 14:19*	*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	0.160	U	0.263	0.263	1.00	0.442	pCi/L	09/29/17 09:58	10/09/17 15:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*1*

Client Sample ID: MW-7
Date Collected: 09/22/17 12:10
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-1
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.5		40 - 110	09/29/17 09:58	10/09/17 15:43	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	0.642		0.286	0.289	5.00	0.442	pCi/L		10/25/17 18:29	1

Client Sample ID: MW-8

Date Collected: 09/22/17 13:35
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58.5	J B	60.0	4.00	mg/L			09/28/17 15:41	20
Fluoride	0.488	J	1.00	0.0100	mg/L			09/28/17 15:30	1
Sulfate	1440	B	500	3.00	mg/L			09/28/17 17:14	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0375	J	0.0500	0.00959	mg/L		09/29/17 11:29	10/02/17 09:55	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000233	J B	0.00200	0.0000213	mg/L		09/29/17 09:54	10/01/17 21:01	1
Arsenic	0.000222	J	0.00500	0.000118	mg/L		09/29/17 09:54	10/01/17 21:01	1
Barium	0.0157	J	0.200	0.000270	mg/L		09/29/17 09:54	10/01/17 21:01	1
Beryllium	ND		0.00200	0.000102	mg/L		09/29/17 09:54	10/01/17 21:01	1
Boron	1.32		1.00	0.00339	mg/L		09/29/17 09:54	10/01/17 21:01	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/01/17 21:01	1
Calcium	228		1.00	0.0412	mg/L		09/29/17 09:54	10/01/17 21:01	1
Chromium	ND		0.00300	0.000339	mg/L		09/29/17 09:54	10/01/17 21:01	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/29/17 09:54	10/01/17 21:01	1
Lead	ND		0.00500	0.0000675	mg/L		09/29/17 09:54	10/01/17 21:01	1
Molybdenum	0.0139		0.0100	0.000873	mg/L		09/29/17 09:54	10/01/17 21:01	1
Selenium	0.000510	J	0.0100	0.000348	mg/L		09/29/17 09:54	10/01/17 21:01	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/01/17 21:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/27/17 10:54	09/27/17 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.35		0.100	0.100	SU			10/03/17 13:40	1
Temperature	20.2		0.100	0.100	Degrees C			10/03/17 13:40	1
Total Dissolved Solids	2030		20.0	14.0	mg/L			09/27/17 22:57	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	0.372		0.0969	0.103	1.00	0.0532	pCi/L	09/29/17 09:35	10/23/17 14:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/29/17 09:35*	*10/23/17 14:19*	*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	1.03		0.284	0.300	1.00	0.359	pCi/L	09/29/17 09:58	10/09/17 15:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*1*

Client Sample ID: MW-8
Date Collected: 09/22/17 13:35
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-2
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.1		40 - 110	09/29/17 09:58	10/09/17 15:43	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	1.40		0.300	0.317	5.00	0.359	pCi/L		10/25/17 18:29	1

Client Sample ID: MW-9

Date Collected: 09/22/17 14:58
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.14**	**B**	3.00	0.200	mg/L			09/28/17 15:53	1
Fluoride	**0.254**	**J**	1.00	0.0100	mg/L			09/28/17 15:53	1
Sulfate	**1.38**	**J B**	5.00	0.0300	mg/L			09/28/17 15:53	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		09/29/17 11:29	10/02/17 10:00	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000212**	**J B**	0.00200	0.0000213	mg/L		09/29/17 09:54	10/01/17 21:05	1
Arsenic	ND		0.00500	0.000118	mg/L		09/29/17 09:54	10/01/17 21:05	1
Barium	**0.227**		0.200	0.000270	mg/L		09/29/17 09:54	10/01/17 21:05	1
Beryllium	ND		0.00200	0.000102	mg/L		09/29/17 09:54	10/01/17 21:05	1
Boron	**0.0844**	**J**	1.00	0.00339	mg/L		09/29/17 09:54	10/01/17 21:05	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/01/17 21:05	1
Calcium	**57.6**		1.00	0.0412	mg/L		09/29/17 09:54	10/01/17 21:05	1
Chromium	ND		0.00300	0.000339	mg/L		09/29/17 09:54	10/01/17 21:05	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/29/17 09:54	10/01/17 21:05	1
Lead	ND		0.00500	0.0000675	mg/L		09/29/17 09:54	10/01/17 21:05	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/29/17 09:54	10/01/17 21:05	1
Selenium	ND		0.0100	0.000348	mg/L		09/29/17 09:54	10/01/17 21:05	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/01/17 21:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.101**	**J**	0.200	0.100	ug/L		09/27/17 10:54	09/27/17 17:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.39**		0.100	0.100	SU			10/03/17 13:40	1
Temperature	**20.3**		0.100	0.100	Degrees C			10/03/17 13:40	1
Total Dissolved Solids	**308**		10.0	7.00	mg/L			09/27/17 22:57	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	**0.658**		0.131	0.144	1.00	0.0649	pCi/L	09/29/17 09:35	10/23/17 14:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*09/29/17 09:35*	*10/23/17 14:19*	*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	**0.601**		0.248	0.255	1.00	0.354	pCi/L	09/29/17 09:58	10/09/17 15:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*1*

Client Sample ID: MW-9
Date Collected: 09/22/17 14:58
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-3
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.4		40 - 110	09/29/17 09:58	10/09/17 15:43	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	1.26		0.280	0.293	5.00	0.354	pCi/L		10/25/17 18:29	1

Client Sample ID: MW-10

Date Collected: 09/22/17 15:45
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.7	B	3.00	0.200	mg/L			09/28/17 16:04	1
Fluoride	0.534	J	1.00	0.0100	mg/L			09/28/17 16:04	1
Sulfate	226	B	50.0	0.300	mg/L			09/29/17 09:37	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.345		0.0500	0.00959	mg/L		09/29/17 11:29	10/02/17 10:05	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000231	J B	0.00200	0.0000213	mg/L		09/29/17 09:54	10/01/17 21:10	1
Arsenic	0.00295	J	0.00500	0.000118	mg/L		09/29/17 09:54	10/01/17 21:10	1
Barium	0.0823	J	0.200	0.000270	mg/L		09/29/17 09:54	10/01/17 21:10	1
Beryllium	ND		0.00200	0.000102	mg/L		09/29/17 09:54	10/01/17 21:10	1
Boron	0.543	J	1.00	0.00339	mg/L		09/29/17 09:54	10/01/17 21:10	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/01/17 21:10	1
Calcium	21.4		1.00	0.0412	mg/L		09/29/17 09:54	10/01/17 21:10	1
Chromium	ND		0.00300	0.000339	mg/L		09/29/17 09:54	10/01/17 21:10	1
Cobalt	0.000261	J	0.00500	0.0000218	mg/L		09/29/17 09:54	10/01/17 21:10	1
Lead	ND		0.00500	0.0000675	mg/L		09/29/17 09:54	10/01/17 21:10	1
Molybdenum	0.00468	J	0.0100	0.000873	mg/L		09/29/17 09:54	10/01/17 21:10	1
Selenium	ND		0.0100	0.000348	mg/L		09/29/17 09:54	10/01/17 21:10	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/01/17 21:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/27/17 10:54	09/27/17 17:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.41		0.100	0.100	SU			10/03/17 13:40	1
Temperature	20.4		0.100	0.100	Degrees C			10/03/17 13:40	1
Total Dissolved Solids	763		10.0	7.00	mg/L			09/27/17 23:48	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	0.220		0.0830	0.0854	1.00	0.0636	pCi/L	09/29/17 09:35	10/23/17 14:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*09/29/17 09:35*	*10/23/17 14:19*	*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	0.171	U	0.229	0.230	1.00	0.382	pCi/L	09/29/17 09:58	10/09/17 15:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*1*

Client Sample ID: MW-10
Date Collected: 09/22/17 15:45
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-4
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	76.6		40 - 110	09/29/17 09:58	10/09/17 15:43	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	0.391		0.244	0.245	5.00	0.382	pCi/L		10/25/17 18:29	1

