2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

MISSISSIPPI POWER COMPANY
PLANT VICTOR DANIEL
ASH POND B

January 31, 2020

Prepared for

Mississippi Power Company
Gulfport, Mississippi

By

Southern Company Services
Earth Science and Environmental Engineering

Mississippi Power

CERTIFICATION STATEMENT

This 2019 Annual Groundwater Monitoring and Corrective Action Report, Mississippi Power Company – Plant Daniel Ash Pond B has been prepared to comply with the United States Environmental Protection Agency coal combustion residual rule (40 Code of Federal Regulations (CFR) Part 257, Subpart D) under the supervision of a licensed Professional Geologist with Southern Company Services.

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1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations (CFR) 257, Subpart D), Southern Company Services (SCS) has prepared this *2019 Annual Groundwater Monitoring and Corrective Action Report* to document groundwater monitoring activities at Mississippi Power Company (MPC) Plant Daniel (Site) Ash Pond B (AP-B).

Groundwater monitoring and reporting for the CCR unit is performed in accordance with the monitoring requirements of 40 CFR 257.90 through 257.95 of the Federal CCR rule. This report has been prepared to document the 2019 initial assessment sampling event and subsequent semi-annual groundwater monitoring events at the AP-B and to satisfy the requirements of § 257.90(e). Initial assessment monitoring, semi-annual monitoring, and associated reporting for AP-B is performed in accordance with the monitoring requirements § 257.90 through § 257.95.

2.0 SITE DESCRIPTION

The Site is located within Section 35, Township 5 South, Range 6 West, Sections 37, 10, 15, East half of Section 9, Southwest ¼ of Section 2, NW ¼ and south half of Section 11, and the north half and NW ¼ of the SW ¼ of Section 14, all of Township 6 South, Range 6 West. The Site is situated immediately northwest of the intersection of Mississippi State Highways 63 and 613, between the Pascagoula River to the west and Highway 63 to the east. The site address is 13201 Highway 63 N, Escatawpa, Mississippi 39562.

AP-B is located to the north of the main plant. **Figure 1, Site Location Map**, depicts the location of Plant Daniel relative to site features and the surrounding area.

2.1 Regional Geology & Hydrogeologic Setting

Jackson County lies in the Pascagoula River Drainage Basin in the Gulf Coastal Plain physiographic province. Topographically, the province is gently rolling to flat with local salt marshes. Rock outcrops are sedimentary in origin and range in age from late Miocene to Recent (Gandl, 1982). A dominant regional structural feature which affects the sediments of Miocene and younger age is the Gulf Coast geosyncline. The sediments dip toward the Gulf of Mexico. Where formations are near the surface, dips are from 15 to 35 feet/mile. Further from the outcrop, dips increase dramatically with depth. Fresh-water aquifers in the Pascagoula area are sand or sand and gravel beds of Miocene age or younger, generally less than 1,000 feet below the surface.

The surface geology of soils near Plant Daniel results from present-day weathering processes dictated by southern Mississippi's semi-tropical climate and the parent geologic materials. The soil profile formed from a wide variety of sediments of recent age, and from Pleistocene terrace deposits. The soils therefore contain sand, silt, clay, gravel and organics.

Studies prepared by Southern Company Services, establish five geologic units underlying the immediate Plant Daniel property:

- Unit 1 is a sandy clay aquitard. The unit is discontinuous across the Plant Daniel site and extends from the surface to approximately 32 feet deep in some areas.
- Unit 2 is a sand aquifer, which extends to approximately 70 feet and is considered the uppermost aquifer for groundwater monitoring purposes.
- Unit 3 is a clay aquitard underlying Unit 2 with thicknesses ranging from 2.5 to 9.5 feet at Plant Daniel.
- Unit 4 is a sand and gravel aquifer with a thickness of 34 feet or greater.
- Unit 5 is a clay aquitard.

2.2 Uppermost Aquifer

Two aquifers supply water to the Pascagoula area. These are the Pliocene-age Citronelle and the Miocene Aquifer System, which includes the Graham Ferry Aquifer. Plant Daniel is located in the Citronelle outcrop area.

The Citronelle Aquifers are the shallowest aquifers in the Pascagoula area. Although principally a sand and gravel formation, the Citronelle is characterized by occasional lenses and layers of clay which may cause semi-artesian conditions. Sediments become coarse near the irregular contact with the underlying Pascagoula or Graham Ferry Formation. Also, the Citronelle and overlying coastal deposits are generally considered one hydrogeologic unit. The Citronelle is primarily a water table aquifer with a saturated thickness of about 45 feet. Recharge is primarily by rainfall which moves vertically and down dip to recharge underlying aquifers and to sustain local streams (Wasson, 1978).

For groundwater monitoring purposes, the Unit 2 sand is the uppermost aquifer screened by site monitoring wells.

3.0 GROUNDWATER MONITORING SYSTEM AND ACTIVITY

Pursuant to § 257.91, MPC installed a groundwater monitoring system at AP-B to monitor groundwater within the uppermost aquifer (Unit 2). The PE-certified groundwater monitoring system for AP-Bis designed to monitor groundwater passing the waste boundary of the CCR unit within the uppermost aquifer. As required by § 257.90(e), the following also describes monitoring-related activities performed during the preceding year.

3.1 Groundwater Monitoring System

The groundwater monitoring network is comprised of 6 monitoring wells. Monitoring well locations are presented on **Figure 2, Monitoring Well Location Map**. **Table 1, Monitoring Well and Piezometer Summary**, summarizes the monitoring well construction details and design purpose for the AP-B.

Monitoring well locations BAW-1 and BAW-2A serve as upgradient locations for the Ash Pond. Upgradient wells are screened within the same uppermost aquifer as downgradient locations and are representative of background groundwater quality at the site. Monitoring well locations BAW-3 through BAW-7 are utilized as downgradient locations for AP-B. Downgradient locations were determined by water level monitoring and potentiometric surface maps constructed for the site.

3.2 Monitoring Well Installation and Maintenance

No new monitoring wells were installed during 2019.

3.3 Assessment Monitoring

Based on results of the 2017 Annual Groundwater and Corrective Action Monitoring Report, Mississippi Power initiated an assessment monitoring program in January 2018. Pursuant to 40 CFR § 257.95(a), monitoring wells were sampled for all Appendix IV parameters in February 2019. Within 90 days of obtaining results, the first semi-annual assessment monitoring event was completed by sampling monitoring wells for Appendix III and detected Appendix IV parameters in April 2019. The semi-annual monitoring was repeated in September pursuant to 40 CFR §257.95(d). A summary of groundwater sampling events completed in 2019 is provided in **Table 2, Compliance Sampling Event Summary**.

Analytical data from the initial assessment and semi-annual monitoring events are included as **Appendix A, Laboratory Analytical and Field Sampling Reports**, in accordance with the requirements of § 257.90(e)(3).

4.0 SAMPLE METHODOLOGY & ANALYSIS

The following describes the methods used to complete groundwater monitoring at AP-B.

4.1 Groundwater Flow Direction, Gradient, and Velocity

Prior to each sampling event, groundwater levels were measured and recorded to the nearest 0.01 foot within a 24-hour period. Groundwater levels recorded during the monitoring events are summarized in **Table 3, Groundwater Elevations Summary - 2019**. Groundwater levels and top of casing elevations were used to calculate groundwater elevation and develop the potentiometric surface elevation contour map provided as **Figures 3 through 5, Potentiometric Surface Contour Map(s)**. As shown on Figures 3 through 5, the general direction of groundwater flow is southwest. The groundwater flow pattern observed during the 2019 monitoring events is consistent with historic observations.

Groundwater flow rates at the site were calculated based on hydraulic gradients, hydraulic conductivity from previous slug test results, and an estimated effective porosity of the screened horizon. Based on slug test data collected from AP-B wells, the average hydraulic conductivity at the site is 25.09 feet per day. The hydraulic gradient was calculated between well pairs shown on **Table 4, Groundwater Flow Velocity Calculations - 2019**. An effective porosity of 0.2 was used based on the default values for effective porosity recommended by USEPA for a silty sand-type soil (U.S. USEPA, 1996).

Horizontal flow velocity was calculated using the commonly-used derivative of Darcy's Law:

$$V = \frac{K * i}{n_e}$$

Where:

V = Groundwater flow velocity $\left(\frac{feet}{day}\right)$
K = Average permeability of the aquifer $\left(\frac{feet}{day}\right)$
i = Horizontal hydraulic gradient
n_e = Effective porosity

Using this equation, groundwater flow velocities are calculated for various areas of the site and are tabulated on **Table 4**.

Groundwater monitoring wells BAW-1 and BAW-5 were used as points for calculating Flow Path A and BAW-3 and BAW-5 were used to calculate Flow Path B. The horizontal hydraulic gradients range from 0.0012 ft/ft to 0.0018 ft/ft. As presented on **Table 4,** groundwater flow velocity at the site ranges from approximately 0.1505 feet/day (or approximately 54.95 feet/year) to 0.2258 feet/day (or approximately

82.42 feet/year) across AP-B. These calculated groundwater flow velocities are consistent with historical calculations and with expected velocities.

4.2 Groundwater Sampling

Groundwater samples were collected from monitoring wells using low-flow sampling procedures in accordance with § 257.93(a). All monitoring wells at the Site are equipped with a dedicated pump. Monitoring wells were purged and sampled using low-flow sampling procedures whereby samples are collected when field water quality parameters (pH, turbidity, conductivity, and dissolved oxygen) were measured to determine stabilization. Groundwater samples were collected when the following stabilization criteria were met:

- 0.2 standard units for pH
- 5% for specific conductance
- 0.2 Mg/L or 10% for DO > 0.5 mg/l (whichever is greater)
- Turbidity measurements less than 5 NTU
- Temperature and ORP – record only, no stabilization criteria

During purging and sampling a SmarTroll instrument was used to monitor and record field parameters. Once stabilization was achieved, samples were collected and submitted to the laboratory following standard chain-of-custody (COC) protocol.

4.3 Laboratory Analysis

Laboratory analyses was performed by Eurofins Environmental Testing TestAmerica, Inc. (TAL) of Pittsburg, Pennsylvannia and St. Louis, Missouri. TAL is accredited by National Environmental Laboratory Accreditation Program (NELAP). TestAmerica maintains a NELAP certification for all parameters analyzed for this project. Groundwater analytical data and chain-of-custody records for the monitoring events are presented in **Appendix A**.

4.4 Quality Assurance and Quality Control

During each sampling event, quality assurance/quality control samples (QA/QC) were collected at a rate of one sample per every 10 detection samples. Equipment blanks and duplicate samples were also collected during each sampling event. QA/QC sample data was evaluated during data validation and is included in **Appendix A**. When values are followed by a "J" flag, this indicates that the value is an estimated analyte concentration detected between the method detection limit (MDL) and the laboratory reporting limit (PQL). The estimated value is positively identified but is below lowest level that can be reliably achieved within specified limits of precision and accuracy under routine laboratory operating conditions.

Analytical precision is measured through the calculation of the relative percent difference (RPD) of two

data sets generated from a similar source. Here, a comparison of results between samples and field duplicate samples are used as measure of laboratory precision. For groundwater analytical data, quality control procedures include calculating the relative percent difference (Where field duplicates are collected, the RPD) between the sample and duplicate sample duplicate concentrations. This is calculated as:

$$RPD = \frac{Conc1 - Conc2}{(Conc1 + Conc2)/2}$$

Where:

RPD = Relative Percent Difference (%)

Conc1 = Higher concentration of the sample or field duplicate

Conc2 = Lower concentration of the sample or field duplicate

Relative percent differences are calculated for all detected concentrations above the laboratory reporting limit (RL). Where the RPD is below 20%, the difference is considered acceptable and no further action is needed. Where an RPD is greater than 20%, further evaluation is required to attempt to determine the cause of the difference and potentially result in qualified data. **Table 5, Relative Percent Difference Calculations**, provides the relative percent differences for sample and sample duplicates during 2019 sampling events.

RPD greater than 20% were noted for TDS in duplicates in both semi-annual events and chromium in the second semi-annual event. However, both results reviewed were less than 5 times the reporting limit (RL) and differences between original and duplicate were less than the RL. Therefore, no validation flag or qualifier was necessary for the TDS and chromium results. Chloride does qualify in the first semi-annual event because RPD is greater than 20% and both results (161 and 8.27 mg/L) are 5 x RL (1 mg/L). A validation flag of (+) J should be applied to this parent/duplicate set for chloride only. Chloride does qualify in the second semi-annual event because RPD is greater than 20% and both results (5.45 and 9.49 mg/L) are 5 x RL (1 mg/L). A validation flag of (+) J should be applied to this parent/duplicate set for chloride only. The (+) J flag indicates these values should be handled as trace values.

5.0 STATISTICAL ANALYSIS

Statistical analysis of Appendix III and IV groundwater monitoring data was performed on samples collected from the certified groundwater monitoring network pursuant to 40 CFR § 257.93 and following the appropriate PE-certified method. The statistical method used at the site was developed by Groundwater Stats Consulting, LLC. (GSC), in accordance with 40 CFR § 257.93(f) using methodology presented in *Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance*, March 2009, EPA 530/R-09-007 (USEPA, 2009). Results are included in **Appendix B, Statistical Data Evaluation.**

5.1 Statistical Methods

The Sanitas groundwater statistical software was used to perform the statistical analysis. Sanitas is a decision support software package that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations.

5.1.1 Appendix III Parameters

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for each of the Appendix III parameters. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter When an initial (or apparent) statistically significant increase or questionable result occurs, a second sample may be collected to verify the initial result or determine if the result was an outlier. If the second sample exceeds its respective background statistical limit, a statistically significant increase (SSI) is identified. If the second sample is below its respective background limit there is no SSI.

A summary table of the statistical limits accompanies the prediction limits in **Appendix B.**

5.1.2 Assessment Monitoring Statistics

Parametric tolerance limits were used to calculate background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. The background limits were then used when determining the groundwater protection standard (GWPS) established under § 257.95(h).

As described in § 257.95(h)(1)-(3), the GWPS is:

(1) The maximum contaminant level (MCL) established under §§ 141.62 and 141.66 of this title.
(2) Where an MCL has not been established:
    (i) Cobalt 0.006 milligrams per liter (mg/L);

(ii) Lead 0.015 mg/L;
(iii) Lithium 0.040 mg/L; and
(iv) Molybdenum 0.100 mg/L.

(3) Background levels for constituents were the background level is higher than the MCL or rule-identified GWPS.

Following the above requirements, GWPS have been established for statistical comparison of Appendix IV constituents. **Table 6, Summary of Background Levels and Groundwater Protection Standards**, summarizes the background limit established at each monitoring well and the GWPS used for statistical comparison. As shown on Table 6, background is less than the rule-identified GWPS; therefore, the rule-identified GWPS were used for statistical analysis.

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV parameters in each downgradient well. Those confidence intervals were compared to the GWPS. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard.

5.2 Statistical Analysis Results

Analytical data from the 2019 semi-annual monitoring events in April and September were statistically analyzed in accordance with the PE-certified Statistical Analysis Plan (October 2017) and Statistical Background Updates (December 2019). Appendix III statistical analysis was performed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were evaluated to determine if concentrations statistically exceeded the established groundwater protection standard.

Based on review of the Appendix III statistical analysis presented in **Appendix B,** Appendix III constituents have not returned to background levels.

5.2.1 First Semi-Annual Assessment Monitoring Event

The first semi-annual assessment monitoring event occurred in April 2019. Appendix IV constituents were identified at statistically significant levels (SSLs) above the established GWPS. Using GWPS established according to 40 CFR §257.95(h), statistical analysis of Appendix IV data identified the following statistical exceedance of a GWPS at the listed well:

- BAW-5: Lithium

In accordance with §257.95(g), a notification identifying the SSLs for lithium was placed in the facility's

Operating Record on November 14, 2018.

5.2.2 Second Semi-Annual Assessment Monitoring Event

The second semi-annual assessment monitoring event occurred in September 2019. Using GWPS established according to 40 CFR §257.95(h), statistical analysis of Appendix IV data identified the following SSL of a GWPS at the listed well:

- BAW-5: Lithium

5.0 ALTERNATE SOURCE DEMONSTRATION

In accordance with 40 CFR § 257.95(g)(3)(ii), an alternate source demonstration (ASD) was prepared for lithium at AP-B. The ASD was completed by July 12, 2019 and is included in **Appendix C, Alternate Source Demonstration**.

In summary, there are multiple lines of evidence that support the conclusion that the SSL of lithium present in compliance monitoring well BAW-5 are not the result of impact by AP-B, but rather are from an alternate source. The following lines of evidence support an ASD for concentrations of lithium in groundwater downgradient of AP-B are:

- AP-B is a lined facility.
- Lithium is documented in literature as occurring naturally in soils regionally at the site.
- Aquifer materials sampled at AP-B yielded lithium concentrations up to 5.77 milligrams per kilogram (mg/kg).
- Groundwater at BAW-5 does not have the same geochemical signature as porewater collected from AP-B.
- Lithium concentrations observed in porewater within AP-B is substantially lower than lithium observed in groundwater samples from BAW-5.

Information presented in the ASD explains that a source other than the CCR unit (AP-B) caused the SSL of lithium found in BAW-5. Therefore, pursuant to §257.95(g)(3)(ii), an assessment of corrective measures is not required, and AP-B will remain in assessment monitoring.

6.0 MONITORING PROGRAM STATUS

In accordance with § 257.94(e) MPC implemented assessment monitoring in January 2018. SSIs of Appendix III and SSLs of Appendix IV parameters were identified at AP-B during sampling events conducted in 2019. An ASD was completed for the Appendix IV constituent exceeding the GWPS in July 12, 2019.

Therefore, in accordance with §257.95(g)(3)(ii), MPC will continue assessment monitoring.

7.0 CONCLUSIONS & FUTURE ACTIONS

Based on the results of statistical analysis presented herein, the site remains in assessment monitoring.

An ASD was prepared to address lithium GWPS exceedances at compliance well BAW-5. The ASD was prepared in accordance with § 257.95(g)(3)(ii).

The annual initial assessment monitoring event is planned for February 2020. The first semi-annual assessment monitoring event is planned for April of 2020.

8.0 REFERENCES

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USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery – Program Implementation and Information Division. March.

USEPA. 2015. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. *40 CFR Parts 257and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule.* [EPA-HQ-RCRA–2009–0640; FRL–9919–44–OSWER]. RIN–2050–AE81. April.

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USEPA. 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Superfund Remediation and Technology Innovation. OLEM 9355.0-135 [EPA-540-R-2017-001]. Washington, DC. January.

Wasson, B.E., 1978, Availability of additional ground-water supplies in the Pascagoula area, Mississippi: Mississippi Research and Development Center Bulletin, 32 p.

Tables

Table 1.
Monitoring Well Network Summary

Well ID	Purpose	Installation Date	Northing	Easting	Total Hole Depth (feet)	Top of Casing Elevation (feet MSL)	Ground Elevation (feet MSL)	Top of Screen Elevation (feet MSL)	Bottom of Screen Elevation (feet MSL)
BAW-1	Upgradient	7/23/2015	378973.19	1071575.49	57.70	32.24	29.22	-23.18	-28.18
BAW-2	Upgradient	7/23/2015	378234.35	1071589.35	62.70	42.43	39.70	-11.80	-21.80
BAW-2A	Upgradient	3/19/2018	378214.26	1071589.08	65.00	41.15	38.22	-15.28	-25.28
BAW-3	Downgradient	7/23/2015	377405.45	1071551.84	65.50	40.62	37.60	-16.70	-26.70
BAW-4	Downgradient	7/23/2015	377377.67	1071040.27	67.10	37.05	34.12	-21.78	-31.78
BAW-5	Downgradient	7/23/2015	377496.76	1070602.22	66.60	39.93	37.41	-18.89	-28.89
BAW-7	Downgradient	7/23/2015	378708.69	1071263.91	60.30	35.05	32.19	-18.01	-28.01
PZ-8	Piezometer	3/14/2018	377423.77	1070652.62	65.50	40.05	37.26	-17.74	-27.74
PZ-9	Piezometer	3/15/2018	377385.47	1070625.84	60.00	39.32	36.50	-13.00	-23.00

Notes:

1. BAW-2 was replaced by BAW-2A due to well damage.
2. Northing and Easting are referenced to MS SPCS (NAD 83) East Zone U.S. Survey Feet (2301).
3. Elevations shown are referenced Mean Sea Level (MSL) to NAVD 88 (G12) U.S. Survey Feet.
4. MSL refers to Mean Sea Level.

Table 2.
Compliance Sampling Event Summary

Well ID	Purpose	Summary of Sampling Events		
		February 11-12, 2019	April 17-18, 2019	September 27-30, 2019
Purpose of Sampling Event		Assessment	2019 Semi-Annual 01	2019 Semi-Annual 02
BAW-1	Upgradient	IAM01	ASM01	ASM02
BAW-2A	Upgradient	IAM01	ASM01	ASM02
BAW-3	Downgradient	IAM01	ASM01	ASM02
BAW-4	Downgradient	IAM01	ASM01	ASM02
BAW-5	Downgradient	IAM01	ASM01	ASM02
BAW-7	Downgradient	IAM01	ASM01	ASM02

Table 3.
Groundwater Elevations Summary - 2019

Well ID	Top of Casing Elevation (feet MSL)	Groundwater Elevations (feet MSL)		
		February 11, 2019	April 17, 2019	September 24, 2019
BAW-1	32.24	9.27	9.14	8.29
BAW-2A	41.15	8.80	8.70	7.90
BAW-3	40.62	8.72	8.55	7.80
BAW-4	37.05	7.55	7.41	6.70
BAW-5	39.93	7.03	6.80	6.09
BAW-7	35.05	8.58	8.51	7.65
PZ-8	40.05	7.20	7.05	6.35
PZ-9	39.32	7.12	7.00	6.32

Notes:

1. MSL refers to Mean Sea Level

Table 4.
Groundwater Flow Velocity Calculations - 2019

Flow Path A								
	BAW-1 h_1 **(ft)**	**BAW-5** h_2 **(ft)**	**Distance** Δl **(ft)**	**Hydraulic Gradient** $\Delta h/\Delta l$ **(ft/ft)**	**Hydraulic Conductivity K**	**Assumed Effective Porosity (ne)**	**Calculated Groundwater Flow Velocity (feet/day)**	**Calculated Groundwater Flow Velocity (feet/year)**
2/11/2019	9.27	7.03	1764	0.0013	25.09	0.2	0.1631	59.53
4/17/2019	9.14	6.80	1764	0.0013	25.09	0.2	0.1631	59.53
9/24/2019	8.29	6.09	1764	0.0012	25.09	0.2	0.1505	54.95

Flow Path B								
	BAW-3 h_1 **(ft)**	**BAW-5** h_2 **(ft)**	**Distance** Δl **(ft)**	**Hydraulic Gradient** $\Delta h/\Delta l$ **(ft/ft)**	**Hydraulic Conductivity K**	**Assumed Effective Porosity (ne)**	**Calculated Groundwater Flow Velocity (feet/day)**	**Calculated Groundwater Flow Velocity (feet/year)**
2/11/2019	8.72	7.03	960	0.0018	25.09	0.2	0.2258	82.42
4/17/2019	8.55	6.80	960	0.0018	25.09	0.2	0.2258	82.42
9/24/2019	7.80	6.09	960	0.0018	25.09	0.2	0.2258	82.42

Notes:
ft=feet
ft/d = feet/day
ft/ft = feet per foot
ft/yr = feet per year

Table 5.
Relative Percent Difference Calculations

1st Semi-Annual Monitoring Event				
Parameter	**Units**	**Monitoring Point Identification**		**Relative Percent Difference (RPD %)**
		BAW-1	**DUP-01**	
Barium	mg/L	0.0305	0.0294	3.7
Calcium	mg/L	0.893	0.866	3.1
Chloride	mg/L	4.99	5.1	2.2
Sulfate	mg/L	1.43	1.39	2.8
TDS	mg/L	16	24	**40.0**

Parameter	**Units**	**Monitoring Point Identification**		**Relative Percent Difference (RPD %)**
		BAW-9	**DUP-02**	
Arsenic	mg/L	0.00146	0.00158	7.9
Barium	mg/L	0.0192	0.0208	8.0
Boron	mg/L	0.14	0.135	3.6
Calcium	mg/L	7.69	7.94	3.2
Chloride	mg/L	161	8.27	**180.5**
TDS	mg/L	56	59	5.2
Lithium	mg/L	0.119	0.116	2.6
Sulfate	mg/L	3.87	3.82	1.3