Client Sample ID: DUPE

Date Collected: 09/22/17 14:08
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	68.2	B	60.0	4.00	mg/L			09/28/17 16:28	20
Fluoride	0.465	J	1.00	0.0100	mg/L			09/28/17 16:16	1
Sulfate	1470	B	500	3.00	mg/L			09/28/17 17:26	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0367	J	0.0500	0.00959	mg/L		09/29/17 11:29	10/02/17 10:11	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000410	J B	0.00200	0.0000213	mg/L		09/29/17 09:54	10/02/17 00:34	1
Arsenic	0.000331	J	0.00500	0.000118	mg/L		09/29/17 09:54	10/02/17 00:34	1
Barium	0.0176	J	0.200	0.000270	mg/L		09/29/17 09:54	10/02/17 00:34	1
Beryllium	0.000236	J	0.00200	0.000102	mg/L		09/29/17 09:54	10/02/17 00:34	1
Boron	1.38		1.00	0.00339	mg/L		09/29/17 09:54	10/02/17 00:34	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/02/17 00:34	1
Calcium	226		1.00	0.0412	mg/L		09/29/17 09:54	10/02/17 00:34	1
Chromium	0.000778	J	0.00300	0.000339	mg/L		09/29/17 09:54	10/02/17 00:34	1
Cobalt	0.000197	J	0.00500	0.0000218	mg/L		09/29/17 09:54	10/02/17 00:34	1
Lead	0.00180	J	0.00500	0.0000675	mg/L		09/29/17 09:54	10/02/17 00:34	1
Molybdenum	0.0138		0.0100	0.000873	mg/L		09/29/17 09:54	10/02/17 00:34	1
Selenium	ND		0.0100	0.000348	mg/L		09/29/17 09:54	10/02/17 00:34	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/02/17 00:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/27/17 10:54	09/27/17 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.39		0.100	0.100	SU			10/03/17 13:40	1
Temperature	20.4		0.100	0.100	Degrees C			10/03/17 13:40	1
Total Dissolved Solids	1990		20.0	14.0	mg/L			09/27/17 23:48	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	0.260		0.0882	0.0912	1.00	0.0800	pCi/L	09/29/17 09:35	10/23/17 14:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/29/17 09:35*	*10/23/17 14:20*	*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	0.897		0.277	0.289	1.00	0.364	pCi/L	09/29/17 09:58	10/09/17 15:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*1*

Client Sample ID: DUPE
Date Collected: 09/22/17 14:08
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-5
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*80.0*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*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	**1.16**		0.291	0.303	5.00	0.364	pCi/L		10/25/17 18:29	1

Client Sample ID: FIELD BLANK

Date Collected: 09/22/17 16:21
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.351**	**J B**	3.00	0.200	mg/L			09/28/17 16:39	1
Fluoride	**0.0557**	**J**	1.00	0.0100	mg/L			09/28/17 16:39	1
Sulfate	**0.647**	**J B**	5.00	0.0300	mg/L			09/28/17 16:39	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		09/29/17 11:29	10/02/17 10:16	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000382**	**J B**	0.00200	0.0000213	mg/L		09/29/17 09:54	10/02/17 00:38	1
Arsenic	ND		0.00500	0.000118	mg/L		09/29/17 09:54	10/02/17 00:38	1
Barium	ND		0.200	0.000270	mg/L		09/29/17 09:54	10/02/17 00:38	1
Beryllium	ND		0.00200	0.000102	mg/L		09/29/17 09:54	10/02/17 00:38	1
Boron	**0.0186**	**J**	1.00	0.00339	mg/L		09/29/17 09:54	10/02/17 00:38	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/02/17 00:38	1
Calcium	**0.0732**	**J**	1.00	0.0412	mg/L		09/29/17 09:54	10/02/17 00:38	1
Chromium	ND		0.00300	0.000339	mg/L		09/29/17 09:54	10/02/17 00:38	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/29/17 09:54	10/02/17 00:38	1
Lead	ND		0.00500	0.0000675	mg/L		09/29/17 09:54	10/02/17 00:38	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/29/17 09:54	10/02/17 00:38	1
Selenium	**0.000389**	**J**	0.0100	0.000348	mg/L		09/29/17 09:54	10/02/17 00:38	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/02/17 00:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/27/17 10:54	09/27/17 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.74**		0.100	0.100	SU			10/03/17 13:40	1
Temperature	**20.4**		0.100	0.100	Degrees C			10/03/17 13:40	1
Total Dissolved Solids	**8.00**	**J**	10.0	7.00	mg/L			09/27/17 23:48	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	-0.0122	U	0.0327	0.0328	1.00	0.0780	pCi/L	09/29/17 09:35	10/23/17 14:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*107*		*40 - 110*	*09/29/17 09:35*	*10/23/17 14:21*	*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	0.125	U	0.199	0.199	1.00	0.335	pCi/L	09/29/17 09:58	10/09/17 15:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*107*		*40 - 110*	*09/29/17 09:58*	*10/09/17 15:43*	*1*

Client Sample ID: FIELD BLANK
Date Collected: 09/22/17 16:21
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-6
Matrix: Water

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.9		40 - 110	09/29/17 09:58	10/09/17 15:43	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	0.113	U	0.202	0.202	5.00	0.335	pCi/L		10/25/17 18:29	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-463835/3
Matrix: Water
Analysis Batch: 463835

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2530	J	3.00	0.200	mg/L			09/28/17 14:20	1
Fluoride	ND		1.00	0.0100	mg/L			09/28/17 14:20	1
Sulfate	0.5624	J	5.00	0.0300	mg/L			09/28/17 14:20	1

Lab Sample ID: LCS 490-463835/4
Matrix: Water
Analysis Batch: 463835

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	1.085		mg/L		108	80 - 120
Sulfate	10.0	10.72		mg/L		107	80 - 120

Lab Sample ID: LCSD 490-463835/5
Matrix: Water
Analysis Batch: 463835

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	10.32		mg/L		103	80 - 120	1	20
Fluoride	1.00	1.081		mg/L		108	80 - 120	0	20
Sulfate	10.0	10.64		mg/L		106	80 - 120	1	20

Lab Sample ID: MB 490-464004/3
Matrix: Water
Analysis Batch: 464004

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2797	J	3.00	0.200	mg/L			09/29/17 09:02	1
Fluoride	0.04555	J	1.00	0.0100	mg/L			09/29/17 09:02	1
Sulfate	0.5818	J	5.00	0.0300	mg/L			09/29/17 09:02	1

Lab Sample ID: LCS 490-464004/4
Matrix: Water
Analysis Batch: 464004

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	10.34		mg/L		103	80 - 120
Fluoride	1.00	1.074		mg/L		107	80 - 120
Sulfate	10.0	10.65		mg/L		106	80 - 120

Lab Sample ID: LCSD 490-464004/5
Matrix: Water
Analysis Batch: 464004

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	10.23		mg/L		102	80 - 120	1	20
Fluoride	1.00	1.064		mg/L		106	80 - 120	1	20
Sulfate	10.0	10.60		mg/L		106	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-224463/1-A
Matrix: Water
Analysis Batch: 224631

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 224463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		09/29/17 11:29	10/02/17 08:07	1

Lab Sample ID: LCS 180-224463/2-A
Matrix: Water
Analysis Batch: 224631

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 224463

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.022		mg/L		102	80 - 120

Lab Sample ID: 180-70778-F-3-B MS
Matrix: Water
Analysis Batch: 224631

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 224463

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0147	J	1.00	1.032		mg/L		102	75 - 125

Lab Sample ID: 180-70778-F-3-C MSD
Matrix: Water
Analysis Batch: 224631

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 224463

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0147	J	1.00	1.040		mg/L		103	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-224431/1-A
Matrix: Water
Analysis Batch: 224664

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 224431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00002800	J	0.00200	0.0000213	mg/L		09/29/17 09:54	10/01/17 20:14	1
Arsenic	ND		0.00500	0.000118	mg/L		09/29/17 09:54	10/01/17 20:14	1
Barium	ND		0.200	0.000270	mg/L		09/29/17 09:54	10/01/17 20:14	1
Beryllium	ND		0.00200	0.000102	mg/L		09/29/17 09:54	10/01/17 20:14	1
Boron	ND		1.00	0.00339	mg/L		09/29/17 09:54	10/01/17 20:14	1
Cadmium	ND		0.00100	0.000152	mg/L		09/29/17 09:54	10/01/17 20:14	1
Calcium	ND		1.00	0.0412	mg/L		09/29/17 09:54	10/01/17 20:14	1
Chromium	ND		0.00300	0.000339	mg/L		09/29/17 09:54	10/01/17 20:14	1
Cobalt	ND		0.00500	0.0000218	mg/L		09/29/17 09:54	10/01/17 20:14	1
Lead	ND		0.00500	0.0000675	mg/L		09/29/17 09:54	10/01/17 20:14	1
Molybdenum	ND		0.0100	0.000873	mg/L		09/29/17 09:54	10/01/17 20:14	1
Selenium	ND		0.0100	0.000348	mg/L		09/29/17 09:54	10/01/17 20:14	1
Thallium	ND		0.00100	0.0000360	mg/L		09/29/17 09:54	10/01/17 20:14	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-224431/2-A
Matrix: Water
Analysis Batch: 224664

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 224431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4738		mg/L		95	80 - 120
Arsenic	0.0400	0.03440		mg/L		86	80 - 120
Barium	2.00	1.806		mg/L		90	80 - 120
Beryllium	0.0500	0.04183		mg/L		84	80 - 120
Boron	1.00	0.8380	J	mg/L		84	80 - 120
Cadmium	0.0500	0.04932		mg/L		99	80 - 120
Calcium	50.0	47.73		mg/L		95	80 - 120
Chromium	0.200	0.1850		mg/L		93	80 - 120
Cobalt	0.500	0.4731		mg/L		95	80 - 120
Lead	0.0200	0.01982		mg/L		99	80 - 120
Molybdenum	1.00	0.9793		mg/L		98	80 - 120
Selenium	0.0100	0.009862	J	mg/L		99	80 - 120
Thallium	0.0500	0.04838		mg/L		97	80 - 120