2nd Semi-Annual Monitoring Event				
Parameter	**Units**	**Monitoring Point Identification**		**Relative Percent Difference (RPD %)**
		BAW-1	**DUP-01**	
Barium	mg/L	0.0319	0.0332	4.0
Calcium	mg/L	0.8	0.845	5.5
Chloride	mg/L	5.08	5.03	1.0
Chromium	mg/L	0.00286	0.00418	**37.5**
TDS	mg/L	26	15	**53.7**
Sulfate	mg/L	1.03	0.884	15.3
Parameter	**Units**	**Monitoring Point Identification**		**Relative Percent Difference (RPD %)**
		BAW-4	**DUP-02**	
Barium	mg/L	0.0103	0.0106	2.9
Calcium	mg/L	3.08	3.17	2.9
Chloride	mg/L	5.45	9.49	**54.1**
Lithium	mg/L	0.0249	0.0261	4.7
Sulfate	mg/L	2.34	2.78	17.2

Table 6.
Summary of Background Levels and Groundwater Protection Standards

Analyte	Units	Background	Rule-Identified GWPS
Antimony	mg/L	0.0025	0.006
Arsenic	mg/L	0.00125	0.01
Barium	mg/L	0.04087; 0.04095	2
Beryllium	mg/L	0.0025	0.004
Cadmium	mg/L	0.0025	0.005
Chromium	mg/L	0.0028; 0.00286	0.1
Cobalt	mg/L	0.001381; 0.001354	0.006
Combined Radium-226/228	pCi/L	2.5	5
Fluoride	mg/L	0.2; 0.1	4
Lead	mg/L	0.00125; 0.001	0.015
Lithium	mg/L	0.005	0.04
Mercury	mg/L	0.0002	0.002
Molybdenum	mg/L	0.015	0.1
Selenium	mg/L	0.0025	0.05
Thallium	mg/L	0.0005	0.002

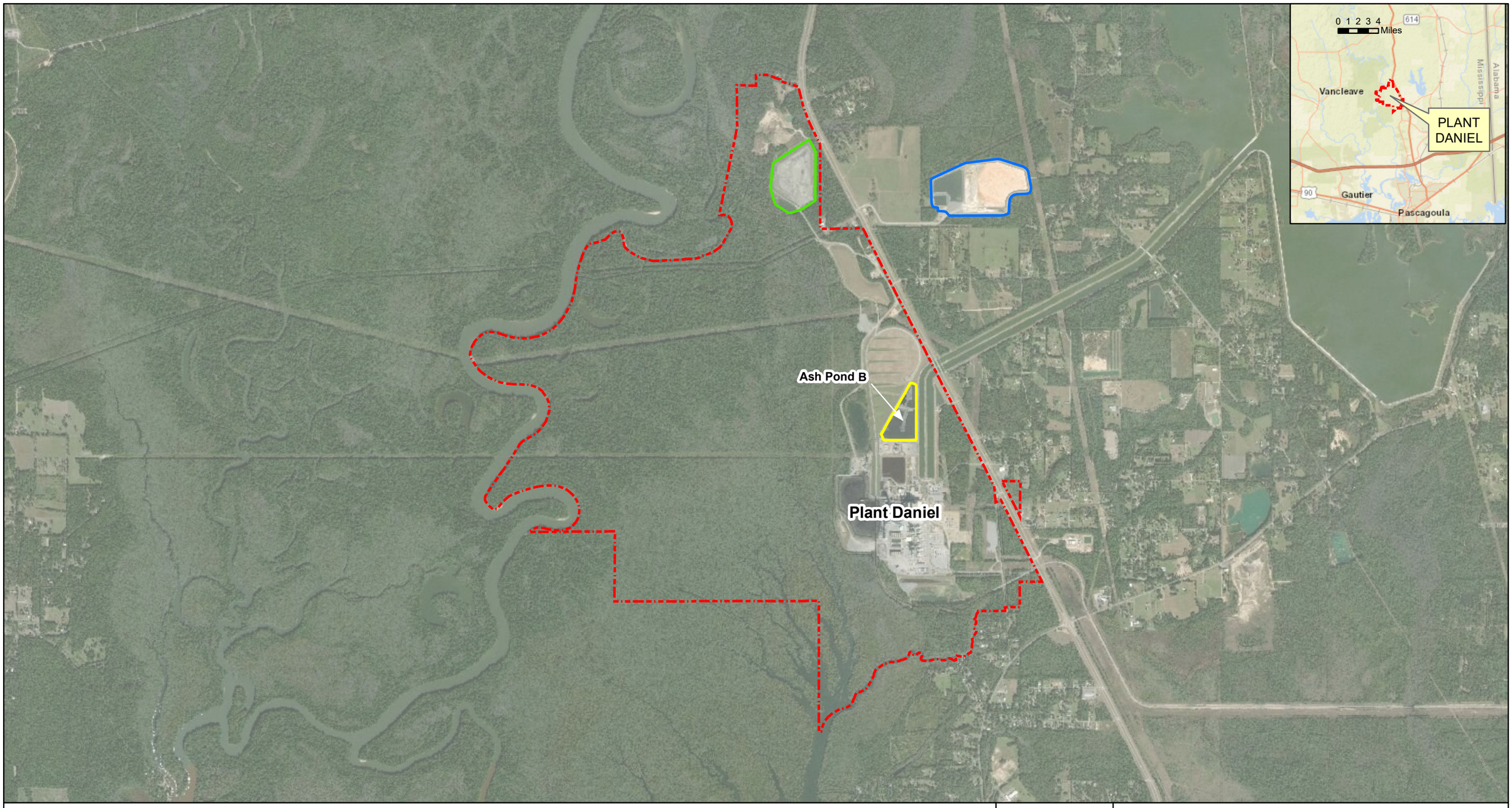
Note:

1.Where 2 numbers are present, they denote the different background levels and background-derived

GWPS for each of the 2 semi-annual monitoring events in the order that they were determined.

2. If background is less than the rule-identified GWPS; therefore, the rule-identified GWPS were used for statistical analysis.

Figures



Legend

- North Ash Management Unit (NAMU) Boundary
- Gypsum Storage Area (GSA) Boundary
- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

SCALE	1:30000
DATE	12/20/2019
DRAWN BY	KWR
CHECKED BY	LMP

DRAWING TITLE

SITE LOCATION MAP
PLANT DANIEL ASH POND B

FIGURE NO

FIGURE 1

Southern Company

Legend

- Monitoring Well Location
- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 250 500 1,000 Feet

SCALE	1:3000
DATE	12/20/2019
DRAWN BY	KWR
CHECKED BY	LMP

DRAWING TITLE

MONITORING WELL LOCATION MAP
PLANT DANIEL ASH POND B

FIGURE NO

FIGURE 2

Southern Company

Legend

- Monitoring Well Location — **BAW-1** Well Name; 9.27 Groundwater Elevation (ft NAVD88)
- Estimated Potentiometric Contour (ft NAVD88)
- Approximate Direction of Groundwater Flow
- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 250 500 1,000 Feet

Note: ft NAVD88 indicates feet relative to the North American Vertical Datum of 1988.

SCALE	1:3000
DATE	12/20/2019
DRAWN BY	KWR
CHECKED BY	LMP

DRAWING TITLE

POTENTIOMETRIC SURFACE CONTOUR MAP
FEBRUARY 11, 2019
PLANT DANIEL ASH POND B

FIGURE NO

FIGURE 3

Southern Company

Legend

- Monitoring Well Location — **BAW-1** Well Name; 9.14 Groundwater Elevation (ft NAVD88)
- Estimated Potentiometric Contour (ft NAVD88)
- Approximate Direction of Groundwater Flow
- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 250 500 1,000 Feet

Note: ft NAVD88 indicates feet relative to the North American Vertical Datum of 1988.

SCALE	1:3000
DATE	12/20/2019
DRAWN BY	KWR
CHECKED BY	LMP

DRAWING TITLE

POTENTIOMETRIC SURFACE CONTOUR MAP
APRIL 17, 2019
PLANT DANIEL ASH POND B

FIGURE NO

FIGURE 4

Southern Company

Legend

- Monitoring Well Location — **BAW-1** Well Name; 8.29 Groundwater Elevation (ft NAVD88)
- Estimated Potentiometric Contour (ft NAVD88)
- Approximate Direction of Groundwater Flow
- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 250 500 1,000 Feet

Note: ft NAVD88 indicates feet relative to the North American Vertical Datum of 1988.

SCALE	1:3000
DATE	12/20/2019
DRAWN BY	KWR
CHECKED BY	LMP

DRAWING TITLE

POTENTIOMETRIC SURFACE CONTOUR MAP
SEPTEMBER 24, 2019
PLANT DANIEL ASH POND B

FIGURE NO

FIGURE 5

Southern Company

Appendix A

Initial Assessment Monitoring Event

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-86658-1
TestAmerica Sample Delivery Group: 1
Client Project/Site: CCR - Plant Daniel
Revision: 1

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Authorized for release by:
3/20/2019 9:54:51 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-86658-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative
180-86658-1

Revised: sample BAW-2A was reanalyzed for anions; field pH was added to report

Comments
No additional comments.

Receipt
The samples were received on 2/13/2019 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): BAW-1 (180-86658-1). The container labels list sample time as 1205, while the COC lists sample time as 1105. Samples logged per COC.

Anions
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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 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.

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.

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

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	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19 *
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	01-28-19 *
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19 *
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86658-1	BAW-1	Water	02/11/19 11:05	02/13/19 15:30
180-86658-2	BAW-2A	Water	02/12/19 10:31	02/13/19 15:30
180-86658-3	BAW-3	Water	02/12/19 07:40	02/13/19 15:30
180-86658-4	BAW-4	Water	02/11/19 14:20	02/13/19 15:30
180-86658-5	BAW-5	Water	02/11/19 13:25	02/13/19 15:30
180-86658-6	BAW-7	Water	02/12/19 15:50	02/13/19 15:30
180-86658-7	DUP-01	Water	02/11/19 11:05	02/13/19 15:30
180-86658-8	DUP-02	Water	02/12/19 09:31	02/13/19 15:30
180-86658-9	FB-01	Water	02/12/19 15:00	02/13/19 15:30

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

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.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Client Sample ID: BAW-1
Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-1
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	EPA 300.0 R2.1		1			270350	02/14/19 14:54	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 19:38	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 19:38	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:03	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			273453	02/11/19 11:05	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-2A
Date Collected: 02/12/19 10:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-2
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	EPA 300.0 R2.1		1			272185	03/07/19 18:57	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 19:43	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 19:43	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:10	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			273453	02/12/19 10:31	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-3
Date Collected: 02/12/19 07:40
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-3
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	EPA 300.0 R2.1		1			270350	02/14/19 15:26	CMR	TAL PIT

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Client Sample ID: BAW-3

Date Collected: 02/12/19 07:40
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-3

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	EPA 300.0 R2.1		1			270350	02/14/19 15:26	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 19:48	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 19:48	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:11	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			273453	02/12/19 07:40	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-4

Date Collected: 02/11/19 14:20
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-4

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	EPA 300.0 R2.1		1			270350	02/14/19 15:42	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 19:52	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 19:52	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:12	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			273453	02/11/19 14:20	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-5

Date Collected: 02/11/19 13:25
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-5

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	EPA 300.0 R2.1		1			270350	02/14/19 15:58	CMR	TAL PIT
	Instrument ID: CHICS2100B									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

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	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 19:57	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 19:57	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:13	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			273453	02/11/19 13:25	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-7

Date Collected: 02/12/19 15:50
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-6

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	EPA 300.0 R2.1		1			270350	02/14/19 16:13	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 20:02	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 20:02	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:14	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			273453	02/12/19 15:50	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-01

Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-7

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	EPA 300.0 R2.1		1			270350	02/14/19 16:29	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 20:06	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 20:06	WTR	TAL PIT
	Instrument ID: M									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Client Sample ID: DUP-01
Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:15	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-02
Date Collected: 02/12/19 09:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-8
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	EPA 300.0 R2.1		1			270350	02/14/19 16:45	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 20:29	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:09	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 20:29	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:16	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FB-01
Date Collected: 02/12/19 15:00
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-9
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	EPA 300.0 R2.1		1			270350	02/14/19 18:04	CMR	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:11	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270810	02/18/19 20:11	WTR	TAL PIT
	Instrument ID: M									
Total Recoverable	Prep	3005A			50 mL	50 mL	270562	02/15/19 12:11	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			270939	02/18/19 20:11	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7470A			50 mL	50 mL	270580	02/15/19 14:39	KAK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			270815	02/19/19 13:17	KAK	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	270555	02/15/19 12:00	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KAK = Kayla Kalamasz

NAM = Nicole Marfisi

Batch Type: Analysis

AVS = Abbey Smith

CMR = Carl Reagle

FDS = Sampler Field

KAK = Kayla Kalamasz

MJH = Matthew Hartman

WTR = Bill Reinheimer

Client Sample ID: BAW-1

Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-1

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.84**		1.00	0.715	mg/L			02/14/19 14:54	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 14:54	1
Sulfate	**0.774**	**J**	1.00	0.380	mg/L			02/14/19 14:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 19:38	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 19:38	1
Barium	**0.0308**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 19:38	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 19:38	1
Calcium	**1.00**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 19:38	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 19:38	1
Cobalt	**0.000768**	**J**	0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 19:38	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 19:38	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 19:38	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 19:38	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 19:38	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 19:38	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 19:38	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 19:38	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			02/15/19 12:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**4.7**				SU			02/11/19 11:05	1

Client Sample ID: BAW-2A

Date Collected: 02/12/19 10:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-2

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.40**		1.00	0.715	mg/L			03/07/19 18:57	1
Fluoride	<0.0263		0.200	0.0263	mg/L			03/07/19 18:57	1
Sulfate	**1.97**		1.00	0.380	mg/L			03/07/19 18:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 19:43	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 19:43	1
Barium	**0.0348**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 19:43	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 19:43	1
Calcium	**0.757**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 19:43	1
Cadmium	**0.000143**	**J**	0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 19:43	1

Client Sample ID: BAW-2A
Date Collected: 02/12/19 10:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	**0.000896**	**J**	0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 19:43	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 19:43	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 19:43	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 19:43	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 19:43	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 19:43	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 19:43	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 19:43	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**22.0**		10.0	10.0	mg/L			02/15/19 12:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**4.86**				SU			02/12/19 10:31	1

Client Sample ID: BAW-3
Date Collected: 02/12/19 07:40
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-3
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.89**		1.00	0.715	mg/L			02/14/19 15:26	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 15:26	1
Sulfate	**1.97**		1.00	0.380	mg/L			02/14/19 15:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 19:48	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 19:48	1
Barium	**0.0274**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 19:48	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 19:48	1
Calcium	**0.856**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 19:48	1
Cadmium	**0.000877**	**J**	0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 19:48	1
Cobalt	**0.00552**		0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 19:48	1
Chromium	**0.00165**	**J**	0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 19:48	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 19:48	1
Lead	**0.000139**	**J**	0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 19:48	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 19:48	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 19:48	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 19:48	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 19:48	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12.0		10.0	10.0	mg/L			02/15/19 12:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	4.65				SU			02/12/19 07:40	1

Client Sample ID: BAW-4
Lab Sample ID: 180-86658-4

Date Collected: 02/11/19 14:20
Matrix: Water
Date Received: 02/13/19 15:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.31		1.00	0.715	mg/L			02/14/19 15:42	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 15:42	1
Sulfate	2.50		1.00	0.380	mg/L			02/14/19 15:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000737	J	0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 19:52	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 19:52	1
Barium	0.00931		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 19:52	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 19:52	1
Calcium	2.88		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 19:52	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 19:52	1
Cobalt	0.000930	J	0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 19:52	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 19:52	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 19:52	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 19:52	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 19:52	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 19:52	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 19:52	1
Lithium	0.0229		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 19:52	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	23.0		10.0	10.0	mg/L			02/15/19 12:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	5				SU			02/11/19 14:20	1

Client Sample ID: BAW-5
Lab Sample ID: 180-86658-5

Date Collected: 02/11/19 13:25
Matrix: Water
Date Received: 02/13/19 15:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.84		1.00	0.715	mg/L			02/14/19 15:58	1
Fluoride	0.0368	J	0.200	0.0263	mg/L			02/14/19 15:58	1
Sulfate	2.64		1.00	0.380	mg/L			02/14/19 15:58	1

Client Sample ID: BAW-5

Date Collected: 02/11/19 13:25
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00232**		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 19:57	1
Boron	**0.126**		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 19:57	1
Barium	**0.0388**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 19:57	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 19:57	1
Calcium	**12.8**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 19:57	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 19:57	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 19:57	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 19:57	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 19:57	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 19:57	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 19:57	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 19:57	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 19:57	1
Lithium	**0.161**		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 19:57	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**60.0**		10.0	10.0	mg/L			02/15/19 12:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**6.08**				SU			02/11/19 13:25	1

Client Sample ID: BAW-7

Date Collected: 02/12/19 15:50
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-6

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.72**		1.00	0.715	mg/L			02/14/19 16:13	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 16:13	1
Sulfate	**1.35**		1.00	0.380	mg/L			02/14/19 16:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 20:02	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 20:02	1
Barium	**0.0102**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 20:02	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 20:02	1
Calcium	**0.608**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 20:02	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 20:02	1
Cobalt	**0.000661**	**J**	0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 20:02	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 20:02	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 20:02	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 20:02	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 20:02	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 20:02	1

Client Sample ID: BAW-7

Date Collected: 02/12/19 15:50
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 20:02	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 20:02	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			02/15/19 12:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**4.79**				SU			02/12/19 15:50	1

Client Sample ID: DUP-01

Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-7
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.03**		1.00	0.715	mg/L			02/14/19 16:29	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 16:29	1
Sulfate	**0.791**	**J**	1.00	0.380	mg/L			02/14/19 16:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 20:06	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 20:06	1
Barium	**0.0293**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 20:06	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 20:06	1
Calcium	**0.960**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 20:06	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 20:06	1
Cobalt	**0.000776**	**J**	0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 20:06	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 20:06	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 20:06	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 20:06	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 20:06	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 20:06	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 20:06	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 20:06	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			02/15/19 12:00	1

Client Sample ID: DUP-02

Date Collected: 02/12/19 09:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-8
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.02**		1.00	0.715	mg/L			02/14/19 16:45	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 16:45	1
Sulfate	**1.72**		1.00	0.380	mg/L			02/14/19 16:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 20:29	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 20:29	1
Barium	**0.0350**		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 20:29	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 20:29	1
Calcium	**0.692**		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 20:29	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 20:29	1
Cobalt	**0.000911**	**J**	0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 20:29	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 20:29	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 20:29	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 20:29	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 20:29	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 20:29	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 20:29	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 20:29	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**18.0**		10.0	10.0	mg/L			02/15/19 12:00	1

Client Sample ID: FB-01

Date Collected: 02/12/19 15:00
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-9
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			02/14/19 18:04	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 18:04	1
Sulfate	<0.380		1.00	0.380	mg/L			02/14/19 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:11	02/18/19 20:11	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:11	02/18/19 20:11	1
Barium	<0.00149		0.00250	0.00149	mg/L		02/15/19 12:11	02/18/19 20:11	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:11	02/18/19 20:11	1
Calcium	<0.116		0.250	0.116	mg/L		02/15/19 12:11	02/18/19 20:11	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:11	02/18/19 20:11	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		02/15/19 12:11	02/18/19 20:11	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:11	02/18/19 20:11	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		02/15/19 12:11	02/18/19 20:11	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:11	02/18/19 20:11	1

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

Client Sample ID: FB-01
Date Collected: 02/12/19 15:00
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:11	02/18/19 20:11	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:11	02/18/19 20:11	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:11	02/18/19 20:11	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:11	02/18/19 20:11	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			02/15/19 12:00	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-270350/37
Matrix: Water
Analysis Batch: 270350

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			02/14/19 13:19	1
Fluoride	<0.0263		0.200	0.0263	mg/L			02/14/19 13:19	1
Sulfate	<0.380		1.00	0.380	mg/L			02/14/19 13:19	1

Lab Sample ID: LCS 180-270350/36
Matrix: Water
Analysis Batch: 270350

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.41		mg/L		98	90 - 110
Fluoride	1.25	1.228		mg/L		98	90 - 110
Sulfate	25.0	23.79		mg/L		95	90 - 110

Lab Sample ID: 180-86658-8 MS
Matrix: Water
Analysis Batch: 270350

Client Sample ID: DUP-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	8.02		25.0	35.51		mg/L		110	80 - 120
Fluoride	<0.0263		1.25	1.440		mg/L		115	80 - 120
Sulfate	1.72		25.0	29.01		mg/L		109	80 - 120

Lab Sample ID: 180-86658-8 MSD
Matrix: Water
Analysis Batch: 270350

Client Sample ID: DUP-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	8.02		25.0	34.17		mg/L		105	80 - 120	4	20
Fluoride	<0.0263		1.25	1.367		mg/L		109	80 - 120	5	20
Sulfate	1.72		25.0	27.89		mg/L		105	80 - 120	4	20

Lab Sample ID: MB 180-272185/6
Matrix: Water
Analysis Batch: 272185

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			03/07/19 05:08	1
Fluoride	<0.0263		0.200	0.0263	mg/L			03/07/19 05:08	1
Sulfate	<0.380		1.00	0.380	mg/L			03/07/19 05:08	1

Lab Sample ID: MB 180-272185/61
Matrix: Water
Analysis Batch: 272185

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			03/08/19 00:03	1
Fluoride	<0.0263		0.200	0.0263	mg/L			03/08/19 00:03	1
Sulfate	<0.380		1.00	0.380	mg/L			03/08/19 00:03	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 180-272185/5
Matrix: Water
Analysis Batch: 272185

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.08		mg/L		104	90 - 110
Fluoride	1.25	1.285		mg/L		103	90 - 110
Sulfate	25.0	26.30		mg/L		105	90 - 110

Lab Sample ID: LCS 180-272185/60
Matrix: Water
Analysis Batch: 272185

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.44		mg/L		102	90 - 110
Fluoride	1.25	1.239		mg/L		99	90 - 110
Sulfate	25.0	25.23		mg/L		101	90 - 110

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-270562/1-A
Matrix: Water
Analysis Batch: 270810

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 270562

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		02/15/19 12:09	02/18/19 18:21	1
Boron	<0.0303		0.0500	0.0303	mg/L		02/15/19 12:09	02/18/19 18:21	1
Barium	<0.00149		0.00250	0.00149	mg/L		02/15/19 12:09	02/18/19 18:21	1
Beryllium	<0.000155		0.00250	0.000155	mg/L		02/15/19 12:09	02/18/19 18:21	1
Calcium	<0.116		0.250	0.116	mg/L		02/15/19 12:09	02/18/19 18:21	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		02/15/19 12:09	02/18/19 18:21	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		02/15/19 12:09	02/18/19 18:21	1
Chromium	<0.00153		0.00250	0.00153	mg/L		02/15/19 12:09	02/18/19 18:21	1
Molybdenum	0.0008190	J	0.00500	0.000610	mg/L		02/15/19 12:09	02/18/19 18:21	1
Lead	<0.000128		0.00100	0.000128	mg/L		02/15/19 12:09	02/18/19 18:21	1
Antimony	<0.000378		0.00200	0.000378	mg/L		02/15/19 12:09	02/18/19 18:21	1
Selenium	<0.000813		0.00125	0.000813	mg/L		02/15/19 12:09	02/18/19 18:21	1
Thallium	<0.000128		0.000500	0.000128	mg/L		02/15/19 12:09	02/18/19 18:21	1
Lithium	<0.00314		0.00500	0.00314	mg/L		02/15/19 12:09	02/18/19 18:21	1

Lab Sample ID: LCS 180-270562/2-A
Matrix: Water
Analysis Batch: 270810

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 270562

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0400	0.03991		mg/L		100	80 - 120
Boron	1.00	0.8711		mg/L		87	80 - 120
Barium	2.00	1.895		mg/L		95	80 - 120
Beryllium	0.0500	0.04397		mg/L		88	80 - 120
Calcium	50.0	49.39		mg/L		99	80 - 120
Cadmium	0.0500	0.04939		mg/L		99	80 - 120
Cobalt	0.500	0.4733		mg/L		95	80 - 120
Chromium	0.200	0.1803		mg/L		90	80 - 120

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

Lab Sample ID: LCS 180-270562/2-A
Matrix: Water
Analysis Batch: 270810

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 270562

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	1.00	0.9879		mg/L		99	80 - 120
Lead	0.0200	0.02105		mg/L		105	80 - 120
Antimony	0.500	0.4750		mg/L		95	80 - 120
Selenium	0.0100	0.009562		mg/L		96	80 - 120
Thallium	0.0500	0.05174		mg/L		103	80 - 120
Lithium	0.0500	0.04823		mg/L		96	80 - 120

Lab Sample ID: 180-86658-8 MS
Matrix: Water
Analysis Batch: 270810

Client Sample ID: DUP-02
Prep Type: Total Recoverable
Prep Batch: 270562

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	<0.000323		0.0400	0.03786		mg/L		95	75 - 125
Boron	<0.0303		1.00	0.9453		mg/L		95	75 - 125
Barium	0.0350		2.00	1.943		mg/L		95	75 - 125
Beryllium	<0.000155		0.0500	0.04718		mg/L		94	75 - 125
Calcium	0.692		50.0	50.74		mg/L		100	75 - 125
Cadmium	<0.000125		0.0500	0.05301		mg/L		106	75 - 125
Cobalt	0.000911	J	0.500	0.4535		mg/L		91	75 - 125
Chromium	<0.00153		0.200	0.1764		mg/L		88	75 - 125
Molybdenum	<0.000610		1.00	0.9794		mg/L		98	75 - 125
Lead	<0.000128		0.0200	0.02132		mg/L		107	75 - 125
Antimony	<0.000378		0.500	0.4900		mg/L		98	75 - 125
Selenium	<0.000813		0.0100	0.009333		mg/L		93	75 - 125
Thallium	<0.000128		0.0500	0.05341		mg/L		107	75 - 125
Lithium	<0.00314		0.0500	0.04960		mg/L		99	75 - 125

Lab Sample ID: 180-86658-8 MSD
Matrix: Water
Analysis Batch: 270810

Client Sample ID: DUP-02
Prep Type: Total Recoverable
Prep Batch: 270562

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	<0.000323		0.0400	0.03661		mg/L		92	75 - 125	3	20
Boron	<0.0303		1.00	0.9967		mg/L		100	75 - 125	5	20
Barium	0.0350		2.00	1.899		mg/L		93	75 - 125	2	20
Beryllium	<0.000155		0.0500	0.04931		mg/L		99	75 - 125	4	20
Calcium	0.692		50.0	51.07		mg/L		101	75 - 125	1	20
Cadmium	<0.000125		0.0500	0.04889		mg/L		98	75 - 125	8	20
Cobalt	0.000911	J	0.500	0.4493		mg/L		90	75 - 125	1	20
Chromium	<0.00153		0.200	0.1764		mg/L		88	75 - 125	0	20
Molybdenum	<0.000610		1.00	0.9664		mg/L		97	75 - 125	1	20
Lead	<0.000128		0.0200	0.02056		mg/L		103	75 - 125	4	20
Antimony	<0.000378		0.500	0.4832		mg/L		97	75 - 125	1	20
Selenium	<0.000813		0.0100	0.009799		mg/L		98	75 - 125	5	20
Thallium	<0.000128		0.0500	0.05201		mg/L		104	75 - 125	3	20
Lithium	<0.00314		0.0500	0.05291		mg/L		106	75 - 125	6	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-270580/1-A
Matrix: Water
Analysis Batch: 270815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 270580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000101		0.000200	0.000101	mg/L		02/15/19 14:39	02/19/19 12:50	1

Lab Sample ID: LCS 180-270580/2-A
Matrix: Water
Analysis Batch: 270815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 270580

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00250	0.002608		mg/L		104	80 - 120		

Lab Sample ID: 180-86658-1 MS
Matrix: Water
Analysis Batch: 270815

Client Sample ID: BAW-1
Prep Type: Total/NA
Prep Batch: 270580

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	<0.000101		0.00100	0.0009980		mg/L		100	75 - 125		

Lab Sample ID: 180-86658-1 MSD
Matrix: Water
Analysis Batch: 270815

Client Sample ID: BAW-1
Prep Type: Total/NA
Prep Batch: 270580

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.000101		0.00100	0.0009970		mg/L		100	75 - 125	0	20

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

Lab Sample ID: MB 180-270555/2
Matrix: Water
Analysis Batch: 270555

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	<10.0		10.0	10.0	mg/L			02/15/19 12:00	1

Lab Sample ID: LCS 180-270555/1
Matrix: Water
Analysis Batch: 270555

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			204	172.0		mg/L		84	80 - 120		

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-1
SDG: 1

HPLC/IC

Analysis Batch: 270350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	EPA 300.0 R2.1	
180-86658-3	BAW-3	Total/NA	Water	EPA 300.0 R2.1	
180-86658-4	BAW-4	Total/NA	Water	EPA 300.0 R2.1	
180-86658-5	BAW-5	Total/NA	Water	EPA 300.0 R2.1	
180-86658-6	BAW-7	Total/NA	Water	EPA 300.0 R2.1	
180-86658-7	DUP-01	Total/NA	Water	EPA 300.0 R2.1	
180-86658-8	DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-86658-9	FB-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-270350/37	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-270350/36	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-86658-8 MS	DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-86658-8 MSD	DUP-02	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 272185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-2	BAW-2A	Total/NA	Water	EPA 300.0 R2.1	
MB 180-272185/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 180-272185/61	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-272185/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-272185/60	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 270562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total Recoverable	Water	3005A	
180-86658-2	BAW-2A	Total Recoverable	Water	3005A	
180-86658-3	BAW-3	Total Recoverable	Water	3005A	
180-86658-4	BAW-4	Total Recoverable	Water	3005A	
180-86658-5	BAW-5	Total Recoverable	Water	3005A	
180-86658-6	BAW-7	Total Recoverable	Water	3005A	
180-86658-7	DUP-01	Total Recoverable	Water	3005A	
180-86658-8	DUP-02	Total Recoverable	Water	3005A	
180-86658-9	FB-01	Total Recoverable	Water	3005A	
MB 180-270562/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-270562/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-86658-8 MS	DUP-02	Total Recoverable	Water	3005A	
180-86658-8 MSD	DUP-02	Total Recoverable	Water	3005A	

Prep Batch: 270580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	7470A	
180-86658-2	BAW-2A	Total/NA	Water	7470A	
180-86658-3	BAW-3	Total/NA	Water	7470A	
180-86658-4	BAW-4	Total/NA	Water	7470A	
180-86658-5	BAW-5	Total/NA	Water	7470A	
180-86658-6	BAW-7	Total/NA	Water	7470A	
180-86658-7	DUP-01	Total/NA	Water	7470A	
180-86658-8	DUP-02	Total/NA	Water	7470A	
180-86658-9	FB-01	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 270580 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-270580/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-270580/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-86658-1 MS	BAW-1	Total/NA	Water	7470A	
180-86658-1 MSD	BAW-1	Total/NA	Water	7470A	

Analysis Batch: 270810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total Recoverable	Water	EPA 6020	270562
180-86658-2	BAW-2A	Total Recoverable	Water	EPA 6020	270562
180-86658-3	BAW-3	Total Recoverable	Water	EPA 6020	270562
180-86658-4	BAW-4	Total Recoverable	Water	EPA 6020	270562
180-86658-5	BAW-5	Total Recoverable	Water	EPA 6020	270562
180-86658-6	BAW-7	Total Recoverable	Water	EPA 6020	270562
180-86658-7	DUP-01	Total Recoverable	Water	EPA 6020	270562
180-86658-8	DUP-02	Total Recoverable	Water	EPA 6020	270562
180-86658-9	FB-01	Total Recoverable	Water	EPA 6020	270562
MB 180-270562/1-A	Method Blank	Total Recoverable	Water	EPA 6020	270562
LCS 180-270562/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	270562
180-86658-8 MS	DUP-02	Total Recoverable	Water	EPA 6020	270562
180-86658-8 MSD	DUP-02	Total Recoverable	Water	EPA 6020	270562

Analysis Batch: 270815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	EPA 7470A	270580
180-86658-2	BAW-2A	Total/NA	Water	EPA 7470A	270580
180-86658-3	BAW-3	Total/NA	Water	EPA 7470A	270580
180-86658-4	BAW-4	Total/NA	Water	EPA 7470A	270580
180-86658-5	BAW-5	Total/NA	Water	EPA 7470A	270580
180-86658-6	BAW-7	Total/NA	Water	EPA 7470A	270580
180-86658-7	DUP-01	Total/NA	Water	EPA 7470A	270580
180-86658-8	DUP-02	Total/NA	Water	EPA 7470A	270580
180-86658-9	FB-01	Total/NA	Water	EPA 7470A	270580
MB 180-270580/1-A	Method Blank	Total/NA	Water	EPA 7470A	270580
LCS 180-270580/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	270580
180-86658-1 MS	BAW-1	Total/NA	Water	EPA 7470A	270580
180-86658-1 MSD	BAW-1	Total/NA	Water	EPA 7470A	270580

Analysis Batch: 270939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total Recoverable	Water	EPA 6020	270562
180-86658-2	BAW-2A	Total Recoverable	Water	EPA 6020	270562
180-86658-3	BAW-3	Total Recoverable	Water	EPA 6020	270562
180-86658-4	BAW-4	Total Recoverable	Water	EPA 6020	270562
180-86658-5	BAW-5	Total Recoverable	Water	EPA 6020	270562
180-86658-6	BAW-7	Total Recoverable	Water	EPA 6020	270562
180-86658-7	DUP-01	Total Recoverable	Water	EPA 6020	270562
180-86658-8	DUP-02	Total Recoverable	Water	EPA 6020	270562
180-86658-9	FB-01	Total Recoverable	Water	EPA 6020	270562
MB 180-270562/1-A	Method Blank	Total Recoverable	Water	EPA 6020	270562
LCS 180-270562/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	270562
180-86658-8 MS	DUP-02	Total Recoverable	Water	EPA 6020	270562

Metals (Continued)

Analysis Batch: 270939 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-8 MSD	DUP-02	Total Recoverable	Water	EPA 6020	270562

General Chemistry

Analysis Batch: 270555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	SM 2540C	
180-86658-2	BAW-2A	Total/NA	Water	SM 2540C	
180-86658-3	BAW-3	Total/NA	Water	SM 2540C	
180-86658-4	BAW-4	Total/NA	Water	SM 2540C	
180-86658-5	BAW-5	Total/NA	Water	SM 2540C	
180-86658-6	BAW-7	Total/NA	Water	SM 2540C	
180-86658-7	DUP-01	Total/NA	Water	SM 2540C	
180-86658-8	DUP-02	Total/NA	Water	SM 2540C	
180-86658-9	FB-01	Total/NA	Water	SM 2540C	
MB 180-270555/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-270555/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 273453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	Field Sampling	
180-86658-2	BAW-2A	Total/NA	Water	Field Sampling	
180-86658-3	BAW-3	Total/NA	Water	Field Sampling	
180-86658-4	BAW-4	Total/NA	Water	Field Sampling	
180-86658-5	BAW-5	Total/NA	Water	Field Sampling	
180-86658-6	BAW-7	Total/NA	Water	Field Sampling	

TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-49716-10468.2
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 2 of 2
Company: RDH Environmental Services Inc				Job #:

Address: 5720 Dove Drive	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Pace	TAT Requested (days):		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: FL, 32571			
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested		Other:
Email: rickhagendorfer@gmail.com	WO #:		
Project Name: CCR - Plant Daniel	Project #: 18020047		
Site:	SSOW#:		

Sample Identification	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)	9315_Ra226, Ra226Ra228_AS	6020, 7470A App III and App IV analytes	2540C_Calcd, 300_ORGFM_28D Cl, Fl, SO4	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N		
BAW-1	2/11/19	1105	G	Water			X	X	X		
BAW-2A	2/12/19	1031									
BAW-3	2/12/19	0740									
BAW-4	2/11/19	1420									
BAW-5	2/11/19	1325									
BAW-7	2/12/19	1550									
Dup-01	2/11/19	1105									
Dup-02	2/12/19	0931	↓	↓			↓	↓	↓		
FB-01	2/12/19	1500	G	Water			X	X	X		

180-86658 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	2/12/19 1645	RDH		2/13/19 0930	TA PAH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1530	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: TN 2/13/19	Company

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

Ver: 08/04/2016

Do Not Lift Using This Tag

Align FedEx Pouch Here

Do Not Lift Using Th

ORIGIN ID:BIXA (251) 269-3637
RDH ENVIRONMENTAL
5720 DOVE DR
MILTON, FL 32571
UNITED STATES US

SHIP DATE: 12FEB19
ACTWGT: 53.00 LB
CAD: 006993799/SSFE1922
DIMS: 24x13x13 IN
BILL THIRD PARTY

TO VERONICA BORTOT
EUROFINS TEST AMERICA
301 ALPHA DR
EXPORT PA 15632

Part # 156297-435 RRD82 EXP 12/19

180-86658 Waybill

FedEx Express

FedEx
TRK# 0201 7854 6369 9966

WED - 13 FEB 10:30A
PRIORITY OVERNIGHT

15238
PA-US
PIT

65 AGCA

Uncorrected temp 1.8 °C
Thermometer ID 10
CF +1-0 Initials JN

PT-WI-SR-001 effective 11/8/18

FID 842403 13FEB19 L8EA 563C2/0E3D/0C8A

Part # 156297-435 RRDB2 EXP 12/19
ORIGIN ID:BIXA (251) 269-3637
RDH ENVIRONMENTAL
5720 DOVE DR
MILTON FL 32571
UNITED STATES US
SHIP DATE: 12FEB19
ACTWGT: 64.20 LB
CAD: 006993799/SSFE1922
DIMS: 24x13x13 IN
BILL THIRD PARTY
TO VERONICA BORTOT
EUROFINS TEST AMERICA
301 ALPHA DR
EXPORT PA 15632
(000) 000-0000
DEPT:
FedEx Express
FedEx
TRK# 0201 7854 6369 9977
10:30A
PRIORITY OVERNIGHT
65 AGCA
15238
PA-US
PIT
Uncorrected temp
Thermometer ID
CF +/-0
Initials
PT-WI-SR-001 effective 11/8/18
FID 842483 13FEB19 L6EA 553C2/9E3D/8CBA
RT 469
1
10:30
A
9977
02.13
FZ
Courier or Driver:
Place Astra or Barcoded Label Here
© 2011 FedEx 15045A REV 10/11 RRD
Country
Not deliver to P.O. boxes or P.O. ZIP codes.
Use print

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86658-1
SDG Number: 1

Login Number: 86658
List Number: 1
Creator: Neri, Tom

List Source: TestAmerica Pittsburgh

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.	False	Refer to Job Narrative for details.
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-86658-2
TestAmerica Sample Delivery Group: 1
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Authorized for release by:
3/20/2019 8:36:31 AM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-86658-2

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative
180-86658-2

Comments
No additional comments.

Receipt
The samples were received on 2/13/2019 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): BAW-1 (180-86658-1). The container labels list sample time as 1205, while the COC lists sample time as 1105. Samples logged per COC.

RAD
Method(s) 903.0, 9315: Ra-226 Prep Batch 160-415571

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.
BAW-1 (180-86658-1), BAW-2A (180-86658-2), BAW-3 (180-86658-3), BAW-4 (180-86658-4), BAW-5 (180-86658-5), BAW-7 (180-86658-6), DUP-01 (180-86658-7), DUP-02 (180-86658-8), FB-01 (180-86658-9), (LCS 160-415571/1-A), (MB 160-415571/23-A), (550-118012-F-5-D) and (550-118012-F-5-E DU)

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-415571

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-1 (180-86658-1), BAW-2A (180-86658-2), BAW-3 (180-86658-3), BAW-4 (180-86658-4), BAW-5 (180-86658-5), BAW-7 (180-86658-6), DUP-01 (180-86658-7), DUP-02 (180-86658-8), FB-01 (180-86658-9), (LCS 160-415571/1-A), (MB 160-415571/23-A), (550-118012-F-5-D) and (550-118012-F-5-E DU)

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

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Qualifiers

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

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	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19 *
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	01-28-19 *
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19 *
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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	06-30-19
ANAB	DoD / DOE		L2305	04-06-22
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19 *
Florida	NELAP	4	E87689	06-30-19
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19 *
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19 *

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

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86658-1	BAW-1	Water	02/11/19 11:05	02/13/19 15:30
180-86658-2	BAW-2A	Water	02/12/19 10:31	02/13/19 15:30
180-86658-3	BAW-3	Water	02/12/19 07:40	02/13/19 15:30
180-86658-4	BAW-4	Water	02/11/19 14:20	02/13/19 15:30
180-86658-5	BAW-5	Water	02/11/19 13:25	02/13/19 15:30
180-86658-6	BAW-7	Water	02/12/19 15:50	02/13/19 15:30
180-86658-7	DUP-01	Water	02/11/19 11:05	02/13/19 15:30
180-86658-8	DUP-02	Water	02/12/19 09:31	02/13/19 15:30
180-86658-9	FB-01	Water	02/12/19 15:00	02/13/19 15:30

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Client Sample ID: BAW-1
Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.75 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419080	03/13/19 19:57	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			999.75 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-2A
Date Collected: 02/12/19 10:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.56 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419080	03/13/19 19:58	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			1000.56 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-3
Date Collected: 02/12/19 07:40
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-3
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	PrecSep-21			1000.44 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419080	03/13/19 19:58	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			1000.44 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-4
Date Collected: 02/11/19 14:20
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.95 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Client Sample ID: BAW-4
Date Collected: 02/11/19 14:20
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-4
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	9315		1			419080	03/13/19 19:58	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			999.95 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-5
Date Collected: 02/11/19 13:25
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.79 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419081	03/13/19 19:59	KLS	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			999.79 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-7
Date Collected: 02/12/19 15:50
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.73 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419081	03/13/19 19:59	KLS	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			999.73 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-01
Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.64 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Client Sample ID: DUP-01

Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-7

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	9315		1			419081	03/13/19 19:59	KLS	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1000.64 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:39	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-02

Date Collected: 02/12/19 09:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.15 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419081	03/13/19 19:59	KLS	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1000.15 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:40	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FB-01

Date Collected: 02/12/19 15:00
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.03 mL	1.0 g	415571	02/19/19 10:21	CLP	TAL SL
Total/NA	Analysis	9315		1			419081	03/13/19 19:59	KLS	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1000.03 mL	1.0 g	415580	02/19/19 10:55	CLP	TAL SL
Total/NA	Analysis	9320		1			417382	03/01/19 09:40	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			419804	03/18/19 12:42	CDR	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

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

Analyst References:

Lab: TAL SL

Batch Type: Prep

CLP = Cassandra Park

Batch Type: Analysis

CDR = Conrad Reuscher

KLS = Kody Saulters

Client Sample ID: BAW-1

Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.138		0.0777	0.0787	1.00	0.0992	pCi/L	02/19/19 10:21	03/13/19 19:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.354	U	0.250	0.252	1.00	0.390	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*90.5*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*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	0.493		0.262	0.264	5.00	0.390	pCi/L		03/18/19 12:42	1

Client Sample ID: BAW-2A

Date Collected: 02/12/19 10:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.141		0.0741	0.0752	1.00	0.0854	pCi/L	02/19/19 10:21	03/13/19 19:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.291	U	0.246	0.247	1.00	0.391	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*87.5*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*

Client Sample ID: BAW-2A
Date Collected: 02/12/19 10:31
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-2
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	0.432		0.257	0.258	5.00	0.391	pCi/L		03/18/19 12:42	1

Client Sample ID: BAW-3
Date Collected: 02/12/19 07:40
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-3
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0687	U	0.0555	0.0559	1.00	0.0784	pCi/L	02/19/19 10:21	03/13/19 19:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.512		0.259	0.263	1.00	0.383	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*89.3*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*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	0.581		0.265	0.269	5.00	0.383	pCi/L		03/18/19 12:42	1

Client Sample ID: BAW-4
Date Collected: 02/11/19 14:20
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-4
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0108	U	0.0468	0.0468	1.00	0.0920	pCi/L	02/19/19 10:21	03/13/19 19:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:58*	*1*

Client Sample ID: BAW-4

Date Collected: 02/11/19 14:20
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-4

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0294	U	0.207	0.207	1.00	0.368	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*89.3*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*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	0.0402	U	0.212	0.212	5.00	0.368	pCi/L		03/18/19 12:42	1

Client Sample ID: BAW-5

Date Collected: 02/11/19 13:25
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.183**		0.0857	0.0872	1.00	0.104	pCi/L	02/19/19 10:21	03/13/19 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:59*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0332	U	0.220	0.220	1.00	0.397	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*90.5*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*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	0.150	U	0.236	0.237	5.00	0.397	pCi/L		03/18/19 12:42	1

Client Sample ID: BAW-7

Date Collected: 02/12/19 15:50
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0815	U	0.0615	0.0619	1.00	0.0873	pCi/L	02/19/19 10:21	03/13/19 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:59*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0125	U	0.212	0.212	1.00	0.378	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*90.5*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*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	0.0940	U	0.221	0.221	5.00	0.378	pCi/L		03/18/19 12:42	1

Client Sample ID: DUP-01

Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0696	U	0.0552	0.0555	1.00	0.0770	pCi/L	02/19/19 10:21	03/13/19 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:59*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.166	U	0.274	0.275	1.00	0.461	pCi/L	02/19/19 10:55	03/01/19 09:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*
Y Carrier	*93.1*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:39*	*1*

Client Sample ID: DUP-01

Lab Sample ID: 180-86658-7
Matrix: Water
Date Collected: 02/11/19 11:05
Date Received: 02/13/19 15:30

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	0.235	U	0.280	0.281	5.00	0.461	pCi/L		03/18/19 12:42	1

Client Sample ID: DUP-02

Lab Sample ID: 180-86658-8
Matrix: Water
Date Collected: 02/12/19 09:31
Date Received: 02/13/19 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.186**		0.0775	0.0793	1.00	0.0785	pCi/L	02/19/19 10:21	03/13/19 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:59*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.188	U	0.224	0.224	1.00	0.369	pCi/L	02/19/19 10:55	03/01/19 09:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:40*	*1*
Y Carrier	*90.1*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:40*	*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	**0.374**		0.237	0.238	5.00	0.369	pCi/L		03/18/19 12:42	1

Client Sample ID: FB-01

Lab Sample ID: 180-86658-9
Matrix: Water
Date Collected: 02/12/19 15:00
Date Received: 02/13/19 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0199	U	0.0398	0.0399	1.00	0.0732	pCi/L	02/19/19 10:21	03/13/19 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*02/19/19 10:21*	*03/13/19 19:59*	*1*

Client Sample ID: FB-01

Date Collected: 02/12/19 15:00
Date Received: 02/13/19 15:30

Lab Sample ID: 180-86658-9

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0185	U	0.243	0.243	1.00	0.433	pCi/L	02/19/19 10:55	03/01/19 09:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:40*	*1*
Y Carrier	*89.7*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:40*	*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	0.00143	U	0.246	0.246	5.00	0.433	pCi/L		03/18/19 12:42	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-415571/23-A
Matrix: Water
Analysis Batch: 419092

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415571

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01837	U	0.0422	0.0423	1.00	0.0793	pCi/L	02/19/19 10:21	03/13/19 20:02	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.5*		*40 - 110*	*02/19/19 10:21*	*03/13/19 20:02*	*1*

Lab Sample ID: LCS 160-415571/1-A
Matrix: Water
Analysis Batch: 419080

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415571

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	9.155		0.962	1.00	0.0807	pCi/L	81	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.2*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-415580/23-A
Matrix: Water
Analysis Batch: 417382

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415580

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.01474	U	0.208	0.208	1.00	0.376	pCi/L	02/19/19 10:55	03/01/19 09:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.5*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:41*	*1*
Y Carrier	*94.2*		*40 - 110*	*02/19/19 10:55*	*03/01/19 09:41*	*1*

Lab Sample ID: LCS 160-415580/1-A
Matrix: Water
Analysis Batch: 417382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415580

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.44	8.726		1.02	1.00	0.374	pCi/L	92	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.2*		*40 - 110*
Y Carrier	*88.6*		*40 - 110*