Lab Sample ID: 180-70731-D-1-A MS
Matrix: Water
Analysis Batch: 224664

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 224431

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000689	J B	0.500	0.4751		mg/L		95	75 - 125
Arsenic	0.00251	J	0.0400	0.03744		mg/L		87	75 - 125
Barium	0.0198	J	2.00	1.804		mg/L		89	75 - 125
Beryllium	ND		0.0500	0.04517		mg/L		90	75 - 125
Boron	0.253	J	1.00	1.147		mg/L		89	75 - 125
Cadmium	ND		0.0500	0.04934		mg/L		99	75 - 125
Calcium	67.6		50.0	107.3		mg/L		80	75 - 125
Chromium	0.000478	J	0.200	0.1880		mg/L		94	75 - 125
Cobalt	0.0000810	J	0.500	0.4788		mg/L		96	75 - 125
Lead	0.000954	J	0.0200	0.01989		mg/L		95	75 - 125
Molybdenum	0.0136		1.00	1.009		mg/L		100	75 - 125
Selenium	0.000505	J	0.0100	0.01053		mg/L		100	75 - 125
Thallium	ND		0.0500	0.04824		mg/L		96	75 - 125

Lab Sample ID: 180-70731-D-1-B MSD
Matrix: Water
Analysis Batch: 224664

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 224431

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000689	J B	0.500	0.4765		mg/L		95	75 - 125	0	20
Arsenic	0.00251	J	0.0400	0.03592		mg/L		84	75 - 125	4	20
Barium	0.0198	J	2.00	1.798		mg/L		89	75 - 125	0	20
Beryllium	ND		0.0500	0.04626		mg/L		93	75 - 125	2	20
Boron	0.253	J	1.00	1.188		mg/L		94	75 - 125	4	20
Cadmium	ND		0.0500	0.04984		mg/L		100	75 - 125	1	20
Calcium	67.6		50.0	109.5		mg/L		84	75 - 125	2	20
Chromium	0.000478	J	0.200	0.1858		mg/L		93	75 - 125	1	20
Cobalt	0.0000810	J	0.500	0.4767		mg/L		95	75 - 125	0	20
Lead	0.000954	J	0.0200	0.01971		mg/L		94	75 - 125	1	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-70731-D-1-B MSD
Matrix: Water
Analysis Batch: 224664

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 224431

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.0136		1.00	1.000		mg/L		99	75 - 125	1	20
Selenium	0.000505	J	0.0100	0.01099		mg/L		105	75 - 125	4	20
Thallium	ND		0.0500	0.04858		mg/L		97	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-463414/1-A
Matrix: Water
Analysis Batch: 463720

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 463414

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.100	ug/L		09/27/17 10:54	09/27/17 16:57	1

Lab Sample ID: LCS 490-463414/2-A
Matrix: Water
Analysis Batch: 463720

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 463414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.003		ug/L		100	80 - 120

Lab Sample ID: 490-137404-1 MS
Matrix: Water
Analysis Batch: 463720

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 463414

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.056		ug/L		106	75 - 125

Lab Sample ID: 490-137404-1 MSD
Matrix: Water
Analysis Batch: 463720

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 463414

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.101		ug/L		110	75 - 125	4	20

Method: 9040C - pH

Lab Sample ID: LCS 490-465055/1
Matrix: Water
Analysis Batch: 465055

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	7.060		SU		101	98 - 103

Lab Sample ID: 490-137535-A-1 DU
Matrix: Water
Analysis Batch: 465055

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.43		7.430		SU		0	20

Method: 9040C - pH (Continued)

Lab Sample ID: 490-137535-A-1 DU
Matrix: Water
Analysis Batch: 465055

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Temperature	20.0			20.00		Degrees C				0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-463446/1
Matrix: Water
Analysis Batch: 463446

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			09/27/17 23:48	1

Lab Sample ID: LCS 490-463446/2
Matrix: Water
Analysis Batch: 463446

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 490-463446/3
Matrix: Water
Analysis Batch: 463446

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	101.0		mg/L		101	90 - 110	4	20

Lab Sample ID: 490-137350-K-1 DU
Matrix: Water
Analysis Batch: 463446

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	350			331.0		mg/L				6	20

Lab Sample ID: 490-137377-D-12 DU
Matrix: Water
Analysis Batch: 463446

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	2040			2006		mg/L				1	20

Lab Sample ID: MB 490-463470/1
Matrix: Water
Analysis Batch: 463470

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			09/27/17 22:57	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-463470/2
Matrix: Water
Analysis Batch: 463470

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	109.0		mg/L		109	90 - 110		

Lab Sample ID: 490-137201-C-1 DU
Matrix: Water
Analysis Batch: 463470

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	849			875.0		mg/L				3	20

Lab Sample ID: 490-137404-3 DU
Matrix: Water
Analysis Batch: 463470

Client Sample ID: MW-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	308			310.0		mg/L				0.6	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-329692/1-A
Matrix: Water
Analysis Batch: 333404

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 329692

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07596	U	0.0596	0.0600	1.00	0.0828	pCi/L	09/29/17 09:35	10/23/17 06:24	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/29/17 09:35*	*10/23/17 06:24*	*1*

Lab Sample ID: LCS 160-329692/2-A
Matrix: Water
Analysis Batch: 333404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 329692

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	10.80		1.12	1.00	0.0793	pCi/L	112	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*

Lab Sample ID: LCSD 160-329692/3-A
Matrix: Water
Analysis Batch: 333404

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 329692

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			9.60	10.03		1.04	1.00	0.0848	pCi/L	104	68 - 137	0.36	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-329692/3-A
Matrix: Water
Analysis Batch: 333404

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 329692

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	104		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-329694/1-A
Matrix: Water
Analysis Batch: 330838

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 329694

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3350	U	0.231	0.233	1.00	0.360	pCi/L	09/29/17 09:58	10/09/17 15:39	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	09/29/17 09:58	10/09/17 15:39	1
Y Carrier	82.2		40 - 110	09/29/17 09:58	10/09/17 15:39	1

Lab Sample ID: LCS 160-329694/2-A
Matrix: Water
Analysis Batch: 330838

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 329694

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.8	13.90		1.49	1.00	0.396	pCi/L	109	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	78.5		40 - 110

Lab Sample ID: LCSD 160-329694/3-A
Matrix: Water
Analysis Batch: 330838

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 329694

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			12.8	12.70		1.37	1.00	0.290	pCi/L	99	56 - 140	0.42	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	82.6		40 - 110

HPLC/IC

Analysis Batch: 463835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	9056A	
490-137404-2	MW-8	Total/NA	Water	9056A	
490-137404-2	MW-8	Total/NA	Water	9056A	
490-137404-2	MW-8	Total/NA	Water	9056A	
490-137404-3	MW-9	Total/NA	Water	9056A	
490-137404-4	MW-10	Total/NA	Water	9056A	
490-137404-5	DUPE	Total/NA	Water	9056A	
490-137404-5	DUPE	Total/NA	Water	9056A	
490-137404-5	DUPE	Total/NA	Water	9056A	
490-137404-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-463835/3	Method Blank	Total/NA	Water	9056A	
LCS 490-463835/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-463835/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 464004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-4	MW-10	Total/NA	Water	9056A	
MB 490-464004/3	Method Blank	Total/NA	Water	9056A	
LCS 490-464004/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-464004/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 224431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total Recoverable	Water	3005A	
490-137404-2	MW-8	Total Recoverable	Water	3005A	
490-137404-3	MW-9	Total Recoverable	Water	3005A	
490-137404-4	MW-10	Total Recoverable	Water	3005A	
490-137404-5	DUPE	Total Recoverable	Water	3005A	
490-137404-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-224431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-224431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70731-D-1-A MS	Matrix Spike	Dissolved	Water	3005A	
180-70731-D-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Prep Batch: 224463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total Recoverable	Water	3005A	
490-137404-2	MW-8	Total Recoverable	Water	3005A	
490-137404-3	MW-9	Total Recoverable	Water	3005A	
490-137404-4	MW-10	Total Recoverable	Water	3005A	
490-137404-5	DUPE	Total Recoverable	Water	3005A	
490-137404-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-224463/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-224463/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-70778-F-3-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-70778-F-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 224631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total Recoverable	Water	6010C	224463
490-137404-2	MW-8	Total Recoverable	Water	6010C	224463
490-137404-3	MW-9	Total Recoverable	Water	6010C	224463
490-137404-4	MW-10	Total Recoverable	Water	6010C	224463
490-137404-5	DUPE	Total Recoverable	Water	6010C	224463
490-137404-6	FIELD BLANK	Total Recoverable	Water	6010C	224463
MB 180-224463/1-A	Method Blank	Total Recoverable	Water	6010C	224463
LCS 180-224463/2-A	Lab Control Sample	Total Recoverable	Water	6010C	224463
180-70778-F-3-B MS	Matrix Spike	Total Recoverable	Water	6010C	224463
180-70778-F-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	224463

Analysis Batch: 224664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total Recoverable	Water	6020A	224431
490-137404-2	MW-8	Total Recoverable	Water	6020A	224431
490-137404-3	MW-9	Total Recoverable	Water	6020A	224431
490-137404-4	MW-10	Total Recoverable	Water	6020A	224431
490-137404-5	DUPE	Total Recoverable	Water	6020A	224431
490-137404-6	FIELD BLANK	Total Recoverable	Water	6020A	224431
MB 180-224431/1-A	Method Blank	Total Recoverable	Water	6020A	224431
LCS 180-224431/2-A	Lab Control Sample	Total Recoverable	Water	6020A	224431
180-70731-D-1-A MS	Matrix Spike	Dissolved	Water	6020A	224431
180-70731-D-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	224431

Prep Batch: 463414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	7470A	
490-137404-2	MW-8	Total/NA	Water	7470A	
490-137404-3	MW-9	Total/NA	Water	7470A	
490-137404-4	MW-10	Total/NA	Water	7470A	
490-137404-5	DUPE	Total/NA	Water	7470A	
490-137404-6	FIELD BLANK	Total/NA	Water	7470A	
MB 490-463414/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-463414/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-137404-1 MS	MW-7	Total/NA	Water	7470A	
490-137404-1 MSD	MW-7	Total/NA	Water	7470A	

Analysis Batch: 463720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	7470A	463414
490-137404-2	MW-8	Total/NA	Water	7470A	463414
490-137404-3	MW-9	Total/NA	Water	7470A	463414
490-137404-4	MW-10	Total/NA	Water	7470A	463414
490-137404-5	DUPE	Total/NA	Water	7470A	463414
490-137404-6	FIELD BLANK	Total/NA	Water	7470A	463414
MB 490-463414/1-A	Method Blank	Total/NA	Water	7470A	463414
LCS 490-463414/2-A	Lab Control Sample	Total/NA	Water	7470A	463414
490-137404-1 MS	MW-7	Total/NA	Water	7470A	463414
490-137404-1 MSD	MW-7	Total/NA	Water	7470A	463414

General Chemistry

Analysis Batch: 463446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-4	MW-10	Total/NA	Water	SM 2540C	
490-137404-5	DUPE	Total/NA	Water	SM 2540C	
490-137404-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-463446/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-463446/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-463446/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-137350-K-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-137377-D-12 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 463470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	SM 2540C	
490-137404-2	MW-8	Total/NA	Water	SM 2540C	
490-137404-3	MW-9	Total/NA	Water	SM 2540C	
MB 490-463470/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-463470/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-137201-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-137404-3 DU	MW-9	Total/NA	Water	SM 2540C	

Analysis Batch: 465055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	9040C	
490-137404-2	MW-8	Total/NA	Water	9040C	
490-137404-3	MW-9	Total/NA	Water	9040C	
490-137404-4	MW-10	Total/NA	Water	9040C	
490-137404-5	DUPE	Total/NA	Water	9040C	
490-137404-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-465055/1	Lab Control Sample	Total/NA	Water	9040C	
490-137535-A-1 DU	Duplicate	Total/NA	Water	9040C	

Rad

Prep Batch: 329692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	PrecSep-21	
490-137404-2	MW-8	Total/NA	Water	PrecSep-21	
490-137404-3	MW-9	Total/NA	Water	PrecSep-21	
490-137404-4	MW-10	Total/NA	Water	PrecSep-21	
490-137404-5	DUPE	Total/NA	Water	PrecSep-21	
490-137404-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-329692/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-329692/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-329692/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 329694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-1	MW-7	Total/NA	Water	PrecSep_0	
490-137404-2	MW-8	Total/NA	Water	PrecSep_0	
490-137404-3	MW-9	Total/NA	Water	PrecSep_0	
490-137404-4	MW-10	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 329694 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-137404-5	DUPE	Total/NA	Water	PrecSep_0	
490-137404-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-329694/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-329694/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-329694/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW-7

Date Collected: 09/22/17 12:10
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-1

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			463835	09/28/17 14:55	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224463	09/29/17 11:29	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224631	10/02/17 09:50	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224431	09/29/17 09:54	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224664	10/01/17 20:56	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	463414	09/27/17 10:54	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463720	09/27/17 17:08	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465055	10/03/17 13:40	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463470	09/27/17 22:57	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.03 mL	1.0 g	329692	09/29/17 09:35	LDE	TAL SL
Total/NA	Analysis	903.0		1			333108	10/23/17 14:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.03 mL	1.0 g	329694	09/29/17 09:58	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	330837	10/09/17 15:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333962	10/25/17 18:29	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 09/22/17 13:35
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-2

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			463835	09/28/17 15:30	LDC	TAL NSH
Total/NA	Analysis	9056A		20			463835	09/28/17 15:41	LDC	TAL NSH
Total/NA	Analysis	9056A		100			463835	09/28/17 17:14	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224463	09/29/17 11:29	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224631	10/02/17 09:55	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224431	09/29/17 09:54	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224664	10/01/17 21:01	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	463414	09/27/17 10:54	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463720	09/27/17 17:16	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465055	10/03/17 13:40	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	463470	09/27/17 22:57	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.39 mL	1.0 g	329692	09/29/17 09:35	LDE	TAL SL
Total/NA	Analysis	903.0		1			333108	10/23/17 14:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.39 mL	1.0 g	329694	09/29/17 09:58	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	330837	10/09/17 15:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333962	10/25/17 18:29	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 09/22/17 14:58
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-3

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			463835	09/28/17 15:53	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224463	09/29/17 11:29	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224631	10/02/17 10:00	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224431	09/29/17 09:54	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224664	10/01/17 21:05	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	463414	09/27/17 10:54	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463720	09/27/17 17:18	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465055	10/03/17 13:40	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463470	09/27/17 22:57	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.06 mL	1.0 g	329692	09/29/17 09:35	LDE	TAL SL
Total/NA	Analysis	903.0		1			333108	10/23/17 14:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.06 mL	1.0 g	329694	09/29/17 09:58	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	330837	10/09/17 15:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333962	10/25/17 18:29	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 09/22/17 15:45
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-4

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			463835	09/28/17 16:04	LDC	TAL NSH
Total/NA	Analysis	9056A		10			464004	09/29/17 09:37	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224463	09/29/17 11:29	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224631	10/02/17 10:05	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224431	09/29/17 09:54	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224664	10/01/17 21:10	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	463414	09/27/17 10:54	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463720	09/27/17 17:21	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465055	10/03/17 13:40	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463446	09/27/17 23:48	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.02 mL	1.0 g	329692	09/29/17 09:35	LDE	TAL SL
Total/NA	Analysis	903.0		1			333108	10/23/17 14:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.02 mL	1.0 g	329694	09/29/17 09:58	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	330837	10/09/17 15:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333962	10/25/17 18:29	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 09/22/17 14:08
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-5

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			463835	09/28/17 16:16	LDC	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

Client Sample ID: DUPE

Date Collected: 09/22/17 14:08
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-5

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		20			463835	09/28/17 16:28	LDC	TAL NSH
Total/NA	Analysis	9056A		100			463835	09/28/17 17:26	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224463	09/29/17 11:29	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224631	10/02/17 10:11	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224431	09/29/17 09:54	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224664	10/02/17 00:34	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	463414	09/27/17 10:54	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463720	09/27/17 17:24	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465055	10/03/17 13:40	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	463446	09/27/17 23:48	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.87 mL	1.0 g	329692	09/29/17 09:35	LDE	TAL SL
Total/NA	Analysis	903.0		1			333107	10/23/17 14:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.87 mL	1.0 g	329694	09/29/17 09:58	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	330837	10/09/17 15:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333962	10/25/17 18:29	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 09/22/17 16:21
Date Received: 09/26/17 15:25

Lab Sample ID: 490-137404-6

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			463835	09/28/17 16:39	LDC	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	224463	09/29/17 11:29	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			224631	10/02/17 10:16	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	224431	09/29/17 09:54	KA	TAL PIT
Total Recoverable	Analysis	6020A		1	1.0 mL	1.0 mL	224664	10/02/17 00:38	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	463414	09/27/17 10:54	RDF	TAL NSH
Total/NA	Analysis	7470A		1			463720	09/27/17 17:27	RDF	TAL NSH
Total/NA	Analysis	9040C		1			465055	10/03/17 13:40	AJK	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	463446	09/27/17 23:48	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.93 mL	1.0 g	329692	09/29/17 09:35	LDE	TAL SL
Total/NA	Analysis	903.0		1			333107	10/23/17 14:21	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.93 mL	1.0 g	329694	09/29/17 09:58	LDE	TAL SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	330837	10/09/17 15:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			333962	10/25/17 18:29	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: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