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

TestAmerica Job ID: 180-86658-2
SDG: 1

Rad

Prep Batch: 415571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	PrecSep-21	
180-86658-2	BAW-2A	Total/NA	Water	PrecSep-21	
180-86658-3	BAW-3	Total/NA	Water	PrecSep-21	
180-86658-4	BAW-4	Total/NA	Water	PrecSep-21	
180-86658-5	BAW-5	Total/NA	Water	PrecSep-21	
180-86658-6	BAW-7	Total/NA	Water	PrecSep-21	
180-86658-7	DUP-01	Total/NA	Water	PrecSep-21	
180-86658-8	DUP-02	Total/NA	Water	PrecSep-21	
180-86658-9	FB-01	Total/NA	Water	PrecSep-21	
MB 160-415571/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-415571/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 415580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86658-1	BAW-1	Total/NA	Water	PrecSep_0	
180-86658-2	BAW-2A	Total/NA	Water	PrecSep_0	
180-86658-3	BAW-3	Total/NA	Water	PrecSep_0	
180-86658-4	BAW-4	Total/NA	Water	PrecSep_0	
180-86658-5	BAW-5	Total/NA	Water	PrecSep_0	
180-86658-6	BAW-7	Total/NA	Water	PrecSep_0	
180-86658-7	DUP-01	Total/NA	Water	PrecSep_0	
180-86658-8	DUP-02	Total/NA	Water	PrecSep_0	
180-86658-9	FB-01	Total/NA	Water	PrecSep_0	
MB 160-415580/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-415580/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-49716-10468.2
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 2 of 2
Company: RDH Environmental Services Inc				Job #:

Address: 5720 Dove Drive	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Pace	TAT Requested (days):		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: FL, 32571			
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested		Other:
Email: rickhagendorfer@gmail.com	WO #:		
Project Name: CCR - Plant Daniel	Project #: 18020047		
Site:	SSOW#:		

Sample Identification	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)	9315_Ra226, Ra226Ra228_AS	6020, 7470A App III and App IV analytes	2540C_Calcd, 300_ORGFM_28D Cl, Fl, SO4	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N		
BAW-1	2/11/19	1105	G	Water			X	X	X		
BAW-2A	2/12/19	1031									
BAW-3	2/12/19	0740									
BAW-4	2/11/19	1420									
BAW-5	2/11/19	1325									
BAW-7	2/12/19	1550									
Dup-01	2/11/19	1105									
Dup-02	2/12/19	0931	↓	↓			↓	↓	↓		
FB-01	2/12/19	1500	G	Water			X	X	X		

180-86658 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	2/12/19 1645	RDH		2/13/19 0930	TA PGH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1530	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: TN 2/13/19	Company

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

Ver: 08/04/2016

Do Not Lift Using This Tag
Align FedEx Pouch Here
Do Not Lift Using Th
ORIGIN ID:BIXA (251) 269-3637
RDH ENVIRONMENTAL
5720 DOVE DR
MILTON, FL 32571
UNITED STATES US
SHIP DATE: 12FEB19
ACTWGT: 53.00 LB
CAD: 006993799/SSFE1922
DIMS: 24x13x13 IN
BILL THIRD PARTY
TO VERONICA BORTOT
EUROFINS TEST AMERICA
301 ALPHA DR
EXPORT PA 15632
Part # 156297-435 RRDB2 EXP 12/19
180-86658 Waybill
FedEx Express
WED - 13 FEB 10:30A
PRIORITY OVERNIGHT
15238
PA-US
PIT
FedEx
TRK# 0201 7854 6369 9966
65 AGCA
Uncorrected temp
Thermometer ID
CF
Initials
PT-WI-SR-001 effective 11/8/18
FID 842403 13FEB19 LBEA 563C2/0E3D/0C8A

Part # 156297-435 RRDB2 EXP 12/19
ORIGIN ID:BIXA (251) 269-3637
RDH ENVIRONMENTAL
5720 DOVE DR
HILTON, FL 32571
UNITED STATES US
SHIP DATE: 12FEB19
ACTWGT: 64.20 LB
CAD: 006993799/SSFE1922
DIMS: 24x13x13 IN
BILL THIRD PARTY
TO VERONICA BORTOT
EUROFINS TEST AMERICA
301 ALPHA DR
EXPORT PA 15632
(000) 000-0000
DEPT:
FedEx Express
10:30A
PRIORITY OVERNIGHT
TRK# 0201 7854 6369 9977
65 AGCA
15238
PA-US
PIT
Uncorrected temp
Thermometer ID
CF +/-0
Initials
PT-WI-SR-001 effective 11/8/18
FID 842483 13FEB19 L6EA 553C2/9E3D/8CBA
RT 469
1
10:30
A
9977
02.13
FZ
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Country
Not deliver to P.O. boxes or P.O. ZIP codes.
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TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-354956.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-86658-2
Address: 13715 Rider Trail North,	Due Date Requested: 3/11/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_AS/ (MOD) Copy Analytes	9315_Ra226/PrecSep_21 (MOD) Copy Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
BAW-1 (180-86658-1)	2/11/19	11:05 Eastern		Water			X	X	X	1	
BAW-2A (180-86658-2)	2/12/19	10:31 Eastern		Water			X	X	X	1	
BAW-3 (180-86658-3)	2/12/19	07:40 Eastern		Water			X	X	X	1	
BAW-4 (180-86658-4)	2/11/19	14:20 Eastern		Water			X	X	X	1	
BAW-5 (180-86658-5)	2/11/19	13:25 Eastern		Water			X	X	X	1	
BAW-7 (180-86658-6)	2/12/19	15:50 Eastern		Water			X	X	X	1	
DUP-01 (180-86658-7)	2/11/19	11:05 Eastern		Water			X	X	X	1	
DUP-02 (180-86658-8)	2/12/19	09:31 Eastern		Water			X	X	X	1	
FB-01 (180-86658-9)	2/12/19	15:00 Eastern		Water			X	X	X	1	

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
	2/14/19 1700			2/15/19 08:50	
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:

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86658-2
SDG Number: 1

Login Number: 86658
List Number: 1
Creator: Neri, Tom

List Source: TestAmerica Pittsburgh

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.	False	Refer to Job Narrative for details.
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: Southern Company

Job Number: 180-86658-2
SDG Number: 1

Login Number: 86658
List Number: 2
Creator: Hellm, Michael

List Source: TestAmerica St. Louis
List Creation: 02/15/19 12:05 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?	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.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Product Name: Low-Flow System

Date: 2019-02-12 10:32:22

Project Information:		Pump Information:	
Operator Name	Brett Surles	Pump Model/Type	QED
Company Name	RDH	Tubing Type	PE
Project Name	Daniel BAW	Tubing Diameter	.17 in
Site Name	Plant Daniel BAW wells	Tubing Length	63 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597516		
Turbidity Make/Model	HACH	Pump placement from TOC	57.2 ft

Well Information:		Pumping Information:	
Well ID	BAW-2a	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7661957 L
Well Total Depth	62.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.01 in
Depth to Water	32.4 ft	Total Volume Pumped	18 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	10:10:41	1200.02	23.35	4.83	50.94	5.26	37.41	2.86	91.98
Last 5	10:15:41	1500.02	23.38	4.84	51.02	4.51	37.41	2.83	91.07
Last 5	10:20:41	1800.02	23.42	4.84	51.00	3.05	37.41	2.81	90.66
Last 5	10:25:41	2100.02	23.45	4.86	51.04	2.35	37.41	2.80	89.99
Last 5	10:30:41	2400.02	23.51	4.86	51.01	1.79	37.41	2.80	89.28
Variance 0			0.04	0.00	-0.03			-0.02	-0.42
Variance 1			0.02	0.01	0.05			-0.01	-0.67
Variance 2			0.07	0.00	-0.03			0.00	-0.71

Notes

Sample @1031, DUP-01@0931, rainy 68

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-11 12:06:42

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	67 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	58.1 ft

Well Information:		Pumping Information:	
Well ID	BAW-1	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7790493 L
Well Total Depth	60.6 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	0.06 in
Depth to Water	22.97 ft	Total Volume Pumped	16 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	11:43:03	1200.02	24.85	4.70	36.26	0.84	23.03	4.24	181.68
Last 5	11:48:04	1501.02	24.64	4.71	35.86	0.73	23.03	4.28	187.83
Last 5	11:53:04	1801.08	24.92	4.70	35.29	0.60	23.03	4.25	193.44
Last 5	11:58:04	2101.04	24.96	4.72	35.16	0.48	23.03	4.27	197.84
Last 5	12:03:04	2401.02	24.92	4.70	34.83	0.45	23.03	4.25	198.54
Variance 0			0.28	-0.01	-0.57			-0.03	5.61
Variance 1			0.04	0.01	-0.13			0.02	4.41
Variance 2			-0.04	-0.02	-0.32			-0.02	0.70

Notes

Sample time @ 1205. Rainy 65. Dup-01@ 1105.

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-11 13:23:49

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	72 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	64.1 ft

Well Information:		Pumping Information:	
Well ID	BAW-5	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8013664 L
Well Total Depth	69.1 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.04 in
Depth to Water	32.90 ft	Total Volume Pumped	12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	13:01:29	600.02	25.82	5.98	115.05	0.75	32.94	0.14	-12.37
Last 5	13:06:29	900.02	25.81	6.03	116.11	0.64	32.94	0.14	-52.49
Last 5	13:11:29	1200.02	25.81	6.06	116.65	0.78	32.94	0.14	-65.73
Last 5	13:16:29	1500.02	25.86	6.07	116.76	0.97	32.94	0.14	-66.43
Last 5	13:21:29	1800.02	25.91	6.08	116.92	1.30	32.94	0.14	-67.62
Variance 0			-0.00	0.03	0.53			0.00	-13.24
Variance 1			0.06	0.01	0.11			0.00	-0.70
Variance 2			0.04	0.01	0.16			0.00	-1.19

Notes

Sample time @1325. Raining 65.

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-11 14:16:35

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	75 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	64.9 ft

Well Information:		Pumping Information:	
Well ID	BAW-4	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8147567 L
Well Total Depth	69.9 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.05 in
Depth to Water	29.5 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	14:03:41	300.02	25.47	5.13	47.84	1.16	29.55	0.35	-32.31
Last 5	14:08:41	600.02	25.47	5.04	47.62	1.04	29.55	0.17	-38.21
Last 5	14:13:41	900.02	25.29	5.00	47.14	1.08	29.55	0.15	-41.04
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	-0.09	-0.22			-0.18	-5.90
Variance 2			-0.18	-0.04	-0.48			-0.02	-2.83

Notes

Sample time @ 1420. Rainy 65.

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-12 07:40:46

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.4 ft

Well Information:		Pumping Information:	
Well ID	BAW-3	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	68.4 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.04 in
Depth to Water	31.92 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	07:17:49	300.05	26.19	4.63	71.50	2.26	31.96	0.99	142.26
Last 5	07:22:49	600.03	26.36	4.63	61.68	1.50	31.96	0.26	155.51
Last 5	07:27:49	900.02	26.51	4.63	57.74	1.37	31.96	0.21	163.10
Last 5	07:32:49	1200.02	26.57	4.63	56.28	1.16	31.96	0.20	166.97
Last 5	07:37:49	1500.02	26.60	4.65	55.77	1.02	31.96	0.19	169.35
Variance 0			0.15	-0.00	-3.95			-0.05	7.59
Variance 1			0.05	0.01	-1.46			-0.01	3.88
Variance 2			0.04	0.02	-0.51			-0.00	2.38

Notes

Sample time @0740. Rainy 66.

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-12 15:49:43

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	58.5 ft

Well Information:		Pumping Information:	
Well ID	BAW-7	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	63.5 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.03 in
Depth to Water	26.47 ft	Total Volume Pumped	171 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	15:21:48	2400.02	23.98	4.77	37.58	4.88	26.50	3.61	233.14
Last 5	15:26:48	2700.02	24.33	4.76	37.41	4.79	26.50	3.58	231.38
Last 5	15:31:48	3000.02	24.09	4.77	37.42	4.85	26.50	3.57	229.17
Last 5	15:36:48	3300.01	24.20	4.78	37.48	4.88	26.50	3.59	227.43
Last 5	15:41:48	3600.02	24.29	4.79	37.51	4.85	26.50	3.61	226.61
Variance 0			-0.24	0.01	0.01			-0.01	-2.21
Variance 1			0.10	0.01	0.06			0.02	-1.74
Variance 2			0.09	0.01	0.03			0.02	-0.82

Notes

Sample time @ 1550. Rainy 62. FB-01 @ 1500. At approximately 22,000 seconds the program glitched and caused loss of data. Program was restarted and run for 3600 seconds as shown in data.

Grab Samples

1st
Semi-Annual
Monitoring Event

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-89251-1
Laboratory Sample Delivery Group: Ash Pond B
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
3535 Colonnade Parkway
Bin S 530 EC
Birmingham, Alabama 35243

Attn: Lauren Parker

Authorized for release by:
5/31/2019 5:23:46 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-89251-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-89251-1

Comments
No additional comments.

Receipt
The samples were received on 4/19/2019 6:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 2.1º C.

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

RAD
Method(s) PrecSep_0: Radium 228 Prep Batch 426029

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-1 (180-89251-1), BAW-2A (180-89251-2), BAW-3 (180-89251-3), BAW-4 (180-89251-4), BAW-5 (180-89251-5), BAW-7 (180-89251-6), BAW-9 (180-89251-7), DUP-01 (180-89251-8), DUP-02 (180-89251-9) and FB-01 (180-89251-10). 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 426025:

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-1 (180-89251-1), BAW-2A (180-89251-2), BAW-3 (180-89251-3), BAW-4 (180-89251-4), BAW-5 (180-89251-5), BAW-7 (180-89251-6), BAW-9 (180-89251-7), DUP-01 (180-89251-8), DUP-02 (180-89251-9) and FB-01 (180-89251-10). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) 9320: Ra-228 Prep Batch 160-426029

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-1 (180-89251-1), BAW-2A (180-89251-2), BAW-3 (180-89251-3), BAW-4 (180-89251-4), BAW-5 (180-89251-5), BAW-7 (180-89251-6), BAW-9 (180-89251-7), DUP-01 (180-89251-8), DUP-02 (180-89251-9), FB-01 (180-89251-10), (LCS 160-426029/1-A), (LCSD 160-426029/2-A) and (MB 160-426029/23-A)

Method(s) 9315: Ra-226 Prep Batch 160-426025

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-1 (180-89251-1), BAW-2A (180-89251-2), BAW-3 (180-89251-3), BAW-4 (180-89251-4), BAW-5 (180-89251-5), BAW-7 (180-89251-6), BAW-9 (180-89251-7), DUP-01 (180-89251-8), DUP-02 (180-89251-9), FB-01 (180-89251-10), (LCS 160-426025/1-A), (LCSD 160-426025/2-A) and (MB 160-426025/23-A)

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

Metals
Method(s) 6020: The method blank for preparation batch 400-438240 and analytical batch 400-438847 contained Boron 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.

Job ID: 180-89251-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Method(s) 245.1, 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 400-438821 and analytical batch 400-439191 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) 245.1, 7470A: The method blank for preparation batch 400-438821 and analytical batch 400-439191 contained Mercury above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, 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.

Field Service / Mobile Lab
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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

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.

Metals

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

Rad

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

Glossary

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

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Laboratory: Eurofins 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	06-27-19
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
South Carolina	State Program	4	89014	04-30-19 *
Texas	NELAP	6	T104704528-15-2	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Laboratory: Eurofins TestAmerica, Pensacola

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
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-20
West Virginia DEP	State Program	3	136	07-31-19

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Laboratory: Eurofins 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	06-30-19
ANAB	DoD		L2305	04-06-22
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19 *
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-19 *
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19 *
New York	NELAP	2	11616	03-31-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19 *
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-89251-1	BAW-1	Water	04/17/19 10:40	04/19/19 18:00	
180-89251-2	BAW-2A	Water	04/17/19 14:25	04/19/19 18:00	
180-89251-3	BAW-3	Water	04/17/19 13:50	04/19/19 18:00	
180-89251-4	BAW-4	Water	04/17/19 12:00	04/19/19 18:00	
180-89251-5	BAW-5	Water	04/17/19 12:55	04/19/19 18:00	
180-89251-6	BAW-7	Water	04/18/19 12:05	04/19/19 18:00	
180-89251-7	BAW-9	Water	04/18/19 15:15	04/19/19 18:00	
180-89251-8	DUP-01	Water	04/17/19 09:40	04/19/19 18:00	
180-89251-9	DUP-02	Water	04/18/19 14:15	04/19/19 18:00	
180-89251-10	FB-01	Water	04/18/19 15:10	04/19/19 18:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN
7470A	Preparation, Mercury	SW846	TAL PEN
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
None = None
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 PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: BAW-1

Date Collected: 04/17/19 10:40
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-1

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	EPA 300.0 R2.1		1			276713	04/25/19 11:37	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:18	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 16:53	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276458	04/22/19 18:19	TAM	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.49 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:23	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			999.49 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/17/19 10:40	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-2A

Date Collected: 04/17/19 14:25
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-2

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	EPA 300.0 R2.1		1			276713	04/25/19 11:53	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:38	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 16:55	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276458	04/22/19 18:19	TAM	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.49 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:23	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			999.49 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: BAW-2A
Date Collected: 04/17/19 14:25
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-2
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	Field Sampling		1			277604	04/17/19 14:25	FDS	TAL PIT

Client Sample ID: BAW-3
Date Collected: 04/17/19 13:50
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-3
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	EPA 300.0 R2.1		1			276713	04/25/19 12:09	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:42	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 16:57	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276458	04/22/19 18:19	TAM	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.46 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:23	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.46 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/17/19 13:50	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-4
Date Collected: 04/17/19 12:00
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-4
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	EPA 300.0 R2.1		1			276713	04/25/19 12:24	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:46	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 16:59	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276458	04/22/19 18:19	TAM	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: BAW-4
Date Collected: 04/17/19 12:00
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.46 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:23	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			999.46 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/17/19 12:00	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-5
Date Collected: 04/17/19 12:55
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-5
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	EPA 300.0 R2.1		1			276713	04/25/19 12:40	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:50	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 17:05	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276547	04/23/19 12:35	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.97 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:23	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.97 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/17/19 12:55	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-7
Date Collected: 04/18/19 12:05
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-6
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	EPA 300.0 R2.1		1	1 mL	1.0 mL	276713	04/25/19 13:43	MJH	TAL PIT
	Instrument ID: CHICS2100B									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: BAW-7

Date Collected: 04/18/19 12:05
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-6

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	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:54	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	05/01/19 10:35	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276560	04/23/19 13:18	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.94 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:23	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.94 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/18/19 12:05	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-9

Date Collected: 04/18/19 15:15
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-7

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	EPA 300.0 R2.1		1	1 mL	1.0 mL	276713	04/25/19 13:59	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 03:58	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 17:09	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276560	04/23/19 13:18	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.29 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429536	05/22/19 06:24	CDR	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			999.29 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428140	05/14/19 08:38	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/18/19 15:15	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: DUP-01

Date Collected: 04/17/19 09:40
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-8

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	EPA 300.0 R2.1		1	1 mL	1.0 mL	276713	04/25/19 14:15	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 04:02	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 17:11	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276547	04/23/19 12:35	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.93 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429534	05/22/19 10:11	CDR	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			999.93 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428139	05/14/19 08:41	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-02

Date Collected: 04/18/19 14:15
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-9

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	EPA 300.0 R2.1		1			276713	04/25/19 14:31	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 04:06	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 17:13	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276560	04/23/19 13:18	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429534	05/22/19 10:11	CDR	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428139	05/14/19 08:41	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: FB-01
Date Collected: 04/18/19 15:10
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-10
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	EPA 300.0 R2.1		1			276713	04/25/19 13:28	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438240	04/24/19 11:38	AC	TAL PEN
Total Recoverable	Analysis	6020		5			438847	04/27/19 04:10	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	438821	04/29/19 08:49	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439191	04/30/19 17:15	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276560	04/23/19 13:18	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.44 mL	1.0 g	426025	04/29/19 09:21		TAL SL
Total/NA	Analysis	9315		1			429534	05/22/19 10:11	CDR	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			1000.44 mL	1.0 g	426029	04/29/19 09:49		TAL SL
Total/NA	Analysis	9320		1			428139	05/14/19 08:41	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			429550	05/23/19 08:47	SMP	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL PEN
- Batch Type: Prep
  - AC = Alexis Castaing
  - JAP = Jane Parker
- Batch Type: Analysis
  - DRE = Daniel Etscheid
  - JAP = Jane Parker

Lab: TAL PIT
- Batch Type: Analysis
  - AVS = Abbey Smith
  - FDS = Sampler Field
  - MJH = Matthew Hartman
  - TAM = Tessa Mastalski

Lab: TAL SL
- Batch Type: Analysis
  - CDR = Conrad Reuscher
  - KLS = Kody Saulters
  - SMP = Siobhan Perry

Client Sample ID: BAW-1
Date Collected: 04/17/19 10:40
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-1
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.99**		1.00	0.715	mg/L			04/25/19 11:37	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 11:37	1
Sulfate	**1.43**		1.00	0.380	mg/L			04/25/19 11:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0305**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:18	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:18	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:18	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:18	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:18	5
Cobalt	**0.000825**	**J**	0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:18	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:18	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:18	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:18	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:18	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:18	5
Lithium	**0.00229**	**J**	0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:18	5
Calcium	**0.893**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:18	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:18	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 16:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**16.0**		10.0	10.0	mg/L			04/22/19 18:19	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.138**		0.0764	0.0774	1.00	0.0924	pCi/L	04/29/19 09:21	05/22/19 06:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:23*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.592**		0.227	0.233	1.00	0.308	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*93.8*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*

Client Sample ID: BAW-1

Lab Sample ID: 180-89251-1

Date Collected: 04/17/19 10:40
Matrix: Water
Date Received: 04/19/19 18:00

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	**0.729**		0.240	0.246	5.00	0.308	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**4.9**				SU			04/17/19 10:40	1

Client Sample ID: BAW-2A

Lab Sample ID: 180-89251-2

Date Collected: 04/17/19 14:25
Matrix: Water
Date Received: 04/19/19 18:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.03**		1.00	0.715	mg/L			04/25/19 11:53	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 11:53	1
Sulfate	**2.82**		1.00	0.380	mg/L			04/25/19 11:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0396**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:38	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:38	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:38	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:38	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:38	5
Cobalt	**0.00106**	**J**	0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:38	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:38	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:38	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:38	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:38	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:38	5
Lithium	**0.00191**	**J**	0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:38	5
Calcium	**0.755**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:38	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:38	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 16:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**22.0**		10.0	10.0	mg/L			04/22/19 18:19	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.155**		0.0825	0.0837	1.00	0.0971	pCi/L	04/29/19 09:21	05/22/19 06:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.0*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:23*	*1*

Client Sample ID: BAW-2A

Date Collected: 04/17/19 14:25
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-2

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.493**		0.227	0.231	1.00	0.324	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.0*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*93.5*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*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	**0.648**		0.242	0.246	5.00	0.324	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**4.79**				SU			04/17/19 14:25	1

Client Sample ID: BAW-3

Date Collected: 04/17/19 13:50
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-3

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.71**		1.00	0.715	mg/L			04/25/19 12:09	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 12:09	1
Sulfate	**2.50**		1.00	0.380	mg/L			04/25/19 12:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0263**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:42	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:42	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:42	5
Cadmium	**0.000915**	**J**	0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:42	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:42	5
Cobalt	**0.00603**		0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:42	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:42	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:42	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:42	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:42	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:42	5
Lithium	**0.00197**	**J**	0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:42	5
Calcium	**0.711**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:42	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:42	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 16:57	1

Client Sample ID: BAW-3

Date Collected: 04/17/19 13:50
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	27.0		10.0	10.0	mg/L			04/22/19 18:19	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.137		0.0759	0.0769	1.00	0.0868	pCi/L	04/29/19 09:21	05/22/19 06:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:23*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.509		0.241	0.246	1.00	0.342	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*89.7*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*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	0.646		0.253	0.258	5.00	0.342	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	4.71				SU			04/17/19 13:50	1

Client Sample ID: BAW-4

Date Collected: 04/17/19 12:00
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-4

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.68		1.00	0.715	mg/L			04/25/19 12:24	1
Fluoride	0.0330	J	0.200	0.0263	mg/L			04/25/19 12:24	1
Sulfate	3.15		1.00	0.380	mg/L			04/25/19 12:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.00888		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:46	5
Arsenic	0.000645	J	0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:46	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:46	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:46	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:46	5
Cobalt	0.00116	J	0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:46	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:46	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:46	5