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: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

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	12-31-17
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	01-31-18
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
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
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: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

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	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	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
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-137404 Chain of Custody

Cooler Received/Opened On 9/26/2017 @ 09:15

Time Samples Removed From Cooler 15:20 Time Samples Placed In Storage 16:16 (2 Hour Window)

1. Tracking # 1373 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17610176 pH Strip Lot N/A Chlorine Strip Lot ~~N/A~~ 0524177F KD 09-26-2017

2. Temperature of rep. sample or temp blank when opened: 3.2 *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) J.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) KD

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) KD

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) KD

I certify that I attached a label with the unique LIMS number to each container (intial) KD

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

Cooler Received/Opened On_09-26-2017 09:15

Time Samples Removed From Cooler 15:20 Time Samples Placed In Storage 16:16 (2 Hour Window)

1. Tracking # 1421 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID_31470366_____ pH Strip Lot N/A Chlorine Strip Lot ~~N/A~~ 052417F KD 09-26-2017

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: 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) 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

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) KD

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) KD

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) KD

I certify that I attached a label with the unique LIMS number to each container (intial) KD

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:
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: Reid/HMPL Impoundment GW CCR-Round 8	☐ 1 week		
Site: Reid/HMPL Impoundment	☐ 2 days		
P O #: Purchase Order-see DOCs	☐ 1 day		

COC No: 490-72397-21290.1
___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	9040C, 9056_ORGFM_28D	2540C_Calcd_TDS	Sample Specific Notes:
MW-7	9/22/17	1210	G	Water	6	N	N	x	x	x	x	
MW-8	9/22/17	1335	G	Water	6	N	N	x	x	x	x	
MW-9	9/22/17	1458	G	Water	6	N	N	x	x	x	x	
MW-10	9/22/17	1545	G	Water	6	N	N	x	x	x	x	
DUPE	9/22/17	1408	G	Water	6	N	N	x	x	x	x	
FIELD BLANK	9/22/17	1621	G	Water	6	N	N	x	x	x	x	
								4	4	1	1	

Loc: 490
137404

1 2 3 4 Page 36 of 44

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: 3.2, 0.5	Corr'd: _____	Therm ID No.: _____
Relinquished by: Mary Quick	Company: BREC	Date/Time: 9/25/2017 1130	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Keith Austin	Company: TAN	Date/Time: 09-26-2017 09:15

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016

10/26/2017

40 CFR PART 257 Constituent List:

Loc: 490
137404

Appendix III to Part 257

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Mary Quick
BREC
9/25/2017
1130

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: 490-63268.1
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 #: 490-137404-1
Address: 13715 Rider Trail North,	Due Date Requested: 10/24/2017			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #			
Email:	WO #			
Project Name: Reid/HMPL Impoundment GW CCR-Round 8	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)	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-7 (490-137404-1)	9/22/17	12:10 Central		Water			X	X	X	2	Historical Review required
MW-8 (490-137404-2)	9/22/17	13:35 Central		Water			X	X	X	2	Historical Review required
MW-9 (490-137404-3)	9/22/17	14:58 Central		Water			X	X	X	2	Historical Review required
MW-10 (490-137404-4)	9/22/17	15:45 Central		Water			X	X	X	2	Historical Review required
DUPE (490-137404-5)	9/22/17	14:08 Central		Water			X	X	X	2	Historical Review required
FIELD BLANK (490-137404-6)	9/22/17	16:21 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 compliance 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: 9.27.17	Company: TAN	Received by:	Date/Time: 9/28/17 0900	Company: TASR
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

10/26/2017

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 490-63249.1
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 #: 490-137404-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/19/2017			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: Reid/HMPL Impoundment GW CCR-Round 8	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)	6020A/3005A (MOD) ICP/MS Metals	6010C/3005A (MOD) Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-7 (490-137404-1)	9/22/17	12:10 Central		Water			X	X	1	Metals - run once, upload together.
MW-8 (490-137404-2)	9/22/17	13:35 Central		Water			X	X	1	Metals - run once, upload together.
MW-9 (490-137404-3)	9/22/17	14:58 Central		Water			X	X	1	Metals - run once, upload together.
MW-10 (490-137404-4)	9/22/17	15:45 Central		Water			X	X	1	Metals - run once, upload together.
DUPE (490-137404-5)	9/22/17	14:08 Central		Water			X	X	1	Metals - run once, upload together.
FIELD BLANK (490-137404-6)	9/22/17	16:21 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:	Date/Time:	Company	Received by:	Date/Time:	Company
	9.27.17	TAN		9/28/17 0900	
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: 490-137404-1
SDG Number: Reid/HMPL Impoundment

Login Number: 137404
List Number: 1
Creator: Dawson, Keith M

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").	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: 490-137404-1
SDG Number: Reid/HMPL Impoundment

Login Number: 137404
List Number: 2
Creator: Skowronek, Elyse N

List Source: TestAmerica Pittsburgh
List Creation: 09/28/17 10:58 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.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.1
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: 490-137404-1
SDG Number: Reid/HMPL Impoundment

Login Number: 137404
List Number: 3
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 09/28/17 03:50 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	17,1.7
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: Reid/HMPL Impoundment GW CCR-Round 8

TestAmerica Job ID: 490-137404-1
SDG: Reid/HMPL Impoundment

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
490-137404-1	MW-7	97.9
490-137404-2	MW-8	101
490-137404-3	MW-9	104
490-137404-4	MW-10	102
490-137404-5	DUPE	101
490-137404-6	FIELD BLANK	107
LCS 160-329692/2-A	Lab Control Sample	103
LCSD 160-329692/3-A	Lab Control Sample Dup	104
MB 160-329692/1-A	Method Blank	101

Tracer/Carrier Legend

Ba = 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 (40-110)	Y (40-110)
490-137404-1	MW-7	97.9	81.5
490-137404-2	MW-8	101	81.1
490-137404-3	MW-9	104	83.4
490-137404-4	MW-10	102	76.6
490-137404-5	DUPE	101	80.0
490-137404-6	FIELD BLANK	107	84.9
LCS 160-329694/2-A	Lab Control Sample	103	78.5
LCSD 160-329694/3-A	Lab Control Sample Dup	104	82.6
MB 160-329694/1-A	Method Blank	101	82.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = 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: 490-138677-1
TestAmerica Sample Delivery Group: Reid/HMPL Impoundment
Client Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

For:
Big Rivers Electric Corporation
PO BOX 24
Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:
10/24/2017 4:23:34 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@testamericainc.com

LINKS
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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-138677-1	MW -7	Water	10/11/17 11:45	10/13/17 15:56
490-138677-2	MW -8	Water	10/11/17 13:20	10/13/17 15:56
490-138677-3	MW -9	Water	10/11/17 14:20	10/13/17 15:56
490-138677-4	MW -10	Water	10/11/17 15:25	10/13/17 15:56
490-138677-5	DUPE	Water	10/11/17 14:28	10/13/17 15:56
490-138677-6	FIELD BLANK	Water	10/11/17 15:38	10/13/17 15:56

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

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.
F1	MS and/or MSD Recovery is outside acceptance limits.

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 -7

Date Collected: 10/11/17 11:45
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.65	B	3.00	0.200	mg/L			10/16/17 13:41	1
Fluoride	0.295	J	1.00	0.0100	mg/L			10/16/17 13:41	1
Sulfate	14.2	F1	5.00	0.0300	mg/L			10/16/17 13:41	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.320	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 21:24	1
Calcium	41.8	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.16		0.100	0.100	SU			10/17/17 11:51	1
Temperature	19.1		0.100	0.100	Degrees C			10/17/17 11:51	1
Total Dissolved Solids	278		10.0	7.00	mg/L			10/17/17 18:04	1

Client Sample ID: MW -8

Date Collected: 10/11/17 13:20
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.6	B	15.0	1.00	mg/L			10/17/17 11:46	5
Fluoride	0.441	J	1.00	0.0100	mg/L			10/16/17 14:53	1
Sulfate	1040		500	3.00	mg/L			10/17/17 12:04	100

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.54		1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 21:49	1
Calcium	235	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.08		0.100	0.100	SU			10/17/17 11:51	1
Temperature	19.6		0.100	0.100	Degrees C			10/17/17 11:51	1
Total Dissolved Solids	2100		20.0	14.0	mg/L			10/17/17 18:04	1

Client Sample ID: MW -9

Date Collected: 10/11/17 14:20
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.83	B	3.00	0.200	mg/L			10/16/17 16:05	1
Fluoride	0.198	J	1.00	0.0100	mg/L			10/16/17 16:05	1
Sulfate	0.265	J	5.00	0.0300	mg/L			10/16/17 16:05	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0816	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 21:54	1
Calcium	57.0	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.17		0.100	0.100	SU			10/17/17 11:51	1
Temperature	19.4		0.100	0.100	Degrees C			10/17/17 11:51	1
Total Dissolved Solids	316		10.0	7.00	mg/L			10/17/17 18:04	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW -10

Date Collected: 10/11/17 15:25
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.8	B	6.00	0.400	mg/L			10/17/17 12:22	2
Fluoride	0.585	J	1.00	0.0100	mg/L			10/16/17 16:41	1
Sulfate	147		100	0.600	mg/L			10/16/17 17:00	20

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.637	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 22:12	1
Calcium	11.9	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.98		0.100	0.100	SU			10/17/17 11:51	1
Temperature	19.4		0.100	0.100	Degrees C			10/17/17 11:51	1
Total Dissolved Solids	728		10.0	7.00	mg/L			10/15/17 21:22	1

Client Sample ID: DUPE

Date Collected: 10/11/17 14:28
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.84	B	3.00	0.200	mg/L			10/16/17 17:18	1
Fluoride	0.197	J	1.00	0.0100	mg/L			10/16/17 17:18	1
Sulfate	0.206	J	5.00	0.0300	mg/L			10/16/17 17:18	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0790	J	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 22:16	1
Calcium	58.1	B	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.48		0.100	0.100	SU			10/17/17 11:51	1
Temperature	19.7		0.100	0.100	Degrees C			10/17/17 11:51	1
Total Dissolved Solids	306		10.0	7.00	mg/L			10/15/17 21:22	1

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

Client Sample ID: FIELD BLANK

Date Collected: 10/11/17 15:38
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.402**	**J B**	3.00	0.200	mg/L			10/16/17 17:54	1
Fluoride	ND		1.00	0.0100	mg/L			10/16/17 17:54	1
Sulfate	ND		5.00	0.0300	mg/L			10/16/17 17:54	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.0109**	**J**	1.00	0.00339	mg/L		10/18/17 12:13	10/23/17 22:21	1
Calcium	**0.0854**	**J B**	1.00	0.0412	mg/L		10/18/17 12:13	10/19/17 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.55**		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	ND		10.0	7.00	mg/L			10/15/17 21:22	1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-468282/3
Matrix: Water
Analysis Batch: 468282

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4634	J	3.00	0.200	mg/L			10/16/17 11:16	1
Fluoride	ND		1.00	0.0100	mg/L			10/16/17 11:16	1
Sulfate	ND		5.00	0.0300	mg/L			10/16/17 11:16	1

Lab Sample ID: LCS 490-468282/4
Matrix: Water
Analysis Batch: 468282

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	9.502		mg/L		95	80 - 120
Fluoride	1.00	0.9013	J	mg/L		90	80 - 120
Sulfate	10.0	9.460		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-468282/5
Matrix: Water
Analysis Batch: 468282

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	9.394		mg/L		94	80 - 120	1	20
Fluoride	1.00	0.8925	J	mg/L		89	80 - 120	1	20
Sulfate	10.0	9.331		mg/L		93	80 - 120	1	20

Lab Sample ID: 490-138677-1 MS
Matrix: Water
Analysis Batch: 468282

Client Sample ID: MW -7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.65	B	10.0	14.12		mg/L		105	80 - 120
Fluoride	0.295	J	1.00	1.307		mg/L		101	80 - 120

Lab Sample ID: 490-138677-1 MSD
Matrix: Water
Analysis Batch: 468282

Client Sample ID: MW -7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.65	B	10.0	15.14		mg/L		115	80 - 120	7	20
Fluoride	0.295	J	1.00	1.465		mg/L		117	80 - 120	11	20

Lab Sample ID: MB 490-468519/3
Matrix: Water
Analysis Batch: 468519

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4483	J	3.00	0.200	mg/L			10/17/17 10:52	1
Sulfate	ND		5.00	0.0300	mg/L			10/17/17 10:52	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-468519/4
Matrix: Water
Analysis Batch: 468519

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	9.103		mg/L		91	80 - 120
Sulfate	10.0	8.988		mg/L		90	80 - 120

Lab Sample ID: LCSD 490-468519/5
Matrix: Water
Analysis Batch: 468519

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	9.335		mg/L		93	80 - 120	3	20
Sulfate	10.0	9.144		mg/L		91	80 - 120	2	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: 490-138677-1 MS
Matrix: Water
Analysis Batch: 226406

Client Sample ID: MW -7
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: 490-138677-1 MS
Matrix: Water
Analysis Batch: 226796

Client Sample ID: MW -7
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: 490-138677-1 MSD
Matrix: Water
Analysis Batch: 226406

Client Sample ID: MW -7
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: 490-138677-1 MSD
Matrix: Water
Analysis Batch: 226796

Client Sample ID: MW -7
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 490-468491/1
Matrix: Water
Analysis Batch: 468491

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: 490-138671-E-1 DU
Matrix: Water
Analysis Batch: 468491

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	1.98			1.980		SU				0	20
Temperature	19.9			19.90		Degrees C				0	20

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

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: 490-138677-1 DU
Matrix: Water
Analysis Batch: 467451

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	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: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

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: 468282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-1	MW -7	Total/NA	Water	9056A	
490-138677-2	MW -8	Total/NA	Water	9056A	
490-138677-3	MW -9	Total/NA	Water	9056A	
490-138677-4	MW -10	Total/NA	Water	9056A	
490-138677-4	MW -10	Total/NA	Water	9056A	
490-138677-5	DUPE	Total/NA	Water	9056A	
490-138677-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-468282/3	Method Blank	Total/NA	Water	9056A	
LCS 490-468282/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-468282/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-138677-1 MS	MW -7	Total/NA	Water	9056A	
490-138677-1 MSD	MW -7	Total/NA	Water	9056A	

Analysis Batch: 468519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-2	MW -8	Total/NA	Water	9056A	
490-138677-2	MW -8	Total/NA	Water	9056A	
490-138677-4	MW -10	Total/NA	Water	9056A	
MB 490-468519/3	Method Blank	Total/NA	Water	9056A	
LCS 490-468519/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-468519/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 226239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-1	MW -7	Total Recoverable	Water	3005A	
490-138677-2	MW -8	Total Recoverable	Water	3005A	
490-138677-3	MW -9	Total Recoverable	Water	3005A	
490-138677-4	MW -10	Total Recoverable	Water	3005A	
490-138677-5	DUPE	Total Recoverable	Water	3005A	
490-138677-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-226239/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-226239/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-138677-1 MS	MW -7	Total Recoverable	Water	3005A	
490-138677-1 MSD	MW -7	Total Recoverable	Water	3005A	

Analysis Batch: 226406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-1	MW -7	Total Recoverable	Water	6020A	226239
490-138677-2	MW -8	Total Recoverable	Water	6020A	226239
490-138677-3	MW -9	Total Recoverable	Water	6020A	226239
490-138677-4	MW -10	Total Recoverable	Water	6020A	226239
490-138677-5	DUPE	Total Recoverable	Water	6020A	226239
490-138677-6	FIELD BLANK	Total Recoverable	Water	6020A	226239
MB 180-226239/1-A	Method Blank	Total Recoverable	Water	6020A	226239
LCS 180-226239/2-A	Lab Control Sample	Total Recoverable	Water	6020A	226239
490-138677-1 MS	MW -7	Total Recoverable	Water	6020A	226239
490-138677-1 MSD	MW -7	Total Recoverable	Water	6020A	226239

Metals (Continued)

Analysis Batch: 226796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-1	MW -7	Total Recoverable	Water	6020A	226239
490-138677-2	MW -8	Total Recoverable	Water	6020A	226239
490-138677-3	MW -9	Total Recoverable	Water	6020A	226239
490-138677-4	MW -10	Total Recoverable	Water	6020A	226239
490-138677-5	DUPE	Total Recoverable	Water	6020A	226239
490-138677-6	FIELD BLANK	Total Recoverable	Water	6020A	226239
MB 180-226239/1-A	Method Blank	Total Recoverable	Water	6020A	226239
LCS 180-226239/2-A	Lab Control Sample	Total Recoverable	Water	6020A	226239
490-138677-1 MS	MW -7	Total Recoverable	Water	6020A	226239
490-138677-1 MSD	MW -7	Total Recoverable	Water	6020A	226239

General Chemistry

Analysis Batch: 467451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-1	MW -7	Total/NA	Water	SM 2540C	
490-138677-2	MW -8	Total/NA	Water	SM 2540C	
490-138677-3	MW -9	Total/NA	Water	SM 2540C	
MB 490-467451/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-467451/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-467451/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-138677-1 DU	MW -7	Total/NA	Water	SM 2540C	
490-138830-I-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 467453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-4	MW -10	Total/NA	Water	SM 2540C	
490-138677-5	DUPE	Total/NA	Water	SM 2540C	
490-138677-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-467453/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-467453/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-467453/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
490-138490-K-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-138580-K-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 468491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-1	MW -7	Total/NA	Water	9040C	
490-138677-2	MW -8	Total/NA	Water	9040C	
490-138677-3	MW -9	Total/NA	Water	9040C	
490-138677-4	MW -10	Total/NA	Water	9040C	
490-138677-5	DUPE	Total/NA	Water	9040C	
LCS 490-468491/1	Lab Control Sample	Total/NA	Water	9040C	
490-138671-E-1 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 469806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-138677-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-469806/1	Lab Control Sample	Total/NA	Water	9040C	
490-138628-B-5 DU	Duplicate	Total/NA	Water	9040C	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