Client Sample ID: BAW-4

Date Collected: 04/17/19 12:00
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:46	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:46	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:46	5
Lithium	**0.0236**		0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:46	5
Calcium	**2.77**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:46	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:46	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 16:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**37.0**		10.0	10.0	mg/L			04/22/19 18:19	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0708	U	0.0676	0.0679	1.00	0.101	pCi/L	04/29/19 09:21	05/22/19 06:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.4*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:23*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.422**		0.232	0.235	1.00	0.346	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.4*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*91.6*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*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	**0.493**		0.242	0.245	5.00	0.346	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**5.13**				SU			04/17/19 12:00	1

Client Sample ID: BAW-5

Date Collected: 04/17/19 12:55
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-5

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.24**		1.00	0.715	mg/L			04/25/19 12:40	1

Client Sample ID: BAW-5
Date Collected: 04/17/19 12:55
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-5
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.0421**	**J**	0.200	0.0263	mg/L			04/25/19 12:40	1
Sulfate	**3.27**		1.00	0.380	mg/L			04/25/19 12:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0378**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:50	5
Arsenic	**0.00218**		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:50	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:50	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:50	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:50	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:50	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:50	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:50	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:50	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:50	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:50	5
Lithium	**0.174**		0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:50	5
Calcium	**13.0**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:50	5
Boron	**0.118**	**B**	0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:50	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 17:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**82.0**		10.0	10.0	mg/L			04/23/19 12:35	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.139**		0.0799	0.0809	1.00	0.0933	pCi/L	04/29/19 09:21	05/22/19 06:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:23*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.187	U	0.200	0.201	1.00	0.327	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*95.0*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*

Client Sample ID: BAW-5

Date Collected: 04/17/19 12:55
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-5

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	0.326	U	0.215	0.217	5.00	0.327	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**6.14**				SU			04/17/19 12:55	1

Client Sample ID: BAW-7

Date Collected: 04/18/19 12:05
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-6

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.64**		1.00	0.715	mg/L			04/25/19 13:43	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 13:43	1
Sulfate	**1.82**		1.00	0.380	mg/L			04/25/19 13:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0101**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:54	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:54	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:54	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:54	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:54	5
Cobalt	**0.000705**	**J**	0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:54	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:54	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:54	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:54	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:54	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:54	5
Lithium	**0.00238**	**J**	0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:54	5
Calcium	**0.550**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:54	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:54	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	05/01/19 10:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**39.0**		10.0	10.0	mg/L			04/23/19 13:18	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.186**		0.0862	0.0878	1.00	0.0885	pCi/L	04/29/19 09:21	05/22/19 06:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:23*	*1*

Client Sample ID: BAW-7

Date Collected: 04/18/19 12:05
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-6

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.295	U	0.203	0.204	1.00	0.310	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*91.2*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*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	**0.480**		0.221	0.222	5.00	0.310	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**4.9**				SU			04/18/19 12:05	1

Client Sample ID: BAW-9

Date Collected: 04/18/19 15:15
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-7

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**161**		1.00	0.715	mg/L			04/25/19 13:59	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 13:59	1
Sulfate	**3.87**		1.00	0.380	mg/L			04/25/19 13:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0192**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 03:58	5
Arsenic	**0.00146**		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 03:58	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:58	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 03:58	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 03:58	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 03:58	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 03:58	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 03:58	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 03:58	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 03:58	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 03:58	5
Lithium	**0.119**		0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 03:58	5
Calcium	**7.69**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 03:58	5
Boron	**0.140**	**B**	0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 03:58	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000162**	**J B**	0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 17:09	1

Client Sample ID: BAW-9

Date Collected: 04/18/19 15:15
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**56.0**		10.0	10.0	mg/L			04/23/19 13:18	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.197**		0.0977	0.0993	1.00	0.119	pCi/L	04/29/19 09:21	05/22/19 06:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*04/29/19 09:21*	*05/22/19 06:24*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.339	U	0.254	0.256	1.00	0.401	pCi/L	04/29/19 09:49	05/14/19 08:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*1*
Y Carrier	*93.5*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:38*	*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**		0.272	0.275	5.00	0.401	pCi/L		05/23/19 08:47	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**5.78**				SU			04/18/19 15:15	1

Client Sample ID: DUP-01

Date Collected: 04/17/19 09:40
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-8

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.10**		1.00	0.715	mg/L			04/25/19 14:15	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 14:15	1
Sulfate	**1.39**		1.00	0.380	mg/L			04/25/19 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0294**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 04:02	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 04:02	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 04:02	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 04:02	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 04:02	5
Cobalt	**0.000845**	**J**	0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 04:02	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 04:02	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 04:02	5

Client Sample ID: DUP-01

Date Collected: 04/17/19 09:40
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-8
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 04:02	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 04:02	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 04:02	5
Lithium	**0.00158**	**J**	0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 04:02	5
Calcium	**0.866**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 04:02	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 04:02	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 17:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**24.0**		10.0	10.0	mg/L			04/23/19 12:35	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.144**		0.0815	0.0825	1.00	0.103	pCi/L	04/29/19 09:21	05/22/19 10:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*04/29/19 09:21*	*05/22/19 10:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.213	U	0.198	0.199	1.00	0.320	pCi/L	04/29/19 09:49	05/14/19 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*1*
Y Carrier	*96.4*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*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	**0.357**		0.214	0.215	5.00	0.320	pCi/L		05/23/19 08:47	1

Client Sample ID: DUP-02

Date Collected: 04/18/19 14:15
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-9
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.27**		1.00	0.715	mg/L			04/25/19 14:31	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 14:31	1
Sulfate	**3.82**		1.00	0.380	mg/L			04/25/19 14:31	1

Client Sample ID: DUP-02

Date Collected: 04/18/19 14:15
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0208**		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 04:06	5
Arsenic	**0.00158**		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 04:06	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 04:06	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 04:06	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 04:06	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 04:06	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 04:06	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 04:06	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 04:06	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 04:06	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 04:06	5
Lithium	**0.116**		0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 04:06	5
Calcium	**7.94**		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 04:06	5
Boron	**0.135**	**B**	0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 04:06	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**59.0**		10.0	10.0	mg/L			04/23/19 13:18	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.120**		0.0763	0.0771	1.00	0.0991	pCi/L	04/29/19 09:21	05/22/19 10:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*40 - 110*	*04/29/19 09:21*	*05/22/19 10:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.189	U	0.225	0.226	1.00	0.372	pCi/L	04/29/19 09:49	05/14/19 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*1*
Y Carrier	*87.9*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*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	0.309	U	0.238	0.239	5.00	0.372	pCi/L		05/23/19 08:47	1

Client Sample ID: FB-01
Date Collected: 04/18/19 15:10
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-10
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			04/25/19 13:28	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 13:28	1
Sulfate	<0.380		1.00	0.380	mg/L			04/25/19 13:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.000490		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 04:10	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 04:10	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 04:10	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 04:10	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 04:10	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 04:10	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 04:10	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 04:10	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 04:10	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 04:10	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 04:10	5
Lithium	<0.00110		0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 04:10	5
Calcium	<0.125		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 04:10	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 04:10	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		04/29/19 08:49	04/30/19 17:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			04/23/19 13:18	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0563	U	0.0674	0.0676	1.00	0.110	pCi/L	04/29/19 09:21	05/22/19 10:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*04/29/19 09:21*	*05/22/19 10:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.213	U	0.215	0.216	1.00	0.349	pCi/L	04/29/19 09:49	05/14/19 08:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*1*
Y Carrier	*88.2*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*1*

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89251-1
SDG: Ash Pond B

Client Sample ID: FB-01
Date Collected: 04/18/19 15:10
Date Received: 04/19/19 18:00

Lab Sample ID: 180-89251-10
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	0.269	U	0.225	0.226	5.00	0.349	pCi/L		05/23/19 08:47	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-276713/5
Matrix: Water
Analysis Batch: 276713

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			04/25/19 06:13	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/25/19 06:13	1
Sulfate	<0.380		1.00	0.380	mg/L			04/25/19 06:13	1

Lab Sample ID: LCS 180-276713/6
Matrix: Water
Analysis Batch: 276713

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.40		mg/L		98	90 - 110
Fluoride	1.25	1.239		mg/L		99	90 - 110
Sulfate	25.0	24.31		mg/L		97	90 - 110

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-438240/1-A ^5
Matrix: Water
Analysis Batch: 438847

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 438240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.000490		0.00250	0.000490	mg/L		04/24/19 11:38	04/27/19 02:18	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/24/19 11:38	04/27/19 02:18	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 02:18	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/24/19 11:38	04/27/19 02:18	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/24/19 11:38	04/27/19 02:18	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/24/19 11:38	04/27/19 02:18	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/24/19 11:38	04/27/19 02:18	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/24/19 11:38	04/27/19 02:18	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/24/19 11:38	04/27/19 02:18	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/24/19 11:38	04/27/19 02:18	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/24/19 11:38	04/27/19 02:18	5
Lithium	<0.00110		0.00500	0.00110	mg/L		04/24/19 11:38	04/27/19 02:18	5
Calcium	<0.125		0.250	0.125	mg/L		04/24/19 11:38	04/27/19 02:18	5
Boron	0.04205	J	0.0500	0.0210	mg/L		04/24/19 11:38	04/27/19 02:18	5

Lab Sample ID: LCS 400-438240/2-A
Matrix: Water
Analysis Batch: 438847

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 438240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0500	0.04914		mg/L		98	80 - 120
Arsenic	0.0500	0.05139		mg/L		103	80 - 120
Beryllium	0.0500	0.04883		mg/L		98	80 - 120
Cadmium	0.0500	0.05241		mg/L		105	80 - 120
Chromium	0.0500	0.05046		mg/L		101	80 - 120
Cobalt	0.0500	0.05267		mg/L		105	80 - 120
Molybdenum	0.0500	0.04931		mg/L		99	80 - 120
Lead	0.0500	0.04890		mg/L		98	80 - 120
Antimony	0.0500	0.04760		mg/L		95	80 - 120

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

Lab Sample ID: LCS 400-438240/2-A
Matrix: Water
Analysis Batch: 438847

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 438240

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	0.0100	0.009897		mg/L		99	80 - 120
Selenium	0.0500	0.04969		mg/L		99	80 - 120
Lithium	0.0500	0.05198		mg/L		104	80 - 120
Calcium	5.00	4.870		mg/L		97	80 - 120
Boron	0.100	0.09739		mg/L		97	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-438821/14-A
Matrix: Water
Analysis Batch: 439191

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438821

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00007290	J	0.000200	0.0000700	mg/L		04/29/19 08:38	04/30/19 16:40	1

Lab Sample ID: LCS 400-438821/15-A
Matrix: Water
Analysis Batch: 439191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438821

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.001152		mg/L		114	80 - 120

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

Lab Sample ID: MB 180-276458/2
Matrix: Water
Analysis Batch: 276458

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	<10.0		10.0	10.0	mg/L			04/22/19 18:19	1

Lab Sample ID: LCS 180-276458/1
Matrix: Water
Analysis Batch: 276458

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	201	192.0		mg/L		96	80 - 120

Lab Sample ID: MB 180-276547/2
Matrix: Water
Analysis Batch: 276547

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	<10.0		10.0	10.0	mg/L			04/23/19 12:35	1

Lab Sample ID: LCS 180-276547/1
Matrix: Water
Analysis Batch: 276547

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	201	192.0		mg/L		96	80 - 120

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

Lab Sample ID: MB 180-276560/2
Matrix: Water
Analysis Batch: 276560

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	<10.0		10.0	10.0	mg/L			04/23/19 13:18	1

Lab Sample ID: LCS 180-276560/1
Matrix: Water
Analysis Batch: 276560

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			201	178.0		mg/L		89	80 - 120		

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-426025/23-A
Matrix: Water
Analysis Batch: 429534

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426025

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05880	U	0.0569	0.0571	1.00	0.0858	pCi/L	04/29/19 09:21	05/22/19 10:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*04/29/19 09:21*	*05/22/19 10:11*	*1*

Lab Sample ID: LCS 160-426025/1-A
Matrix: Water
Analysis Batch: 429534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426025

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	9.917		1.05	1.00	0.109	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.5*		*40 - 110*

Lab Sample ID: LCSD 160-426025/2-A
Matrix: Water
Analysis Batch: 429534

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426025

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	9.556		1.01	1.00	0.0957	pCi/L	84	75 - 125	0.18	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*96.9*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-426029/23-A
Matrix: Water
Analysis Batch: 428139

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426029

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3468	U	0.270	0.272	1.00	0.430	pCi/L	04/29/19 09:49	05/14/19 08:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*1*
Y Carrier	*90.1*		*40 - 110*	*04/29/19 09:49*	*05/14/19 08:41*	*1*

Lab Sample ID: LCS 160-426029/1-A
Matrix: Water
Analysis Batch: 428140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426029

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.21	10.47		1.18	1.00	0.381	pCi/L	114	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.5*		*40 - 110*
Y Carrier	*92.0*		*40 - 110*

Lab Sample ID: LCSD 160-426029/2-A
Matrix: Water
Analysis Batch: 428140

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426029

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			9.21	9.702		1.11	1.00	0.355	pCi/L	105	75 - 125	0.34	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*96.9*		*40 - 110*
Y Carrier	*86.7*		*40 - 110*

HPLC/IC

Analysis Batch: 276713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	EPA 300.0 R2.1	
180-89251-2	BAW-2A	Total/NA	Water	EPA 300.0 R2.1	
180-89251-3	BAW-3	Total/NA	Water	EPA 300.0 R2.1	
180-89251-4	BAW-4	Total/NA	Water	EPA 300.0 R2.1	
180-89251-5	BAW-5	Total/NA	Water	EPA 300.0 R2.1	
180-89251-6	BAW-7	Total/NA	Water	EPA 300.0 R2.1	
180-89251-7	BAW-9	Total/NA	Water	EPA 300.0 R2.1	
180-89251-8	DUP-01	Total/NA	Water	EPA 300.0 R2.1	
180-89251-9	DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-89251-10	FB-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-276713/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-276713/6	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 438240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total Recoverable	Water	3005A	
180-89251-2	BAW-2A	Total Recoverable	Water	3005A	
180-89251-3	BAW-3	Total Recoverable	Water	3005A	
180-89251-4	BAW-4	Total Recoverable	Water	3005A	
180-89251-5	BAW-5	Total Recoverable	Water	3005A	
180-89251-6	BAW-7	Total Recoverable	Water	3005A	
180-89251-7	BAW-9	Total Recoverable	Water	3005A	
180-89251-8	DUP-01	Total Recoverable	Water	3005A	
180-89251-9	DUP-02	Total Recoverable	Water	3005A	
180-89251-10	FB-01	Total Recoverable	Water	3005A	
MB 400-438240/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-438240/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 438821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	7470A	
180-89251-2	BAW-2A	Total/NA	Water	7470A	
180-89251-3	BAW-3	Total/NA	Water	7470A	
180-89251-4	BAW-4	Total/NA	Water	7470A	
180-89251-5	BAW-5	Total/NA	Water	7470A	
180-89251-6	BAW-7	Total/NA	Water	7470A	
180-89251-7	BAW-9	Total/NA	Water	7470A	
180-89251-8	DUP-01	Total/NA	Water	7470A	
180-89251-9	DUP-02	Total/NA	Water	7470A	
180-89251-10	FB-01	Total/NA	Water	7470A	
MB 400-438821/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-438821/15-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 438847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total Recoverable	Water	6020	438240
180-89251-2	BAW-2A	Total Recoverable	Water	6020	438240
180-89251-3	BAW-3	Total Recoverable	Water	6020	438240
180-89251-4	BAW-4	Total Recoverable	Water	6020	438240

Metals (Continued)

Analysis Batch: 438847 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-5	BAW-5	Total Recoverable	Water	6020	438240
180-89251-6	BAW-7	Total Recoverable	Water	6020	438240
180-89251-7	BAW-9	Total Recoverable	Water	6020	438240
180-89251-8	DUP-01	Total Recoverable	Water	6020	438240
180-89251-9	DUP-02	Total Recoverable	Water	6020	438240
180-89251-10	FB-01	Total Recoverable	Water	6020	438240
MB 400-438240/1-A ^5	Method Blank	Total Recoverable	Water	6020	438240
LCS 400-438240/2-A	Lab Control Sample	Total Recoverable	Water	6020	438240

Analysis Batch: 439191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	7470A	438821
180-89251-2	BAW-2A	Total/NA	Water	7470A	438821
180-89251-3	BAW-3	Total/NA	Water	7470A	438821
180-89251-4	BAW-4	Total/NA	Water	7470A	438821
180-89251-5	BAW-5	Total/NA	Water	7470A	438821
180-89251-6	BAW-7	Total/NA	Water	7470A	438821
180-89251-7	BAW-9	Total/NA	Water	7470A	438821
180-89251-8	DUP-01	Total/NA	Water	7470A	438821
180-89251-9	DUP-02	Total/NA	Water	7470A	438821
180-89251-10	FB-01	Total/NA	Water	7470A	438821
MB 400-438821/14-A	Method Blank	Total/NA	Water	7470A	438821
LCS 400-438821/15-A	Lab Control Sample	Total/NA	Water	7470A	438821

General Chemistry

Analysis Batch: 276458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	SM 2540C	
180-89251-2	BAW-2A	Total/NA	Water	SM 2540C	
180-89251-3	BAW-3	Total/NA	Water	SM 2540C	
180-89251-4	BAW-4	Total/NA	Water	SM 2540C	
MB 180-276458/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-276458/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 276547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-5	BAW-5	Total/NA	Water	SM 2540C	
180-89251-8	DUP-01	Total/NA	Water	SM 2540C	
MB 180-276547/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-276547/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 276560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-6	BAW-7	Total/NA	Water	SM 2540C	
180-89251-7	BAW-9	Total/NA	Water	SM 2540C	
180-89251-9	DUP-02	Total/NA	Water	SM 2540C	
180-89251-10	FB-01	Total/NA	Water	SM 2540C	
MB 180-276560/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-276560/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 426025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	PrecSep-21	
180-89251-2	BAW-2A	Total/NA	Water	PrecSep-21	
180-89251-3	BAW-3	Total/NA	Water	PrecSep-21	
180-89251-4	BAW-4	Total/NA	Water	PrecSep-21	
180-89251-5	BAW-5	Total/NA	Water	PrecSep-21	
180-89251-6	BAW-7	Total/NA	Water	PrecSep-21	
180-89251-7	BAW-9	Total/NA	Water	PrecSep-21	
180-89251-8	DUP-01	Total/NA	Water	PrecSep-21	
180-89251-9	DUP-02	Total/NA	Water	PrecSep-21	
180-89251-10	FB-01	Total/NA	Water	PrecSep-21	
MB 160-426025/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-426025/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-426025/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 426029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	PrecSep_0	
180-89251-2	BAW-2A	Total/NA	Water	PrecSep_0	
180-89251-3	BAW-3	Total/NA	Water	PrecSep_0	
180-89251-4	BAW-4	Total/NA	Water	PrecSep_0	
180-89251-5	BAW-5	Total/NA	Water	PrecSep_0	
180-89251-6	BAW-7	Total/NA	Water	PrecSep_0	
180-89251-7	BAW-9	Total/NA	Water	PrecSep_0	
180-89251-8	DUP-01	Total/NA	Water	PrecSep_0	
180-89251-9	DUP-02	Total/NA	Water	PrecSep_0	
180-89251-10	FB-01	Total/NA	Water	PrecSep_0	
MB 160-426029/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-426029/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-426029/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Field Service / Mobile Lab

Analysis Batch: 277604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89251-1	BAW-1	Total/NA	Water	Field Sampling	
180-89251-2	BAW-2A	Total/NA	Water	Field Sampling	
180-89251-3	BAW-3	Total/NA	Water	Field Sampling	
180-89251-4	BAW-4	Total/NA	Water	Field Sampling	
180-89251-5	BAW-5	Total/NA	Water	Field Sampling	
180-89251-6	BAW-7	Total/NA	Water	Field Sampling	
180-89251-7	BAW-9	Total/NA	Water	Field Sampling	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-51001-10708.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc				Job #:

Address: 5720 Dove Drive	Due Date Requested:
City: Pace	TAT Requested (days):
State, Zip: FL, 32571	
Phone: 205-992-6283(Tel)	PO #: Purchase Order Requested
Email: rickhagendorfer@gmail.com	WO #:
Project Name: CCR - Plant Daniel Ash Pond B CCR	Project #: 18020047
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	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)	Ra226Ra228_GFPC - Ra 226 & 228	6020, 7470A	2540C_Calcd, 300_ORGFM_28D	Appendix 3	Appendix 4	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	D	D	N			X	
[redacted] BAW-1	4/17/19	1040	G	Water					X	X		
BAW-2A		1425		Water								
BAW-3		1350		Water								
BAW-4		1200		Water								
BAW-5	4/17/19	1255		Water								
BAW-7	4/18/19	1205		Water								
BAW-9	4/18/19	1515		Water								
Dup-01	4/17/19	0940		Water								
Dup-02	4/18/19	1415		Water								
FB-01	4/18/19	1510	G	Water					X	X		

180-89251 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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: 4/18/19 1600	Company RDH	Received by:	Date/Time: 4/19/19 1800	Company MAITT
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:

Ver: 01/16/2019

Cooler 2

Uncorrected temp 2.1 °C
Thermometer ID 10
CF 0 Initials JB
PT-WI-SR-001 effective 11/8/18

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-360846.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-89251-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/1/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320_Ra228/PrecSep_0 Standard Target List	9315_Ra226/PrecSep_21 (MOD) Copy Analytes	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
BAW-1 (180-89251-1)	4/17/19	10:40 Eastern		Water			X	X	X	1	
BAW-2A (180-89251-2)	4/17/19	14:25 Eastern		Water			X	X	X	1	
BAW-3 (180-89251-3)	4/17/19	13:50 Eastern		Water			X	X	X	1	
BAW-4 (180-89251-4)	4/17/19	12:00 Eastern		Water			X	X	X	1	
BAW-5 (180-89251-5)	4/17/19	12:55 Eastern		Water			X	X	X	1	
BAW-7 (180-89251-6)	4/18/19	12:05 Eastern		Water			X	X	X	1	
BAW-9 (180-89251-7)	4/18/19	15:15 Eastern		Water			X	X	X	1	
DUP-01 (180-89251-8)	4/17/19	09:40 Eastern		Water			X	X	X	1	
DUP-02 (180-89251-9)	4/18/19	14:15 Eastern		Water			X	X	X	1	

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: 4/22/19 1700	Company TA PGH	Received by:	Date/Time: 4-23-19 09:15	Company TA SR
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:

Ver: 01/16/2019

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-360846.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-89251-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/1/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320_Ra228/PrecSep_0 Standard Target List	9315_Ra226/PrecSep_21 (MOD) Copy Analytes	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
Preservation Code:											
FB-01 (180-89251-10)	4/18/19	15:10 Eastern		Water			X	X	X	1	

180-89251 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/22/19 1700	WS Pitt	[signature]	4-23-19 0915	TA SR
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:

Ver: 01/16/2019

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-360847.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-89251-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 5/1/2019			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020/3005A (MOD) Appendix IV including Hg	7470A/FILTRATION	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BAW-1 (180-89251-1)	4/17/19	10:40 Eastern		Water			X	X	1	
BAW-2A (180-89251-2)	4/17/19	14:25 Eastern		Water			X	X	1	
BAW-3 (180-89251-3)	4/17/19	13:50 Eastern		Water			X	X	1	
BAW-4 (180-89251-4)	4/17/19	12:00 Eastern		Water			X	X	1	
BAW-5 (180-89251-5)	4/17/19	12:55 Eastern		Water			X	X	1	
BAW-7 (180-89251-6)	4/18/19	12:05 Eastern		Water			X	X	1	
BAW-9 (180-89251-7)	4/18/19	15:15 Eastern		Water			X	X	1	
DUP-01 (180-89251-8)	4/17/19	09:40 Eastern		Water			X	X	1	
DUP-02 (180-89251-9)	4/18/19	14:15 Eastern		Water			X	X	1	

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: 4/22/19 1700	Company TA	Received by: Kathy R Owen	Date/Time: 4-23-19 850	Company TA
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: 1.9°C IR8

Ver: 01/16/2019

5/31/2019

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-360847.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-89251-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 5/1/2019			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
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)	6020/3005A (MOD) Appendix IV including Hg	7470A/FILTRATION	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
FB-01 (180-89251-10)	4/18/19	15:10 Eastern		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4/22/19 1700	TAL	Kathy R Avery	4-23-19 850	TA
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: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

5/31/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-89251-1
SDG Number: Ash Pond B

Login Number: 89251
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-89251-1
SDG Number: Ash Pond B

Login Number: 89251
List Number: 2
Creator: Avery, Kathy R

List Source: Eurofins TestAmerica, Pensacola
List Creation: 04/23/19 04:46 PM

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	1.9°C IR 8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	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: Southern Company

Job Number: 180-89251-1
SDG Number: Ash Pond B

Login Number: 89251
List Number: 3
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 04/26/19 09:03 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	18.0
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.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-89260-1
Laboratory Sample Delivery Group: State
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
3535 Colonnade Parkway
Bin S 530 EC
Birmingham, Alabama 35243

Attn: Lauren Parker

Authorized for release by:
5/31/2019 5:05:17 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Job ID: 180-89260-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-89260-1

Comments
No additional comments.