Client Sample ID: MW -7

Date Collected: 10/11/17 11:45
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-1

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			468282	10/16/17 13:41	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 10:27	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 21:24	WTR	TAL PIT
Total/NA	Analysis	9040C		1			468491	10/17/17 11:51	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Client Sample ID: MW -8

Date Collected: 10/11/17 13:20
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-2

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			468282	10/16/17 14:53	JHS	TAL NSH
Total/NA	Analysis	9056A		5			468519	10/17/17 11:46	JHS	TAL NSH
Total/NA	Analysis	9056A		100			468519	10/17/17 12:04	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 10:41	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 21:49	WTR	TAL PIT
Total/NA	Analysis	9040C		1			468491	10/17/17 11:51	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 -9

Date Collected: 10/11/17 14:20
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-3

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			468282	10/16/17 16:05	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 10:43	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 21:54	WTR	TAL PIT
Total/NA	Analysis	9040C		1			468491	10/17/17 11:51	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	467451	10/17/17 18:04	AEC	TAL NSH

Client Sample ID: MW -10

Date Collected: 10/11/17 15:25
Date Received: 10/13/17 15:56

Lab Sample ID: 490-138677-4

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			468282	10/16/17 16:41	JHS	TAL NSH

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20			468282	10/16/17 17:00	JHS	TAL NSH
Total/NA	Analysis	9056A		2			468519	10/17/17 12:22	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 10:46	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 22:12	WTR	TAL PIT
Total/NA	Analysis	9040C		1			468491	10/17/17 11:51	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: DUPE

Lab Sample ID: 490-138677-5

Date Collected: 10/11/17 14:28

Matrix: Water

Date Received: 10/13/17 15:56

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			468282	10/16/17 17:18	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 10:54	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 22:16	WTR	TAL PIT
Total/NA	Analysis	9040C		1			468491	10/17/17 11:51	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: FIELD BLANK

Lab Sample ID: 490-138677-6

Date Collected: 10/11/17 15:38

Matrix: Water

Date Received: 10/13/17 15:56

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			468282	10/16/17 17:54	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 10:57	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 22:21	WTR	TAL PIT
Total/NA	Analysis	9040C		1			469806	10/22/17 12:55	TMG	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	467453	10/15/17 21:22	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: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

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: Reid/HMPL Impoundment GW CCR-Round 9

TestAmerica Job ID: 490-138677-1
SDG: Reid/HMPL Impoundment

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	12-31-17
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	01-31-18
Wisconsin	State Program	5	998027800	08-31-18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FOR

490-138677 Chain of Custody

Cooler Received/Opened On 10/13/2017 @0925

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 0149 (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: 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: 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) ES

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) 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 (intial) ES

I certify that I attached a label with the unique LIMS number to each container (intial) ES

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# ES

BIS = Broken in shipment

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Nashville, TN

Bottle Order Manifest

Thank you for choosing TestAmerica (Nashville Division) for your analytical needs and bottle supplies! We are committed to providing you with certified clean (Level 3 certified) bottles with the proper preservative labels as well as excellent customer service. If you have any questions about this order, please call your TestAmerica Project Manager at 1-800-765-0980. Thanks again for choosing TestAmerica!

The following paperwork is for your informational purposes on helpful tips for shipping as well as some of the reasons for the extra bottles or procedures needed for proper collection of samples. If the custody seal on the cooler is broken, please contact us. Again, if you have any questions, please call your TestAmerica Project Manager at 1-800-765-0980.

Shipping Cooler Checklist

- Bottle Order Requisition – This paperwork gives you information on what bottle is for what type of sample and how many bottles to collect.
- Cooler is properly labeled for outbound shipping and contains the proper labels for return shipping. (These are Custody seals, Return Labels, Custody seal, and Wet Ice Stickers).
- Extra sample labels, bottles (if applicable), and COC forms (blank) are provided with this order.
- Initials of the Shipping Personnel who hand-packed this order. Each order is verified for accuracy and completeness.

We ask that you return your samples in the same manner in which they were shipped to you with loose wet ice added. This will help ensure bottle breakage is kept to a minimum.

SAMPLES MUST BE SEALED IN THE SUPPLIED COOLER LINER BEFORE RELINQUISHED TO THE OVERNIGHT CARRIER. LEAKING COOLERS MAY BE DELAYED OR HELD FOR DELIVERY.

ALERT:

*****Do Not use DRY ICE unless the cooler has been packed and labeled in accordance to DOT and IATA regulations.*****

Why use Wet Ice vs. Other cooling forms (Blue Ice)?

Our bottles are all watertight and all glass bottles are lined with Teflon lined caps that prevent cross contamination of samples if properly sealed. Therefore, the use of wet ice loosely in the provided large cooler liner is recommended. If the samples are packed with wet ice properly, the samples will achieve the required temperature of 6 degrees Celsius or less when they are received by the lab, even in the warmer months. Please do make sure you use plenty of wet ice. We recommend that the cooler be refilled with fresh wet ice to the top rim before the samples are shipped if the ice has started to melt. Samples that do not arrive to the lab at the proper temperature are required to be documented on our analytical reports if the test has temperature requirements. Blue ice is NOT recommended because it does not have the cooling capacity nor the area affect that wet ice does. Wet ice provides the quickest and greatest ability to achieve the proper temperature requirements for our testing. Once properly packed, please close the large cooler liner with samples and ice included inside with a knot. There should be a lining of bubble wrap on the inside bottom and inside top of each returning cooler.

www.aphis.usda.gov/ppq/ispm/fireants/index.html
www.aphis.usda.gov/ppq/maps.html (The map of affected states/counties are found here.)

The USDA requires that a PPQ Form 550 be placed on the outside of each cooler containing soil samples from the affected U.S. locations and all foreign countries. PPQ Form 550's may have been provided with your bottle order kit in the large ziplock bag. If you did not receive a PPQ Form 550 and are affected by these regulations, please contact the lab and we will ship the necessary forms to you.

Consult your State or Federal plant protection inspector or your county agent for assistance regarding exact areas under USDA regulation and requirements for moving regulated articles. For detailed information, see 7 CFR 301.81.

If you have any questions, please contact your project manager at the laboratory.

Ethylene Dibromide (EDB)/ 1,2-Dibromo-3-Chloropropane (DBCP)/ 1,2,3-Trichloropropane Analysis Method 504.1 or SW-846 8011:

If your samples need the above analysis and are drinking water samples, you will need to treat your sample(s) with the provided clear vials of Sodium Thiosulfate prior to putting them in the amber 40-mL HCl (blue label) vials. This treats the sample for residual chlorine which can interfere with this analysis. To treat your sample, put the fresh sample in the clear vials with Thiosulfate crystals, cap the vial, and slowly invert to dissolve the crystals then transfer the sample to the HCl preserved vials.

Groundwaters should not have the presence of residual chlorine, but if your site does, please treat the sample in the same manner as listed above for drinking water samples. This again is to provide better analytical data with fewer possible matrix interferences.

Volatile Analysis Trip Blanks (Holding Time):

Trip Blanks are to be used when analyzing volatile organic compounds (i.e. Method 601,602, 8021, 8260, SM6210, etc...). TestAmerica provides one trip blank (40-mL VOA vial with HCL Preservative) per cooler at no additional cost to you. If you want us to test the trip blank, please note this on your Chain-of-Custody (COC) papers.

Trip blank vials are to be considered contaminate free only up to 45 days after the date prepared (this date is labeled on the vial label). Laboratory analysis should be scheduled to occur within that timeframe. Please do not stockpile Trip Blanks for long term use.

Matrix Spike/Matrix Spike Duplicate Samples – Needed for Laboratory Requirements

ALERT Samplers

TestAmerica provides **additional sample bottles** in this container order for the possible use of your samples as internal QA/QC samples.

Please collect one of your samples out of every twenty samples in triplicate volume with the bottles provided for this purpose. Failure to do so may result in notations on your analytical report of "insufficient sample volumes provided for MS/MSD analysis...." Please only note on the COC which sample was collected in triplicate as the lab will properly assign which sample will be used for MS/MSD analysis, unless your project

One consideration in collecting a drinking water sample for metals is the type of sample. For worst case results, collect the first flush water from the source after it has been out of use for at least six hours. For average case results, collect the water sample after running the water for 10 minutes. For first flush samples, EPA recommends collecting a one-liter sample from a faucet and a 250-milliliter sample from a drinking water fountain.