Receipt
The samples were received on 4/20/2019 1:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 1.5º C.

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

RAD
Method(s) PrecSep-21: Radium 226 Prep Batch 426052:

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-8 (180-89260-1) and EB-01 (180-89260-2). 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 426058

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-8 (180-89260-1) and EB-01 (180-89260-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) 904.0, 9320: Radium-228 Prep Batch 160-426058
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-8 (180-89260-1), EB-01 (180-89260-2), (LCS 160-426058/1-A), (LCSD 160-426058/2-A) and (MB 160-426058/23-A)

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-426052

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-8 (180-89260-1), EB-01 (180-89260-2), (LCS 160-426052/1-A), (LCSD 160-426052/2-A) and (MB 160-426052/23-A)

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

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

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 180-89260-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

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

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Qualifiers

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	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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Laboratory: Eurofins 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	06-27-19
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
South Carolina	State Program	4	89014	04-30-19 *
Texas	NELAP	6	T104704528-15-2	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Laboratory: Eurofins TestAmerica, Pensacola

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
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-20
West Virginia DEP	State Program	3	136	07-31-19

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Laboratory: Eurofins 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	06-30-19
ANAB	DoD		L2305	04-06-22
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19 *
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-19 *
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19 *
New York	NELAP	2	11616	03-31-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19 *
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-89260-1	BAW-8	Water	04/19/19 08:15	04/20/19 13:50	
180-89260-2	EB-01	Water	04/19/19 07:10	04/20/19 13:50	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN
7470A	Preparation, Mercury	SW846	TAL PEN
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
None = None
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 PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Client Sample ID: BAW-8
Date Collected: 04/19/19 08:15
Date Received: 04/20/19 13:50

Lab Sample ID: 180-89260-1
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	EPA 300.0 R2.1		1			277015	04/29/19 10:02	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438449	04/25/19 11:09	AC	TAL PEN
Total Recoverable	Analysis	6020		5			439157	04/30/19 19:55	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	439210	05/02/19 14:01	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439576	05/03/19 13:50	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276658	04/24/19 12:32	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.64 mL	1.0 g	426052	04/29/19 11:42		TAL SL
Total/NA	Analysis	9315		1			429225	05/21/19 18:13	CDR	TAL SL
	Instrument ID: GFPCPROTEAN									
Total/NA	Prep	PrecSep_0			999.64 mL	1.0 g	426058	04/29/19 13:58		TAL SL
Total/NA	Analysis	9320		1			428139	05/14/19 08:51	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			429294	05/22/19 09:03	SMP	TAL SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			277604	04/19/19 08:15	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: EB-01
Date Collected: 04/19/19 07:10
Date Received: 04/20/19 13:50

Lab Sample ID: 180-89260-2
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	EPA 300.0 R2.1		1			277015	04/29/19 09:37	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	438449	04/25/19 11:09	AC	TAL PEN
Total Recoverable	Analysis	6020		5			439157	04/30/19 19:59	DRE	TAL PEN
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			40 mL	40 mL	439210	05/02/19 14:01	JAP	TAL PEN
Total/NA	Analysis	7470A		1			439576	05/03/19 13:52	JAP	TAL PEN
	Instrument ID: HYDRA AA2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	276658	04/24/19 12:32	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	426052	04/29/19 11:42		TAL SL
Total/NA	Analysis	9315		1			429225	05/21/19 18:13	CDR	TAL SL
	Instrument ID: GFPCPROTEAN									
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	426058	04/29/19 13:58		TAL SL
Total/NA	Analysis	9320		1			428139	05/14/19 08:51	KLS	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			429294	05/22/19 09:03	SMP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Laboratory References:

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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

Analyst References:

Lab: TAL PEN

Batch Type: Prep

AC = Alexis Castaing

JAP = Jane Parker

Batch Type: Analysis

DRE = Daniel Etscheid

JAP = Jane Parker

Lab: TAL PIT

Batch Type: Analysis

AVS = Abbey Smith

FDS = Sampler Field

MJH = Matthew Hartman

Lab: TAL SL

Batch Type: Analysis

CDR = Conrad Reuscher

KLS = Kody Saulters

SMP = Siobhan Perry

Client Sample ID: BAW-8

Date Collected: 04/19/19 08:15
Date Received: 04/20/19 13:50

Lab Sample ID: 180-89260-1

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.65**		1.00	0.715	mg/L			04/29/19 10:02	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/29/19 10:02	1
Sulfate	**2.83**		1.00	0.380	mg/L			04/29/19 10:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.0268**		0.00250	0.000490	mg/L		04/25/19 11:09	04/30/19 19:55	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/25/19 11:09	04/30/19 19:55	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/25/19 11:09	04/30/19 19:55	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/25/19 11:09	04/30/19 19:55	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/25/19 11:09	04/30/19 19:55	5
Cobalt	**0.000645**	**J**	0.00250	0.000400	mg/L		04/25/19 11:09	04/30/19 19:55	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/25/19 11:09	04/30/19 19:55	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/25/19 11:09	04/30/19 19:55	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/25/19 11:09	04/30/19 19:55	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/25/19 11:09	04/30/19 19:55	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/25/19 11:09	04/30/19 19:55	5
Lithium	**0.141**		0.00500	0.00110	mg/L		04/25/19 11:09	04/30/19 19:55	5
Calcium	**10.5**		0.250	0.125	mg/L		04/25/19 11:09	04/30/19 19:55	5
Boron	**0.119**		0.0500	0.0210	mg/L		04/25/19 11:09	04/30/19 19:55	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		05/02/19 14:01	05/03/19 13:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**79.0**		10.0	10.0	mg/L			04/24/19 12:32	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0423	U	0.0722	0.0723	1.00	0.126	pCi/L	04/29/19 11:42	05/21/19 18:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*04/29/19 11:42*	*05/21/19 18:13*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.233	U	0.179	0.180	1.00	0.280	pCi/L	04/29/19 13:58	05/14/19 08:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*04/29/19 13:58*	*05/14/19 08:51*	*1*
Y Carrier	*94.6*		*40 - 110*	*04/29/19 13:58*	*05/14/19 08:51*	*1*

Client Sample ID: BAW-8

Lab Sample ID: 180-89260-1
Matrix: Water
Date Collected: 04/19/19 08:15
Date Received: 04/20/19 13:50

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	0.275	U	0.193	0.194	5.00	0.280	pCi/L		05/22/19 09:03	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH by SM4500-H B	**5.84**				SU			04/19/19 08:15	1

Client Sample ID: EB-01

Lab Sample ID: 180-89260-2
Matrix: Water
Date Collected: 04/19/19 07:10
Date Received: 04/20/19 13:50

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			04/29/19 09:37	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/29/19 09:37	1
Sulfate	<0.380		1.00	0.380	mg/L			04/29/19 09:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.000490		0.00250	0.000490	mg/L		04/25/19 11:09	04/30/19 19:59	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/25/19 11:09	04/30/19 19:59	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/25/19 11:09	04/30/19 19:59	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/25/19 11:09	04/30/19 19:59	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/25/19 11:09	04/30/19 19:59	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/25/19 11:09	04/30/19 19:59	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/25/19 11:09	04/30/19 19:59	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/25/19 11:09	04/30/19 19:59	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/25/19 11:09	04/30/19 19:59	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/25/19 11:09	04/30/19 19:59	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/25/19 11:09	04/30/19 19:59	5
Lithium	<0.00110		0.00500	0.00110	mg/L		04/25/19 11:09	04/30/19 19:59	5
Calcium	<0.125		0.250	0.125	mg/L		04/25/19 11:09	04/30/19 19:59	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/25/19 11:09	04/30/19 19:59	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		05/02/19 14:01	05/03/19 13:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			04/24/19 12:32	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0839	U	0.0864	0.0867	1.00	0.137	pCi/L	04/29/19 11:42	05/21/19 18:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*40 - 110*	*04/29/19 11:42*	*05/21/19 18:13*	*1*

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

Client Sample ID: EB-01
Date Collected: 04/19/19 07:10
Date Received: 04/20/19 13:50

Lab Sample ID: 180-89260-2
Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0567	U	0.223	0.223	1.00	0.387	pCi/L	04/29/19 13:58	05/14/19 08:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.2*		*40 - 110*	*04/29/19 13:58*	*05/14/19 08:51*	*1*
Y Carrier	*90.8*		*40 - 110*	*04/29/19 13:58*	*05/14/19 08:51*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.141	U	0.239	0.239	5.00	0.387	pCi/L		05/22/19 09:03	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-277015/6
Matrix: Water
Analysis Batch: 277015

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			04/29/19 06:25	1
Fluoride	<0.0263		0.200	0.0263	mg/L			04/29/19 06:25	1
Sulfate	<0.380		1.00	0.380	mg/L			04/29/19 06:25	1

Lab Sample ID: LCS 180-277015/5
Matrix: Water
Analysis Batch: 277015

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.98		mg/L		104	90 - 110
Fluoride	1.25	1.334		mg/L		107	90 - 110
Sulfate	25.0	26.10		mg/L		104	90 - 110

Lab Sample ID: 180-89260-1 MS
Matrix: Water
Analysis Batch: 277015

Client Sample ID: BAW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.65		25.0	33.06		mg/L		102	80 - 120
Fluoride	<0.0263		1.25	1.315		mg/L		105	80 - 120
Sulfate	2.83		25.0	28.17		mg/L		101	80 - 120

Lab Sample ID: 180-89260-1 MSD
Matrix: Water
Analysis Batch: 277015

Client Sample ID: BAW-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	7.65		25.0	32.90		mg/L		101	80 - 120	0	20
Fluoride	<0.0263		1.25	1.294		mg/L		103	80 - 120	2	20
Sulfate	2.83		25.0	27.97		mg/L		101	80 - 120	1	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-438449/1-A ^5
Matrix: Water
Analysis Batch: 439157

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 438449

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.000490		0.00250	0.000490	mg/L		04/25/19 11:09	04/30/19 18:07	5
Arsenic	<0.000460		0.00125	0.000460	mg/L		04/25/19 11:09	04/30/19 18:07	5
Beryllium	<0.000340		0.00250	0.000340	mg/L		04/25/19 11:09	04/30/19 18:07	5
Cadmium	<0.000340		0.00250	0.000340	mg/L		04/25/19 11:09	04/30/19 18:07	5
Chromium	<0.00110		0.00250	0.00110	mg/L		04/25/19 11:09	04/30/19 18:07	5
Cobalt	<0.000400		0.00250	0.000400	mg/L		04/25/19 11:09	04/30/19 18:07	5
Molybdenum	<0.00198		0.0150	0.00198	mg/L		04/25/19 11:09	04/30/19 18:07	5
Lead	<0.000350		0.00125	0.000350	mg/L		04/25/19 11:09	04/30/19 18:07	5
Antimony	<0.00100		0.00250	0.00100	mg/L		04/25/19 11:09	04/30/19 18:07	5
Thallium	<0.0000850		0.000500	0.0000850	mg/L		04/25/19 11:09	04/30/19 18:07	5
Selenium	<0.000710		0.00125	0.000710	mg/L		04/25/19 11:09	04/30/19 18:07	5
Lithium	<0.00110		0.00500	0.00110	mg/L		04/25/19 11:09	04/30/19 18:07	5

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

Lab Sample ID: MB 400-438449/1-A ^5
Matrix: Water
Analysis Batch: 439157

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 438449

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.125		0.250	0.125	mg/L		04/25/19 11:09	04/30/19 18:07	5
Boron	<0.0210		0.0500	0.0210	mg/L		04/25/19 11:09	04/30/19 18:07	5

Lab Sample ID: LCS 400-438449/2-A
Matrix: Water
Analysis Batch: 439157

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 438449

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0500	0.05143		mg/L		103	80 - 120
Arsenic	0.0500	0.05238		mg/L		105	80 - 120
Beryllium	0.0500	0.05166		mg/L		103	80 - 120
Cadmium	0.0500	0.05224		mg/L		104	80 - 120
Chromium	0.0500	0.05213		mg/L		104	80 - 120
Cobalt	0.0500	0.05252		mg/L		105	80 - 120
Molybdenum	0.0500	0.05213		mg/L		104	80 - 120
Lead	0.0500	0.05122		mg/L		102	80 - 120
Antimony	0.0500	0.04820		mg/L		96	80 - 120
Thallium	0.0100	0.01072		mg/L		107	80 - 120
Selenium	0.0500	0.05084		mg/L		102	80 - 120
Lithium	0.0500	0.05434		mg/L		109	80 - 120
Calcium	5.00	5.229		mg/L		105	80 - 120
Boron	0.100	0.1001		mg/L		100	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-439210/14-A
Matrix: Water
Analysis Batch: 439576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 439210

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0000700		0.000200	0.0000700	mg/L		05/01/19 13:17	05/03/19 13:01	1

Lab Sample ID: LCS 400-439210/15-A
Matrix: Water
Analysis Batch: 439576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439210

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.0009930		mg/L		99	80 - 120

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

Lab Sample ID: MB 180-276658/2
Matrix: Water
Analysis Batch: 276658

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	<10.0		10.0	10.0	mg/L			04/24/19 12:32	1

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

Lab Sample ID: LCS 180-276658/1
Matrix: Water
Analysis Batch: 276658

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	201	212.0		mg/L		105	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-426052/23-A
Matrix: Water
Analysis Batch: 429273

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426052

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03084	U	0.0466	0.0467	1.00	0.0806	pCi/L	04/29/19 11:42	05/21/19 21:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*04/29/19 11:42*	*05/21/19 21:41*	*1*

Lab Sample ID: LCS 160-426052/1-A
Matrix: Water
Analysis Batch: 429225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426052

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.982		1.07	1.00	0.0952	pCi/L	88	75 - 125

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

Lab Sample ID: LCSD 160-426052/2-A
Matrix: Water
Analysis Batch: 429225

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426052

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	9.802		1.05	1.00	0.106	pCi/L	86	75 - 125	0.09	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*92.7*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-426058/23-A
Matrix: Water
Analysis Batch: 428152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426058

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08499	U	0.196	0.196	1.00	0.337	pCi/L	04/29/19 13:58	05/14/19 08:55	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-426058/23-A
Matrix: Water
Analysis Batch: 428152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426058

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	04/29/19 13:58	05/14/19 08:55	1
Y Carrier	91.6		40 - 110	04/29/19 13:58	05/14/19 08:55	1

Lab Sample ID: LCS 160-426058/1-A
Matrix: Water
Analysis Batch: 428139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426058

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.21	8.942		1.04	1.00	0.369	pCi/L	97	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.7		40 - 110
Y Carrier	89.0		40 - 110

Lab Sample ID: LCSD 160-426058/2-A
Matrix: Water
Analysis Batch: 428139

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426058

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			9.21	9.100		1.06	1.00	0.379	pCi/L	99	75 - 125	0.08	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	92.7		40 - 110
Y Carrier	90.1		40 - 110

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-89260-1
SDG: State

HPLC/IC

Analysis Batch: 277015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	EPA 300.0 R2.1	
180-89260-2	EB-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-277015/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-277015/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-89260-1 MS	BAW-8	Total/NA	Water	EPA 300.0 R2.1	
180-89260-1 MSD	BAW-8	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 438449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total Recoverable	Water	3005A	
180-89260-2	EB-01	Total Recoverable	Water	3005A	
MB 400-438449/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-438449/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 439157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total Recoverable	Water	6020	438449
180-89260-2	EB-01	Total Recoverable	Water	6020	438449
MB 400-438449/1-A ^5	Method Blank	Total Recoverable	Water	6020	438449
LCS 400-438449/2-A	Lab Control Sample	Total Recoverable	Water	6020	438449

Prep Batch: 439210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	7470A	
180-89260-2	EB-01	Total/NA	Water	7470A	
MB 400-439210/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-439210/15-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 439576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	7470A	439210
180-89260-2	EB-01	Total/NA	Water	7470A	439210
MB 400-439210/14-A	Method Blank	Total/NA	Water	7470A	439210
LCS 400-439210/15-A	Lab Control Sample	Total/NA	Water	7470A	439210

General Chemistry

Analysis Batch: 276658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	SM 2540C	
180-89260-2	EB-01	Total/NA	Water	SM 2540C	
MB 180-276658/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-276658/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 426052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	PrecSep-21	
180-89260-2	EB-01	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 426052 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-426052/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-426052/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-426052/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 426058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	PrecSep_0	
180-89260-2	EB-01	Total/NA	Water	PrecSep_0	
MB 160-426058/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-426058/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-426058/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Field Service / Mobile Lab

Analysis Batch: 277604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-89260-1	BAW-8	Total/NA	Water	Field Sampling	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-51001-10708.1
Client Contact: Lauren Parker Lauren Petty	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Souther Company				Job #:

Address:	Due Date Requested:
City:	TAT Requested (days):
State, Zip:	
Phone:	PO #: Purchase Order Requested
Email:	WO #: SCS10382606
Project Name: CCR - Plant Daniel Ash Pond B CCR	Project #: 18020047
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	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 - Ra 226 & 228	6020, 7470A	2540C_Calcd, 300_ORGFM_28D	Appendix 3	Appendix 4	Total Number of containers	Special
			Preservation Code:		X	X	D	D	N			X	
[redacted]	~~MW-8~~ PE			Water									
[redacted]	BAW-8	4/19/19	0815	G	Water					X	X		
[redacted]	EB-01	4/19/19	0710	G	Water					X	X		
[redacted]				Water									
[redacted]				Water									
[redacted]				Water									
.				Water									
..				Water									
...				Water									
....				Water									

180-89260 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

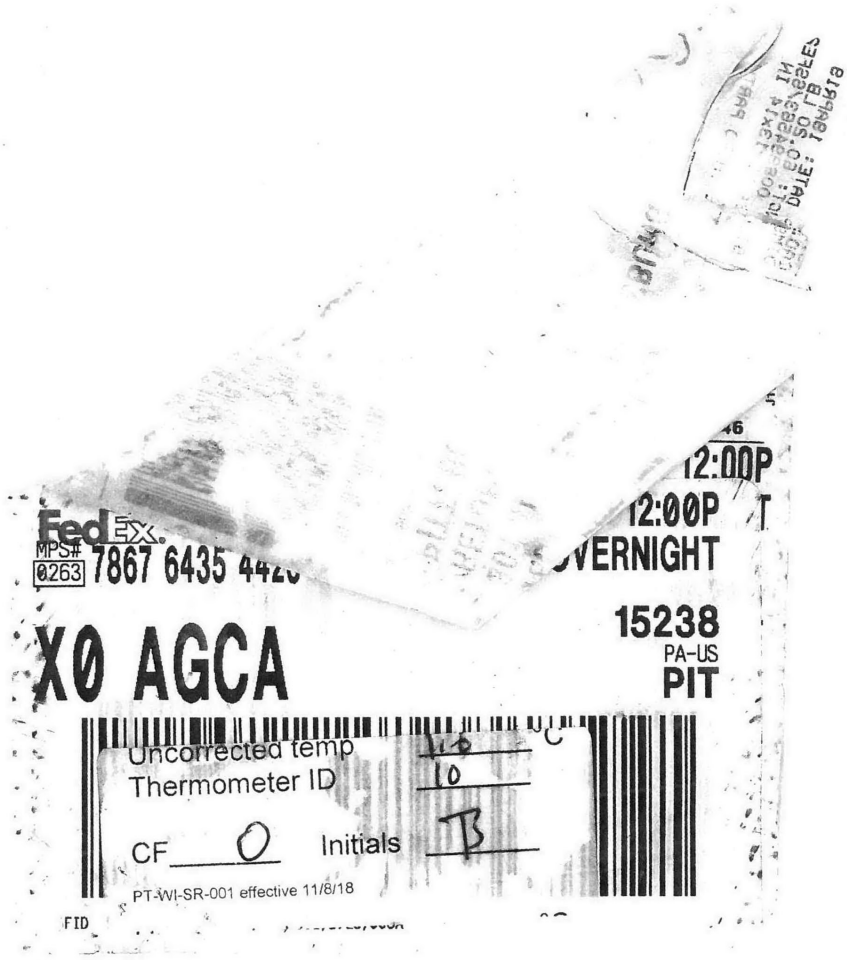
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/19/19 0725	RDH	[signature]	4-20-19 1350	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:

Ver: 01/16/2019

180-89260 Waybill



ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER
RDH
5720 DOVE DRIVE

MILTON, FL 32571
UNITED STATES US

SHIP DATE: 19APR19
ACTWGT: 54.30 LB
CAD: 006994563/SSFE2002
DIMS: 22x14x14 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
TEST AMERSICA PITTSBURG
301 ALPHA DRIVE
RETURNS
PITTSBURGH PA 15283

(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx Express

REL# 3705346

FedEx TRK# 0201 7867 6435 4415

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 AGCA

1250

15238
PA-US
PIT

Uncorrected temp 13 °C
Thermometer ID 10
CF 0 Initials B

PT-WI-SR-001 effective 11/8/18

FID 957419 20APR19

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-360840.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-89260-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/2/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320_Ra228/PrecSep_0 Standard Target List	9315_Ra226/PrecSep_21 (MOD) Copy Analytes	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
BAW-8 (180-89260-1)	4/19/19	08:15 Eastern		Water			X	X	X	1	
EB-01 (180-89260-2)	4/19/19	07:10 Eastern		Water			X	X	X	1	

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: 4/22/19 1700	Company DT PM	Received by:	Date/Time: 4-23-19 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:

Ver: 01/16/2019

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-360847.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-89260-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 5/2/2019			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020/3005A (MOD) Appendix IV including Hg	7470A/FILTRATION	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BAW-8 (180-89260-1)	4/19/19	08:15 Eastern		Water			X	X	1	
EB-01 (180-89260-2)	4/19/19	07:10 Eastern		Water			X	X	1	

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:	4/22/19 1700	TA	Kathy L Avery	4-23-19 850	TA
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: 1.9°C IR7

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-89260-1
SDG Number: State

Login Number: 89260
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-89260-1
SDG Number: State

Login Number: 89260
List Number: 2
Creator: Avery, Kathy R

List Source: Eurofins TestAmerica, Pensacola
List Creation: 04/23/19 04:54 PM

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	Not Present
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°C IR 8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	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: Southern Company

Job Number: 180-89260-1
SDG Number: State

Login Number: 89260
List Number: 3
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 04/26/19 09:03 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	18.0
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.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Product Name: Low-Flow System

Date: 2019-04-17 10:37:04

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	67 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	58.1 ft

Well Information:		Pumping Information:	
Well ID	BAW-1	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7790493 L
Well Total Depth	60.6 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	0.05 in
Depth to Water	23.10 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	10:18:05	300.03	26.71	4.86	35.64	0.80	23.15	4.68	142.96
Last 5	10:23:05	600.02	26.74	4.86	34.10	0.72	23.15	4.72	150.42
Last 5	10:28:05	900.02	26.86	4.89	33.56	0.70	23.15	4.66	153.75
Last 5	10:33:05	1200.02	26.88	4.90	33.32	0.65	23.15	4.67	159.02
Last 5									
Variance 0			0.03	-0.00	-1.54			0.04	7.45
Variance 1			0.12	0.03	-0.54			-0.06	3.33
Variance 2			0.02	0.02	-0.24			0.01	5.27

Notes

Sample time @ 1040. PC 74. DUP-01 @ 0940.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-17 11:56:38

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	75 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	64.9 ft