Chloride, Fluoride, Hardness, Surfactants, pH, Sulfate, Dissolved Solids, Turbidity, Chlorine Residual

Samples for each of these tests may be collected in a plastic container. The lab will provide containers with correct volumes. No preservatives are required, but the **samples must be kept cold at 4 degrees C.** For odor, an amber-glass container should be used. Record on the Chain of Custody the exact time and date of collection. Holding times are as follows:

Hardness	6 months
Chloride, Fluoride, Sulfate	28 days
Surfactants, Turbidity	48 hours
Dissolved Solids	7 days
pH, Chlorine Residual	15 minutes

Volatile Organics

A sample for volatiles is collected in two 40-milliliter, glass vials with Teflon-lined septa. If residual chlorine is suspected in the water source, add sodium thiosulfate or ascorbic acid crystals to the vials. Place sample in vial. After crystals dissolve, transfer the sample to acid preserved vials. Fill the vials very slowly and carefully so as not to lose the preservative. The vials cannot have an air bubble in them. Once filled and capped, turn the vial horizontally to see if there is an air bubble. If one exists, uncap and fill the vial a little more until successful. Once collected, immediately **refrigerate or put on ice** for transport to the lab as soon as possible. **The maximum holding time is 14 days.** Record on the Chain of Custody the exact time and date of collection.

Semivolatile Organics, Pesticides, PCBs, or Herbicides

A sample to be tested for any of these organic categories should be collected in three one-liter, amber-glass containers per method. No chemical preservative is required, but the samples must be **refrigerated or put on ice. They must be extracted within seven days to meet holding time requirements.** Record on the Chain of Custody the exact time and date of collection.

For drinking water samples, always provide the following information:

1. Designation of the sample as a drinking water sample on the container and on the Chain of Custody.
2. **Exact time and date of collection.**
3. **A signed record of each and every person in possession of the samples.**
4. **An exact description of the sampling location, e. g., "first-flush sample at the kitchen cold water tap."**
5. **The PWSID number and the county where the sample was collected, if data is to be reported to the state.**

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody

490-138677

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other

TestAmerica Laboratories, Inc.

Client Contact: Bradley Coyle	**Project Manager: Bradley Coyle**	**Site Contact: Greg Dick**	**Date: 10/12/2017**	COC No:
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: Reid/HMPL Impoundment GW CCR-Round 9	☐ 1 week			
Site: Reid/HMPL Impoundment	☐ 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)	2540C_Calcd - TDS	6020A - BORON & CALCIUM	9040C, 9056A_ORGFM_28D	Sample Specific Notes:
MW-7	10/11/17	1145	G	Water	3	N	N	x	x	x	
MW-8	10/11/17	1320	G	Water	3	N	N	x	x	x	
MW-9	10/11/17	1420	G	Water	3	N	N	x	x	x	
MW-10	10/11/17	1525	G	Water	3	N	N	x	x	x	
DUPE	10/11/17	1428	G	Water	3	N	N	x	x	x	
FIELD BLANK	10/11/17	1538	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	

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: 1	Therm ID No.: _____	
Relinquished by: Greg Dick	Company: BREC	Date/Time: 1308 10/12/2017	Received by:	Company: TAN	Date/Time: 10-13-17	9:25
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: -03	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 Dick
BREC
10/12/2017
1308

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-138677-02 Chain of Custody

Cooler Received/Opened On 10/13/17 0925

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 0860 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 31470368 pH Strip Lot _____ Chlorine Strip Lot _____

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: 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) KZG

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) ADH

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) ADH

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) ADH

I certify that I attached a label with the unique LIMS number to each container (intial) ADH

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
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record

490-138677 Chain of Custody

merica
VIRONMENTAL TESTING

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)	Job #: 490-138677-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 10/25/2017		
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
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)	6020A/3005A (MOD) B + Ca	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW -7 (490-138677-1)	10/11/17	11:45 Eastern		Water			X	1	Metals - run once, upload together.
MW -8 (490-138677-2)	10/11/17	13:20 Eastern		Water			X	1	Metals - run once, upload together.
MW -9 (490-138677-3)	10/11/17	14:20 Eastern		Water			X	1	Metals - run once, upload together.
MW -10 (490-138677-4)	10/11/17	15:25 Eastern		Water			X	1	Metals - run once, upload together.
DUPE (490-138677-5)	10/11/17	14:28 Eastern		Water			X	1	Metals - run once, upload together.
FIELD BLANK (490-138677-6)	10/11/17	15:38 Eastern		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
	10.16.17	TAW		10-17-17 905	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:

10/24/2017

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-138677-1
SDG Number: Reid/HMPL Impoundment

Login Number: 138677
List Number: 1
Creator: Stewart, Eric S

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: 490-138677-1
SDG Number: Reid/HMPL Impoundment

Login Number: 138677
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

GREEN STATION LANDFILL

1.0 GREEN 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 Green landfill, monitoring well MW-1 is designated as the background well because it is located upgradient, whereas monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6 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 (EPA) Final Coal Combustion Residual (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 March 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 calcium, chloride, sulfate, and total dissolved solids (TDS) at monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6 have SSIs over background that was confirmed by subsequent sampling events (**Table 2**). pH at monitoring wells MW-2, MW-3A, MW-4, and MW-6 had a SSI below its lower prediction limit (LPL) that was confirmed by subsequent sampling events. Boron, fluoride, and pH 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/Yes	Parametric	2.20
Calcium (mg/L)	9	0	Yes/Yes	Parametric	35.7
Chloride (mg/L)	9	0	Yes/No	Parametric	9.6
Fluoride (mg/L)	9	0	No/No	Nonparametric	0.88
pH (std units)	9	0	Yes/Yes	Parametric	7.10/7.77
Sulfate (mg/L)	9	0	Yes/Yes	Parametric	28.4
TDS (mg/L)	9	0	Yes/Yes	Parametric	647

Table 2 Big Rivers Green Landfill SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-1	Upgradient	P	P	P	NP	P	P	P	P
MW-2	Downgradient								
MW-3A	Downgradient								
MW-4	Downgradient								
MW-5	Downgradient								
MW-6	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-1 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

GREEN STATION SURFACE IMPOUNDMENT

1.0 GREEN SURFACE IMPOUNDMENT 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 Green surface impoundment, monitoring well MW-11 is designated as the background well because it is located upgradient, whereas monitoring wells MW-12, MW-13, and MW-14 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 (EPA) Final Coal Combustion Residual (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 none of the Appendix III constituents (boron, calcium, chloride, fluoride, pH, sulfate or total dissolved solids [TDS]) have verified SSIs over the background UPL (**Table 2**). None of the pH results had a verified SSI below its background lower prediction limit (LPL). Based on these results, assessment monitoring is not currently required at the surface impoundment.

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/Yes	Parametric	0.92
Calcium (mg/L)	9	0	Yes/Yes	Parametric	398
Chloride (mg/L)	9	0	Yes/Yes	Parametric	2,508
Fluoride (mg/L)	9	0	Yes/Yes	Parametric	0.89
pH (std units)	9	0	No/No	Nonparametric	6.77/7.29
Sulfate (mg/L)	9	0	Yes/Yes	Parametric	1,506
TDS (mg/L)	9	0	Yes/Yes	Parametric	5,459

Note pH has a lower and upper background limit.

Table 2 Big Rivers Green Surface Impoundment SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-11	Upgradient	P	P	P	P	P	P	P	P
MW-12	Downgradient								
MW-13	Downgradient								
MW-14	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-11 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

REID/HMPL STATION SURFACE IMPOUNDMENT

1.0 REID/HMPL SURFACE IMPOUNDMENT 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 Reid/HMPL surface impoundment, monitoring well MW-7 is designated as the background well because it is located upgradient, whereas monitoring wells MW-8, MW-9, 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 (EPA) Final Coal Combustion Residual (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 March 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, fluoride, sulfate, and total dissolved solids (TDS) at monitoring well MW-8; calcium, chloride, and TDS at monitoring well MW-9; and boron, chloride, fluoride, pH, 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 also has a SSI below its background lower prediction limit (LPL) that was verified by subsequent sampling events. Based on these results, assessment monitoring or an alternate source demonstration is required at the surface impoundment 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/Yes	Parametric	0.34
Calcium (mg/L)	9	0	No/No	Nonparametric	47.1
Chloride (mg/L)	9	0	Yes/Yes	Parametric	6.25
Fluoride (mg/L)	9	0	Yes/Yes	Parametric	0.36
pH (std units)	9	0	Yes/Yes	Parametric	6.91/7.76
Sulfate (mg/L)	9	0	Yes/Yes	Parametric	27.4
TDS (mg/L)	9	0	Yes/Yes	Parametric	303

Table 2 Big Rivers Reid/HMPL Surface Impoundment SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-7	Upgradient	P	NP	P	P	P	P	P	P
MW-8	Downgradient								
MW-9	Downgradient								
MW-10	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-7 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