Well Information:		Pumping Information:	
Well ID	BAW-4	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8147567 L
Well Total Depth	69.9 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.06 in
Depth to Water	29.64 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	11:39:38	300.02	26.65	5.11	44.96	2.40	29.70	0.27	87.30
Last 5	11:44:38	600.02	26.30	5.12	44.76	1.68	29.70	0.14	75.00
Last 5	11:49:38	900.02	26.37	5.12	44.48	1.55	29.70	0.14	70.57
Last 5	11:54:38	1200.02	26.42	5.13	44.33	1.46	29.70	0.14	67.40
Last 5									
Variance 0			-0.35	0.01	-0.20			-0.13	-12.30
Variance 1			0.07	0.01	-0.27			-0.01	-4.42
Variance 2			0.05	0.01	-0.15			0.01	-3.18

Notes

Sample time @ 1200. Sunny 77.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-17 12:51:50

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	72 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	64.1 ft

Well Information:		Pumping Information:	
Well ID	BAW-5	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8013664 L
Well Total Depth	69.1 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.04 in
Depth to Water	33.13 ft	Total Volume Pumped	12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	12:29:57	600.02	26.33	6.06	112.44	0.68	33.17	0.17	-31.44
Last 5	12:34:57	900.02	26.33	6.10	112.88	0.89	33.17	0.15	-43.04
Last 5	12:39:57	1200.02	26.27	6.11	113.21	1.10	33.17	0.16	-50.10
Last 5	12:44:57	1500.02	26.37	6.12	113.40	1.26	33.17	0.15	-54.87
Last 5	12:49:59	1802.02	26.35	6.14	113.74	1.15	33.17	0.15	-58.60
Variance 0			-0.05	0.01	0.33			0.01	-7.06
Variance 1			0.10	0.01	0.19			-0.01	-4.78
Variance 2			-0.03	0.02	0.34			0.00	-3.72

Notes

Sample time @ 1255. PC 75.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-17 13:45:56

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.4 ft

Well Information:		Pumping Information:	
Well ID	BAW-3	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	68.4 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.03 in
Depth to Water	32.07 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	13:23:59	300.02	27.49	4.80	46.15	2.16	32.10	0.55	99.10
Last 5	13:28:59	600.02	27.45	4.76	45.42	2.02	32.10	0.36	118.04
Last 5	13:33:59	900.02	27.45	4.74	44.98	1.91	32.10	0.34	126.43
Last 5	13:38:59	1200.02	27.51	4.73	44.65	1.41	32.10	0.32	132.04
Last 5	13:43:59	1500.02	27.55	4.71	44.35	1.33	32.10	0.30	135.80
Variance 0			0.00	-0.02	-0.43			-0.02	8.39
Variance 1			0.06	-0.02	-0.33			-0.02	5.61
Variance 2			0.04	-0.02	-0.31			-0.01	3.75

Notes

Sample time @ 1350. Sunny 75.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-17 14:23:05

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	62.2 ft

Well Information:		Pumping Information:	
Well ID	BAW-2A	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	67.2 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.02 in
Depth to Water	32.45 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	14:10:45	300.03	27.52	4.80	44.56	1.75	32.47	2.55	143.49
Last 5	14:15:45	600.06	27.40	4.77	44.53	1.70	32.47	2.52	148.50
Last 5	14:20:45	900.03	27.34	4.79	44.29	1.63	32.47	2.50	150.30
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.13	-0.03	-0.03			-0.02	5.01
Variance 2			-0.05	0.02	-0.24			-0.02	1.80

Notes

Sample time @ 1425. Sunny 75.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-18 12:01:24

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	65 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	58.5 ft

Well Information:		Pumping Information:	
Well ID	BAW-7	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7701225 L
Well Total Depth	63.5 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.02 in
Depth to Water	26.50 ft	Total Volume Pumped	114 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	11:39:32	15918.03	26.62	4.89	27.72	6.36	26.52	3.98	153.20
Last 5	11:44:32	16218.03	26.70	4.90	27.72	6.40	26.52	3.97	152.49
Last 5	11:49:32	16518.03	26.69	4.90	27.69	6.38	26.52	3.97	152.10
Last 5	11:54:37	16823.03	26.60	4.90	27.75	6.20	26.52	3.96	151.91
Last 5	11:59:37	17123.03	26.62	4.90	27.70	6.25	26.52	3.96	151.34
Variance 0			-0.00	0.00	-0.03			-0.00	-0.40
Variance 1			-0.09	-0.01	0.06			-0.01	-0.19
Variance 2			0.01	0.00	-0.04			0.00	-0.57

Notes

Sample time @ 1205. PC 68.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-18 15:14:28

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	BP
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.7 ft

Well Information:		Pumping Information:	
Well ID	BAW-9	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.5324396 L
Well Total Depth	68.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.05 in
Depth to Water	32.20 ft	Total Volume Pumped	36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	14:51:51	4201.03	26.28	5.78	70.39	3.15	32.25	0.07	-50.09
Last 5	14:56:53	4503.03	26.27	5.79	70.36	2.08	32.25	0.07	-51.72
Last 5	15:01:53	4803.03	26.28	5.79	70.37	1.87	32.25	0.07	-52.86
Last 5	15:06:53	5103.03	26.26	5.78	70.40	1.75	32.25	0.07	-53.33
Last 5	15:11:54	5404.03	26.27	5.78	70.50	1.78	32.25	0.07	-53.93
Variance 0			0.01	0.00	0.01			-0.00	-1.13
Variance 1			-0.02	-0.01	0.03			-0.00	-0.48
Variance 2			0.01	-0.00	0.09			-0.00	-0.60

Notes

Sample time @ 1515. Cloudy 65. DUP-02 @ 1415. FB-01 @ 1510.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-19 08:14:27

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	BP
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Daniel BAW CCR	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.7 ft

Well Information:		Pumping Information:	
Well ID	BAW-8	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.5324396 L
Well Total Depth	68.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.06 in
Depth to Water	32.84 ft	Total Volume Pumped	20 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	07:52:10	1802.03	24.56	5.81	74.48	0.95	32.90	0.11	-16.77
Last 5	07:57:10	2102.03	24.70	5.82	75.12	0.84	32.90	0.10	-23.53
Last 5	08:02:10	2402.03	24.71	5.83	74.99	0.80	32.90	0.10	-29.38
Last 5	08:07:10	2702.03	24.73	5.84	75.34	0.82	32.90	0.10	-34.73
Last 5	08:12:10	3002.03	24.65	5.84	75.25	0.85	32.90	0.09	-38.57
Variance 0			0.01	0.01	-0.13			-0.01	-5.85
Variance 1			0.02	0.01	0.34			0.00	-5.35
Variance 2			-0.09	-0.00	-0.09			-0.01	-3.84

Notes

Sample time @ 0815. Cloudy 62. EB-01 @ 0710.

Grab Samples

2nd
Semi-Annual
Monitoring Event

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-96434-1
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Veronica Bortot

Authorized for release by:
10/20/2019 10:47:44 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Job ID: 180-96434-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-96434-1

Comments
No additional comments.

Receipt
The samples were received on 9/28/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There is no relinquished by time listed on the COC.

GC Semi VOA
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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

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.

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.

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-96434-1	BAW-1	Water	09/27/19 13:45	09/28/19 09:30	
180-96434-2	BAW-2A	Water	09/27/19 14:35	09/28/19 09:30	
180-96434-3	DUP-01	Water	09/27/19 12:45	09/28/19 09:30	
180-96434-4	BAW-7	Water	09/27/19 12:50	09/28/19 09:30	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

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.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Client Sample ID: BAW-1
Date Collected: 09/27/19 13:45
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-1
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	EPA 300.0 R2.1		1			294523	10/11/19 04:49	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	293495	10/02/19 11:29	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	294671	10/11/19 21:21	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293664	10/03/19 14:51	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-2A
Date Collected: 09/27/19 14:35
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-2
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	EPA 300.0 R2.1		1			294523	10/11/19 05:35	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	293495	10/02/19 11:29	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	294671	10/11/19 21:24	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293664	10/03/19 14:51	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-01
Date Collected: 09/27/19 12:45
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-3
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	EPA 300.0 R2.1		1			294523	10/11/19 05:50	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	293495	10/02/19 11:29	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	294671	10/11/19 21:27	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293664	10/03/19 14:51	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-7
Date Collected: 09/27/19 12:50
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-4
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	EPA 300.0 R2.1		1			294523	10/11/19 06:05	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	293495	10/02/19 11:29	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	294671	10/11/19 21:37	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KEM = Kimberly Mahoney

Batch Type: Analysis

AVS = Abbey Smith

MJH = Matthew Hartman

RSK = Robert Kurtz

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

Client Sample ID: BAW-1

Lab Sample ID: 180-96434-1

Date Collected: 09/27/19 13:45

Matrix: Water

Date Received: 09/28/19 09:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0263		0.100	0.0263	mg/L			10/11/19 04:49	1
Chloride	**5.08**		1.00	0.715	mg/L			10/11/19 04:49	1
Sulfate	**1.03**		1.00	0.380	mg/L			10/11/19 04:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/02/19 11:29	10/11/19 21:21	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/02/19 11:29	10/11/19 21:21	1
Barium	**0.0319**		0.00250	0.00160	mg/L		10/02/19 11:29	10/11/19 21:21	1
Calcium	**0.800**		0.250	0.127	mg/L		10/02/19 11:29	10/11/19 21:21	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/02/19 11:29	10/11/19 21:21	1
Cobalt	**0.000783**	**J**	0.00250	0.0000750	mg/L		10/02/19 11:29	10/11/19 21:21	1
Chromium	**0.00286**		0.00250	0.00153	mg/L		10/02/19 11:29	10/11/19 21:21	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/02/19 11:29	10/11/19 21:21	1
Lithium	**0.00346**	**J**	0.00500	0.00339	mg/L		10/02/19 11:29	10/11/19 21:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**26.0**		10.0	10.0	mg/L			10/03/19 14:51	1

Client Sample ID: BAW-2A

Lab Sample ID: 180-96434-2

Date Collected: 09/27/19 14:35

Matrix: Water

Date Received: 09/28/19 09:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.0313**	**J**	0.100	0.0263	mg/L			10/11/19 05:35	1
Chloride	**8.37**		1.00	0.715	mg/L			10/11/19 05:35	1
Sulfate	**2.19**		1.00	0.380	mg/L			10/11/19 05:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/02/19 11:29	10/11/19 21:24	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/02/19 11:29	10/11/19 21:24	1
Barium	**0.0373**		0.00250	0.00160	mg/L		10/02/19 11:29	10/11/19 21:24	1
Calcium	**0.663**		0.250	0.127	mg/L		10/02/19 11:29	10/11/19 21:24	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/02/19 11:29	10/11/19 21:24	1
Cobalt	**0.000885**	**J**	0.00250	0.0000750	mg/L		10/02/19 11:29	10/11/19 21:24	1
Chromium	**0.00284**		0.00250	0.00153	mg/L		10/02/19 11:29	10/11/19 21:24	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/02/19 11:29	10/11/19 21:24	1
Lithium	<0.00339		0.00500	0.00339	mg/L		10/02/19 11:29	10/11/19 21:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**25.0**		10.0	10.0	mg/L			10/03/19 14:51	1

Client Sample ID: DUP-01

Lab Sample ID: 180-96434-3

Date Collected: 09/27/19 12:45

Matrix: Water

Date Received: 09/28/19 09:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0263		0.100	0.0263	mg/L			10/11/19 05:50	1
Chloride	**5.03**		1.00	0.715	mg/L			10/11/19 05:50	1
Sulfate	**0.884**	**J**	1.00	0.380	mg/L			10/11/19 05:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/02/19 11:29	10/11/19 21:27	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/02/19 11:29	10/11/19 21:27	1
Barium	**0.0332**		0.00250	0.00160	mg/L		10/02/19 11:29	10/11/19 21:27	1
Calcium	**0.845**		0.250	0.127	mg/L		10/02/19 11:29	10/11/19 21:27	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/02/19 11:29	10/11/19 21:27	1
Cobalt	**0.000836**	**J**	0.00250	0.0000750	mg/L		10/02/19 11:29	10/11/19 21:27	1
Chromium	**0.00418**		0.00250	0.00153	mg/L		10/02/19 11:29	10/11/19 21:27	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/02/19 11:29	10/11/19 21:27	1
Lithium	<0.00339		0.00500	0.00339	mg/L		10/02/19 11:29	10/11/19 21:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**15.0**		10.0	10.0	mg/L			10/03/19 14:51	1

Client Sample ID: BAW-7

Lab Sample ID: 180-96434-4

Date Collected: 09/27/19 12:50

Matrix: Water

Date Received: 09/28/19 09:30

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0263		0.100	0.0263	mg/L			10/11/19 06:05	1
Chloride	**5.02**		1.00	0.715	mg/L			10/11/19 06:05	1
Sulfate	**1.22**		1.00	0.380	mg/L			10/11/19 06:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/02/19 11:29	10/11/19 21:37	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/02/19 11:29	10/11/19 21:37	1
Barium	**0.0121**		0.00250	0.00160	mg/L		10/02/19 11:29	10/11/19 21:37	1
Calcium	**0.598**		0.250	0.127	mg/L		10/02/19 11:29	10/11/19 21:37	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/02/19 11:29	10/11/19 21:37	1
Cobalt	**0.000710**	**J**	0.00250	0.0000750	mg/L		10/02/19 11:29	10/11/19 21:37	1
Chromium	**0.00206**	**J**	0.00250	0.00153	mg/L		10/02/19 11:29	10/11/19 21:37	1
Lead	**0.000129**	**J**	0.00100	0.000128	mg/L		10/02/19 11:29	10/11/19 21:37	1
Lithium	**0.00375**	**J**	0.00500	0.00339	mg/L		10/02/19 11:29	10/11/19 21:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-294523/6
Matrix: Water
Analysis Batch: 294523

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0263		0.100	0.0263	mg/L			10/11/19 04:05	1
Chloride	<0.715		1.00	0.715	mg/L			10/11/19 04:05	1
Sulfate	<0.380		1.00	0.380	mg/L			10/11/19 04:05	1

Lab Sample ID: LCS 180-294523/5
Matrix: Water
Analysis Batch: 294523

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.25	1.251		mg/L		100	90 - 110
Chloride	25.0	24.97		mg/L		100	90 - 110
Sulfate	25.0	24.67		mg/L		99	90 - 110

Lab Sample ID: 180-96434-1 MS
Matrix: Water
Analysis Batch: 294523

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.0263		1.25	1.287		mg/L		103	80 - 120
Chloride	5.08		25.0	31.19		mg/L		104	80 - 120
Sulfate	1.03		25.0	26.65		mg/L		102	80 - 120

Lab Sample ID: 180-96434-1 MSD
Matrix: Water
Analysis Batch: 294523

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.0263		1.25	1.291		mg/L		103	80 - 120	0	20
Chloride	5.08		25.0	30.92		mg/L		103	80 - 120	1	20
Sulfate	1.03		25.0	26.30		mg/L		101	80 - 120	1	20

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-293495/1-A
Matrix: Water
Analysis Batch: 294671

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 293495

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/02/19 11:29	10/11/19 20:17	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/02/19 11:29	10/11/19 20:17	1
Barium	<0.00160		0.00250	0.00160	mg/L		10/02/19 11:29	10/11/19 20:17	1
Calcium	<0.127		0.250	0.127	mg/L		10/02/19 11:29	10/11/19 20:17	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/02/19 11:29	10/11/19 20:17	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		10/02/19 11:29	10/11/19 20:17	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/02/19 11:29	10/11/19 20:17	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/02/19 11:29	10/11/19 20:17	1
Lithium	<0.00339		0.00500	0.00339	mg/L		10/02/19 11:29	10/11/19 20:17	1

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

Lab Sample ID: LCS 180-293495/2-A
Matrix: Water
Analysis Batch: 294671

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 293495

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.8044		mg/L		80	80 - 120
Boron	1.25	1.065		mg/L		85	80 - 120
Barium	1.00	0.8853		mg/L		89	80 - 120
Calcium	25.0	22.66		mg/L		91	80 - 120
Cadmium	0.500	0.4302		mg/L		86	80 - 120
Cobalt	0.500	0.4011		mg/L		80	80 - 120
Chromium	0.500	0.4172		mg/L		83	80 - 120
Lead	0.500	0.4339		mg/L		87	80 - 120
Lithium	0.500	0.4185		mg/L		84	80 - 120

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

Lab Sample ID: MB 180-293663/2
Matrix: Water
Analysis Batch: 293663

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	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Lab Sample ID: LCS 180-293663/1
Matrix: Water
Analysis Batch: 293663

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	633	644.0		mg/L		102	80 - 120

Lab Sample ID: MB 180-293664/2
Matrix: Water
Analysis Batch: 293664

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	<10.0		10.0	10.0	mg/L			10/03/19 14:51	1

Lab Sample ID: LCS 180-293664/1
Matrix: Water
Analysis Batch: 293664

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	633	642.0		mg/L		101	80 - 120

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-1

HPLC/IC

Analysis Batch: 294523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-1	BAW-1	Total/NA	Water	EPA 300.0 R2.1	
180-96434-2	BAW-2A	Total/NA	Water	EPA 300.0 R2.1	
180-96434-3	DUP-01	Total/NA	Water	EPA 300.0 R2.1	
180-96434-4	BAW-7	Total/NA	Water	EPA 300.0 R2.1	
MB 180-294523/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-294523/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-96434-1 MS	BAW-1	Total/NA	Water	EPA 300.0 R2.1	
180-96434-1 MSD	BAW-1	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 293495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-1	BAW-1	Total Recoverable	Water	3005A	
180-96434-2	BAW-2A	Total Recoverable	Water	3005A	
180-96434-3	DUP-01	Total Recoverable	Water	3005A	
180-96434-4	BAW-7	Total Recoverable	Water	3005A	
MB 180-293495/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-293495/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 294671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-1	BAW-1	Total Recoverable	Water	EPA 6020	293495
180-96434-2	BAW-2A	Total Recoverable	Water	EPA 6020	293495
180-96434-3	DUP-01	Total Recoverable	Water	EPA 6020	293495
180-96434-4	BAW-7	Total Recoverable	Water	EPA 6020	293495
MB 180-293495/1-A	Method Blank	Total Recoverable	Water	EPA 6020	293495
LCS 180-293495/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	293495

General Chemistry

Analysis Batch: 293663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-4	BAW-7	Total/NA	Water	SM 2540C	
MB 180-293663/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-293663/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 293664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-1	BAW-1	Total/NA	Water	SM 2540C	
180-96434-2	BAW-2A	Total/NA	Water	SM 2540C	
180-96434-3	DUP-01	Total/NA	Water	SM 2540C	
MB 180-293664/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-293664/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-54716-10708.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc				Job #:
Address: 5720 Dove Drive	Due Date Requested:			
City: Pace	TAT Requested (days):			
State, Zip: FL, 32571				
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested			
Email: rickhagendorfer@gmail.com	WO #:			
Project Name: CCR - Plant Daniel Ash Pond B CCR	Project #: 18020047			
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	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 - Ra 226 & 228	6020 - B,Ca,As, Ba, Cd, Cr, Co, Pb,Li	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special
			Preservation Code:				D	D	N		
[redacted] BAW-1	9/27/19	1345	G	Water			X	X	X		
BAW-2A	9/27/19	1435	G	Water			X	X	X		
[redacted] Dup-01	9/27/19	1245	G	Water			X	X	X		
[redacted]				Water							
[redacted]	[redacted]			Water							
BAW-7	9/27/19	1250	G	Water			X	X	X		
.				Water							
..				Water							
...				Water							
....				Water							

180-96434 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	9/27/19	RDH	Danielle Watts	9-28-19 9:30	FAI FT
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:

Ver: 01/16/2019


(850) 336-0192
SHIP DATE: 27SEP19
ACTWGT: 51.00 LB
CAD: 6994563/SSFE2021
DIMS: 13x10x14 IN
STATES US
THIRD PAR
AMPLE RECEIVING
TEST AMERICA PITTSBURGH
301 ALPHA DR
RETURNS
PITTSBURGH PA 15238
(412) 963-7058
REF:
INV:
PO:
DEPT:
FedEx
Express
REL#
3785346
SATURDAY 12:00P
TRK# 0201 7801 1075 4135
PRIORITY OVERNIGHT
XO AGCA
15238
PIT
PA-US
Uncorrected temp
Thermometer ID
°C
CF 0
Initials
PT-WI-SR-001 effective 11/8/18


180-96434 Waybill

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-96434-1

Login Number: 96434
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

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.	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	

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-96434-2
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Veronica Bortot

Authorized for release by:
10/31/2019 9:32:36 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-96434-2

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-96434-2

Comments
No additional comments.

Receipt
The samples were received on 9/28/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There is no relinquished by time listed on the COC.

RAD
Methods 903.0, 9315: Radium-226 prep batch 160-445567-

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-1 (180-96434-1), BAW-2A (180-96434-2), DUP-01 (180-96434-3), BAW-7 (180-96434-4), (LCS 160-445567/1-A), (LCSD 160-445567/2-A) and (MB 160-445567/20-A)

Methods 904.0, 9320: Radium-228 prep batch 160-445583-

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-1 (180-96434-1), BAW-2A (180-96434-2), DUP-01 (180-96434-3), BAW-7 (180-96434-4), (LCS 160-445583/1-A), (LCSD 160-445583/2-A) and (MB 160-445583/20-A)

Method PrecSep_0: Radium 228 Prep Batch 160-445583:

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-1 (180-96434-1), BAW-2A (180-96434-2), DUP-01 (180-96434-3) and BAW-7 (180-96434-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-445567:

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-1 (180-96434-1), BAW-2A (180-96434-2), DUP-01 (180-96434-3) and BAW-7 (180-96434-4). 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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Qualifiers

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-19
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-19
Iowa	State	373	09-17-20
Iowa	State Program	373	12-01-20
Kansas	NELAP	E-10236	10-31-19 *
Kentucky (DW)	State	KY90125	12-31-19
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-19
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20
Washington	State Program	C592	08-30-20
West Virginia DEP	State	381	10-31-19
West Virginia DEP	State Program	381	10-31-19 *

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-96434-1	BAW-1	Water	09/27/19 13:45	09/28/19 09:30	
180-96434-2	BAW-2A	Water	09/27/19 14:35	09/28/19 09:30	
180-96434-3	DUP-01	Water	09/27/19 12:45	09/28/19 09:30	
180-96434-4	BAW-7	Water	09/27/19 12:50	09/28/19 09:30	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Client Sample ID: BAW-1
Date Collected: 09/27/19 13:45
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.32 mL	1.0 g	445567	10/09/19 12:55	ORM	TAL SL
Total/NA	Analysis	9315		1			448412	10/31/19 05:39	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.32 mL	1.0 g	445583	10/09/19 13:31	ORM	TAL SL
Total/NA	Analysis	9320		1			447518	10/24/19 12:39	JCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448475	10/31/19 13:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-2A
Date Collected: 09/27/19 14:35
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.42 mL	1.0 g	445567	10/09/19 12:55	ORM	TAL SL
Total/NA	Analysis	9315		1			448412	10/31/19 05:39	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.42 mL	1.0 g	445583	10/09/19 13:31	ORM	TAL SL
Total/NA	Analysis	9320		1			447518	10/24/19 12:39	JCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448475	10/31/19 13:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-01
Date Collected: 09/27/19 12:45
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-3
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	PrecSep-21			1000.13 mL	1.0 g	445567	10/09/19 12:55	ORM	TAL SL
Total/NA	Analysis	9315		1			448412	10/31/19 05:39	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.13 mL	1.0 g	445583	10/09/19 13:31	ORM	TAL SL
Total/NA	Analysis	9320		1			447518	10/24/19 12:39	JCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448475	10/31/19 13:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-7
Date Collected: 09/27/19 12:50
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.46 mL	1.0 g	445567	10/09/19 12:55	ORM	TAL SL
Total/NA	Analysis	9315		1			448412	10/31/19 05:39	SCB	TAL SL
	Instrument ID: GFPCBLUE									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Client Sample ID: BAW-7
Date Collected: 09/27/19 12:50
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			1000.46 mL	1.0 g	445583	10/09/19 13:31	ORM	TAL SL
Total/NA	Analysis	9320		1	1.0 mL	1.0 mL	447518	10/24/19 12:39	JCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448475	10/31/19 13:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

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

Analyst References:

Lab: TAL SL

Batch Type: Prep

ORM = Octavia Moore

Batch Type: Analysis

JCB = Justin Banner

SCB = Sarah Bernsen

SMP = Siobhan Perry

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Client Sample ID: BAW-1

Date Collected: 09/27/19 13:45
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.305		0.119	0.122	1.00	0.128	pCi/L	10/09/19 12:55	10/31/19 05:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.4		40 - 110	10/09/19 12:55	10/31/19 05:39	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0546	U	0.251	0.251	1.00	0.438	pCi/L	10/09/19 13:31	10/24/19 12:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.4		40 - 110	10/09/19 13:31	10/24/19 12:39	1
Y Carrier	86.4		40 - 110	10/09/19 13:31	10/24/19 12:39	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	0.360	U	0.278	0.279	5.00	0.438	pCi/L		10/31/19 13:32	1

Client Sample ID: BAW-2A

Date Collected: 09/27/19 14:35
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.218		0.106	0.108	1.00	0.133	pCi/L	10/09/19 12:55	10/31/19 05:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110	10/09/19 12:55	10/31/19 05:39	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.204	U	0.277	0.277	1.00	0.461	pCi/L	10/09/19 13:31	10/24/19 12:39	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110	10/09/19 13:31	10/24/19 12:39	1
Y Carrier	76.6		40 - 110	10/09/19 13:31	10/24/19 12:39	1

Client Sample ID: BAW-2A
Date Collected: 09/27/19 14:35
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-2
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	0.422	U	0.297	0.297	5.00	0.461	pCi/L		10/31/19 13:32	1

Client Sample ID: DUP-01
Date Collected: 09/27/19 12:45
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-3
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.320**		0.118	0.121	1.00	0.116	pCi/L	10/09/19 12:55	10/31/19 05:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*40 - 110*	*10/09/19 12:55*	*10/31/19 05:39*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.478	U	0.349	0.352	1.00	0.548	pCi/L	10/09/19 13:31	10/24/19 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*40 - 110*	*10/09/19 13:31*	*10/24/19 12:39*	*1*
Y Carrier	*68.8*		*40 - 110*	*10/09/19 13:31*	*10/24/19 12:39*	*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	**0.798**		0.368	0.372	5.00	0.548	pCi/L		10/31/19 13:32	1

Client Sample ID: BAW-7
Date Collected: 09/27/19 12:50
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-4
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.294**		0.120	0.122	1.00	0.141	pCi/L	10/09/19 12:55	10/31/19 05:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.4*		*40 - 110*	*10/09/19 12:55*	*10/31/19 05:39*	*1*

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Client Sample ID: BAW-7

Date Collected: 09/27/19 12:50
Date Received: 09/28/19 09:30

Lab Sample ID: 180-96434-4

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.203	U	0.263	0.264	1.00	0.437	pCi/L	10/09/19 13:31	10/24/19 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.4*		*40 - 110*	*10/09/19 13:31*	*10/24/19 12:39*	*1*
Y Carrier	*74.8*		*40 - 110*	*10/09/19 13:31*	*10/24/19 12:39*	*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	**0.497**		0.289	0.291	5.00	0.437	pCi/L		10/31/19 13:32	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-445567/20-A
Matrix: Water
Analysis Batch: 448412

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445567

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2099		0.117	0.119	1.00	0.160	pCi/L	10/09/19 12:55	10/31/19 08:08	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*40 - 110*	*10/09/19 12:55*	*10/31/19 08:08*	*1*

Lab Sample ID: LCS 160-445567/1-A
Matrix: Water
Analysis Batch: 448412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445567

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	9.922		1.09	1.00	0.168	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*71.5*		*40 - 110*

Lab Sample ID: LCSD 160-445567/2-A
Matrix: Water
Analysis Batch: 448412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 445567

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	9.379		1.03	1.00	0.171	pCi/L	83	75 - 125	0.26	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*81.4*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-445583/20-A
Matrix: Water
Analysis Batch: 447584

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445583

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.02149	U	0.261	0.261	1.00	0.468	pCi/L	10/09/19 13:31	10/24/19 12:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*40 - 110*	*10/09/19 13:31*	*10/24/19 12:36*	*1*
Y Carrier	*83.7*		*40 - 110*	*10/09/19 13:31*	*10/24/19 12:36*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-445583/1-A
Matrix: Water
Analysis Batch: 447518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445583

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.46	10.73		1.47	1.00	0.873	pCi/L	113	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*71.5*		*40 - 110*
Y Carrier	*54.2*		*40 - 110*

Lab Sample ID: LCSD 160-445583/2-A
Matrix: Water
Analysis Batch: 447518

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 445583

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			9.46	10.09		1.23	1.00	0.532	pCi/L	107	75 - 125	0.24	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*81.4*		*40 - 110*
Y Carrier	*77.0*		*40 - 110*

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96434-2

Rad

Prep Batch: 445567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-1	BAW-1	Total/NA	Water	PrecSep-21	
180-96434-2	BAW-2A	Total/NA	Water	PrecSep-21	
180-96434-3	DUP-01	Total/NA	Water	PrecSep-21	
180-96434-4	BAW-7	Total/NA	Water	PrecSep-21	
MB 160-445567/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-445567/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-445567/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 445583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96434-1	BAW-1	Total/NA	Water	PrecSep_0	
180-96434-2	BAW-2A	Total/NA	Water	PrecSep_0	
180-96434-3	DUP-01	Total/NA	Water	PrecSep_0	
180-96434-4	BAW-7	Total/NA	Water	PrecSep_0	
MB 160-445583/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-445583/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-445583/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

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Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-54716-10708.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc				Job #:
Address: 5720 Dove Drive	Due Date Requested:			
City: Pace	TAT Requested (days):			
State, Zip: FL, 32571				
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested			
Email: rickhagendorfer@gmail.com	WO #:			
Project Name: CCR - Plant Daniel Ash Pond B CCR	Project #: 18020047			
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	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 - Ra 226 & 228	6020 - B,Ca,As, Ba, Cd, Cr, Co, Pb,Li	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special
			Preservation Code:				D	D	N		
[redacted] BAW-1	9/27/19	1345	G	Water			X	X	X		
BAW-2A	9/27/19	1435	G	Water			X	X	X		
[redacted] Dup-01	9/27/19	1245	G	Water			X	X	X		
[redacted]				Water							
[redacted]	[redacted]			Water							
BAW-7	9/27/19	1250	G	Water			X	X	X		
.				Water							
..				Water							
...				Water							
....				Water							

180-96434 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	9/27/19	RDH	Danielle Watts	9-28-19 9:30	TAL PIT
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:

Ver: 01/16/2019


(850) 336-0192
SHIP DATE: 27SEP19
ACTWGT: 51.00 LB
CAD: 6994563/SSFE2021
DIMS: 13x10x14 IN
STATES US
THIRD PAR
AMPLE RECEIVING
TEST AMERICA PITTSBURGH
301 ALPHA DR
RETURNS
PITTSBURGH PA 15238
(412) 963-7058
REF:
INV:
PO:
DEPT:
FedEx
Express
REL#
3785346
SATURDAY 12:00P
TRK# 0201 7801 1075 4135
PRIORITY OVERNIGHT
XO AGCA
15238
PA-US
PIT
Uncorrected temp
Thermometer ID
°C
CF 0
Initials
PT-WI-SR-001 effective 11/8/18


180-96434 Waybill

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-375493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-96434-2
Address: 13715 Rider Trail North,	Due Date Requested: 11/1/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Ra226Ra228_GFPC	9320_Ra228/PrecSep_0 Standard Target List	9315_Ra226/PrecSep_21 (MOD) Copy Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
BAW-1 (180-96434-1)	9/27/19	13:45 Eastern		Water			X	X	X	1	
BAW-2A (180-96434-2)	9/27/19	14:35 Eastern		Water			X	X	X	1	
DUP-01 (180-96434-3)	9/27/19	12:45 Eastern		Water			X	X	X	1	
BAW-7 (180-96434-4)	9/27/19	12:50 Eastern		Water			X	X	X	1	

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: 10/7/19 1700	Company: DOT	Received by:	Date/Time: 10/8/17 09:15	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:		

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-96434-2

Login Number: 96434
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

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.	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: Southern Company

Job Number: 180-96434-2

Login Number: 96434
List Number: 2
Creator: Harris, Lorin C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/08/19 01:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	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?	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.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-96506-1
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Authorized for release by:
10/29/2019 12:56:48 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Job ID: 180-96506-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-96506-1

Comments
No additional comments.

Receipt
The samples were received on 10/1/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.6º C.

GC Semi VOA
Method 300.0: The continuing calibration verification (CCV) associated with batch 180-294670 recovered above the upper control limit for Fluoride. The samples associated with this CCV were non-detect or an estimated value (J) for the affected analyte; therefore, the data have been reported.

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

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

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

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

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.

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.

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-96506-1	BAW-3	Water	09/30/19 10:15	10/01/19 09:00	
180-96506-2	BAW-4	Water	09/30/19 09:15	10/01/19 09:00	
180-96506-3	BAW-5	Water	09/30/19 08:30	10/01/19 09:00	
180-96506-4	BAW-8	Water	09/30/19 11:50	10/01/19 09:00	
180-96506-5	BAW-9	Water	09/30/19 13:00	10/01/19 09:00	
180-96506-6	DUP-02	Water	09/30/19 08:15	10/01/19 09:00	
180-96506-7	FB-01	Water	09/30/19 11:55	10/01/19 09:00	
180-96506-8	EB-01	Water	09/30/19 12:15	10/01/19 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

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.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Client Sample ID: BAW-3
Date Collected: 09/30/19 10:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-1
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	EPA 300.0 R2.1		1			294670	10/12/19 08:58	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 01:44	WTR	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-4
Date Collected: 09/30/19 09:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-2
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	EPA 300.0 R2.1		1			294670	10/12/19 09:13	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 01:58	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:03	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-5
Date Collected: 09/30/19 08:30
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-3
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	EPA 300.0 R2.1		1			294670	10/12/19 11:12	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 02:00	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:06	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Client Sample ID: BAW-8
Date Collected: 09/30/19 11:50
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-4
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	EPA 300.0 R2.1		1			294670	10/12/19 11:26	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 02:02	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:08	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-9
Date Collected: 09/30/19 13:00
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-5
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	EPA 300.0 R2.1		1			294670	10/12/19 11:41	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 02:05	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:10	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-02
Date Collected: 09/30/19 08:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-6
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	EPA 300.0 R2.1		1			294670	10/12/19 14:15	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 02:07	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:13	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Client Sample ID: FB-01

Date Collected: 09/30/19 11:55
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-7

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	EPA 300.0 R2.1		1			294670	10/12/19 10:42	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 02:09	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:15	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: EB-01

Date Collected: 09/30/19 12:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-8

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	EPA 300.0 R2.1		1			294670	10/12/19 10:57	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	295646	10/22/19 02:11	WTR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	293610	10/03/19 09:49	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295821	10/22/19 15:17	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	293663	10/03/19 14:48	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KEM = Kimberly Mahoney

Batch Type: Analysis

AVS = Abbey Smith
MJH = Matthew Hartman
RSK = Robert Kurtz
WTR = Bill Reinheimer

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Client Sample ID: BAW-3

Date Collected: 09/30/19 10:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-1
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.07		1.00	0.715	mg/L			10/12/19 08:58	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 08:58	1
Sulfate	1.64		1.00	0.380	mg/L			10/12/19 08:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 01:44	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 01:44	1
Barium	0.0343		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 01:44	1
Calcium	0.826		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 01:44	1
Cadmium	0.00112	J	0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 01:44	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 01:44	1
Lead	0.000322	J	0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 01:44	1
Lithium	0.00687		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 01:44	1
Cobalt	0.00620		0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 01:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Client Sample ID: BAW-4

Date Collected: 09/30/19 09:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-2
Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.45		1.00	0.715	mg/L			10/12/19 09:13	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 09:13	1
Sulfate	2.34		1.00	0.380	mg/L			10/12/19 09:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000821	J	0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 01:58	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 01:58	1
Barium	0.0103		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 01:58	1
Calcium	3.08		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 01:58	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 01:58	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 01:58	1
Lead	0.000191	J	0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 01:58	1
Lithium	0.0249		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:03	1
Cobalt	0.00100	J	0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 01:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Client Sample ID: BAW-5

Lab Sample ID: 180-96506-3

Date Collected: 09/30/19 08:30

Matrix: Water

Date Received: 10/01/19 09:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.59**		1.00	0.715	mg/L			10/12/19 11:12	1
Fluoride	**0.0450**	**J**	0.100	0.0263	mg/L			10/12/19 11:12	1
Sulfate	**2.82**		1.00	0.380	mg/L			10/12/19 11:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00272**		0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 02:00	1
Boron	**0.140**		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 02:00	1
Barium	**0.0424**		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 02:00	1
Calcium	**13.6**		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 02:00	1
Cadmium	**0.000155**	**J**	0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 02:00	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 02:00	1
Lead	**0.000152**	**J**	0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 02:00	1
Lithium	**0.166**		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:06	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 02:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**55.0**		10.0	10.0	mg/L			10/03/19 14:48	1

Client Sample ID: BAW-8

Lab Sample ID: 180-96506-4

Date Collected: 09/30/19 11:50

Matrix: Water

Date Received: 10/01/19 09:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.78**		1.00	0.715	mg/L			10/12/19 11:26	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 11:26	1
Sulfate	**2.49**		1.00	0.380	mg/L			10/12/19 11:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 02:02	1
Boron	**0.120**		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 02:02	1
Barium	**0.0293**		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 02:02	1
Calcium	**10.7**		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 02:02	1
Cadmium	**0.000136**	**J**	0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 02:02	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 02:02	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 02:02	1
Lithium	**0.131**		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:08	1
Cobalt	**0.0000890**	**J**	0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 02:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**19.0**		10.0	10.0	mg/L			10/03/19 14:48	1

Client Sample ID: BAW-9

Lab Sample ID: 180-96506-5

Date Collected: 09/30/19 13:00

Matrix: Water

Date Received: 10/01/19 09:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.52**		1.00	0.715	mg/L			10/12/19 11:41	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 11:41	1
Sulfate	**2.96**		1.00	0.380	mg/L			10/12/19 11:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.000551**	**J**	0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 02:05	1
Boron	**0.174**		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 02:05	1
Barium	**0.0228**		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 02:05	1
Calcium	**9.07**		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 02:05	1
Cadmium	**0.000126**	**J**	0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 02:05	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 02:05	1
Lead	**0.000130**	**J**	0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 02:05	1
Lithium	**0.123**		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:10	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 02:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**28.0**		10.0	10.0	mg/L			10/03/19 14:48	1

Client Sample ID: DUP-02

Lab Sample ID: 180-96506-6

Date Collected: 09/30/19 08:15

Matrix: Water

Date Received: 10/01/19 09:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.49**		1.00	0.715	mg/L			10/12/19 14:15	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 14:15	1
Sulfate	**2.78**		1.00	0.380	mg/L			10/12/19 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.000652**	**J**	0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 02:07	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 02:07	1
Barium	**0.0106**		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 02:07	1
Calcium	**3.17**		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 02:07	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 02:07	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 02:07	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 02:07	1
Lithium	**0.0261**		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:13	1
Cobalt	**0.000979**	**J**	0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 02:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

Client Sample ID: FB-01

Lab Sample ID: 180-96506-7

Date Collected: 09/30/19 11:55

Matrix: Water

Date Received: 10/01/19 09:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			10/12/19 10:42	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 10:42	1
Sulfate	<0.380		1.00	0.380	mg/L			10/12/19 10:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 02:09	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 02:09	1
Barium	<0.00160		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 02:09	1
Calcium	<0.127		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 02:09	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 02:09	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 02:09	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 02:09	1
Lithium	**0.00378**	**J**	0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:15	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 02:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Client Sample ID: EB-01

Lab Sample ID: 180-96506-8

Date Collected: 09/30/19 12:15

Matrix: Water

Date Received: 10/01/19 09:00

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			10/12/19 10:57	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 10:57	1
Sulfate	**0.517**	**J**	1.00	0.380	mg/L			10/12/19 10:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 02:11	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 02:11	1
Barium	<0.00160		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 02:11	1
Calcium	<0.127		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 02:11	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 02:11	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 02:11	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 02:11	1
Lithium	<0.00339		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 15:17	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 02:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-294670/6
Matrix: Water
Analysis Batch: 294670

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			10/12/19 07:44	1
Fluoride	<0.0263		0.100	0.0263	mg/L			10/12/19 07:44	1
Sulfate	<0.380		1.00	0.380	mg/L			10/12/19 07:44	1

Lab Sample ID: LCS 180-294670/5
Matrix: Water
Analysis Batch: 294670

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.84		mg/L		103	90 - 110
Fluoride	1.25	1.217		mg/L		97	90 - 110
Sulfate	25.0	23.67		mg/L		95	90 - 110

Lab Sample ID: 180-96506-2 MS
Matrix: Water
Analysis Batch: 294670

Client Sample ID: BAW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.45		25.0	31.43		mg/L		104	80 - 120
Fluoride	<0.0263		1.25	1.249		mg/L		100	80 - 120
Sulfate	2.34		25.0	25.73		mg/L		94	80 - 120

Lab Sample ID: 180-96506-2 MSD
Matrix: Water
Analysis Batch: 294670

Client Sample ID: BAW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.45		25.0	30.40		mg/L		100	80 - 120	3	20
Fluoride	<0.0263		1.25	1.218		mg/L		97	80 - 120	3	20
Sulfate	2.34		25.0	24.64		mg/L		89	80 - 120	4	20

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-293610/1-A
Matrix: Water
Analysis Batch: 295646

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 293610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000323		0.00125	0.000323	mg/L		10/03/19 09:49	10/22/19 01:30	1
Boron	<0.0386		0.0500	0.0386	mg/L		10/03/19 09:49	10/22/19 01:30	1
Barium	<0.00160		0.00250	0.00160	mg/L		10/03/19 09:49	10/22/19 01:30	1
Calcium	<0.127		0.250	0.127	mg/L		10/03/19 09:49	10/22/19 01:30	1
Cadmium	<0.000125		0.00250	0.000125	mg/L		10/03/19 09:49	10/22/19 01:30	1
Chromium	<0.00153		0.00250	0.00153	mg/L		10/03/19 09:49	10/22/19 01:30	1
Lead	<0.000128		0.00100	0.000128	mg/L		10/03/19 09:49	10/22/19 01:30	1
Lithium	<0.00339		0.00500	0.00339	mg/L		10/03/19 09:49	10/22/19 01:30	1
Cobalt	<0.0000750		0.00250	0.0000750	mg/L		10/03/19 09:49	10/22/19 01:30	1

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

Lab Sample ID: LCS 180-293610/2-A
Matrix: Water
Analysis Batch: 295646

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 293610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.8659		mg/L		87	80 - 120
Boron	1.25	1.235		mg/L		99	80 - 120
Barium	1.00	1.083		mg/L		108	80 - 120
Calcium	25.0	26.08		mg/L		104	80 - 120
Cadmium	0.500	0.5520		mg/L		110	80 - 120
Chromium	0.500	0.5537		mg/L		111	80 - 120
Lead	0.500	0.5115		mg/L		102	80 - 120
Lithium	0.500	0.4702		mg/L		94	80 - 120
Cobalt	0.500	0.4424		mg/L		88	80 - 120

Lab Sample ID: 180-96506-C-1-B MS
Matrix: Water
Analysis Batch: 295646

Client Sample ID: 180-96506-C-1-B MS
Prep Type: Total Recoverable
Prep Batch: 293610

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	<0.000323		1.00	0.8905		mg/L		89	75 - 125
Boron	<0.0386		1.25	1.225		mg/L		98	75 - 125
Barium	0.0343		1.00	1.147		mg/L		111	75 - 125
Calcium	0.826		25.0	27.25		mg/L		106	75 - 125
Cadmium	0.00112	J	0.500	0.5644		mg/L		113	75 - 125
Chromium	<0.00153		0.500	0.5542		mg/L		111	75 - 125
Lead	0.000322	J	0.500	0.5342		mg/L		107	75 - 125
Lithium	0.00687		0.500	0.4919		mg/L		97	75 - 125
Cobalt	0.00620		0.500	0.4566		mg/L		90	75 - 125

Lab Sample ID: 180-96506-C-1-C MSD
Matrix: Water
Analysis Batch: 295646

Client Sample ID: 180-96506-C-1-C MSD
Prep Type: Total Recoverable
Prep Batch: 293610

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	<0.000323		1.00	0.8965		mg/L		90	75 - 125	1	20
Boron	<0.0386		1.25	1.262		mg/L		101	75 - 125	3	20
Barium	0.0343		1.00	1.130		mg/L		110	75 - 125	1	20
Calcium	0.826		25.0	26.39		mg/L		102	75 - 125	3	20
Cadmium	0.00112	J	0.500	0.5623		mg/L		112	75 - 125	0	20
Chromium	<0.00153		0.500	0.5653		mg/L		113	75 - 125	2	20
Lead	0.000322	J	0.500	0.5199		mg/L		104	75 - 125	3	20
Lithium	0.00687		0.500	0.5095		mg/L		101	75 - 125	4	20
Cobalt	0.00620		0.500	0.4584		mg/L		90	75 - 125	0	20

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

Lab Sample ID: MB 180-293663/2
Matrix: Water
Analysis Batch: 293663

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	<10.0		10.0	10.0	mg/L			10/03/19 14:48	1

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

Lab Sample ID: LCS 180-293663/1
Matrix: Water
Analysis Batch: 293663

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	633	644.0		mg/L		102	80 - 120

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-1

HPLC/IC

Analysis Batch: 294670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-1	BAW-3	Total/NA	Water	EPA 300.0 R2.1	
180-96506-2	BAW-4	Total/NA	Water	EPA 300.0 R2.1	
180-96506-3	BAW-5	Total/NA	Water	EPA 300.0 R2.1	
180-96506-4	BAW-8	Total/NA	Water	EPA 300.0 R2.1	
180-96506-5	BAW-9	Total/NA	Water	EPA 300.0 R2.1	
180-96506-6	DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-96506-7	FB-01	Total/NA	Water	EPA 300.0 R2.1	
180-96506-8	EB-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-294670/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-294670/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-96506-2 MS	BAW-4	Total/NA	Water	EPA 300.0 R2.1	
180-96506-2 MSD	BAW-4	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 293610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-1	BAW-3	Total Recoverable	Water	3005A	
180-96506-2	BAW-4	Total Recoverable	Water	3005A	
180-96506-3	BAW-5	Total Recoverable	Water	3005A	
180-96506-4	BAW-8	Total Recoverable	Water	3005A	
180-96506-5	BAW-9	Total Recoverable	Water	3005A	
180-96506-6	DUP-02	Total Recoverable	Water	3005A	
180-96506-7	FB-01	Total Recoverable	Water	3005A	
180-96506-8	EB-01	Total Recoverable	Water	3005A	
MB 180-293610/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-293610/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-96506-C-1-B MS	180-96506-C-1-B MS	Total Recoverable	Water	3005A	
180-96506-C-1-C MSD	180-96506-C-1-C MSD	Total Recoverable	Water	3005A	

Analysis Batch: 295646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-1	BAW-3	Total Recoverable	Water	EPA 6020	293610
180-96506-2	BAW-4	Total Recoverable	Water	EPA 6020	293610
180-96506-3	BAW-5	Total Recoverable	Water	EPA 6020	293610
180-96506-4	BAW-8	Total Recoverable	Water	EPA 6020	293610
180-96506-5	BAW-9	Total Recoverable	Water	EPA 6020	293610
180-96506-6	DUP-02	Total Recoverable	Water	EPA 6020	293610
180-96506-7	FB-01	Total Recoverable	Water	EPA 6020	293610
180-96506-8	EB-01	Total Recoverable	Water	EPA 6020	293610
MB 180-293610/1-A	Method Blank	Total Recoverable	Water	EPA 6020	293610
LCS 180-293610/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	293610
180-96506-C-1-B MS	180-96506-C-1-B MS	Total Recoverable	Water	EPA 6020	293610
180-96506-C-1-C MSD	180-96506-C-1-C MSD	Total Recoverable	Water	EPA 6020	293610

Analysis Batch: 295821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-2	BAW-4	Total Recoverable	Water	EPA 6020	293610
180-96506-3	BAW-5	Total Recoverable	Water	EPA 6020	293610
180-96506-4	BAW-8	Total Recoverable	Water	EPA 6020	293610
180-96506-5	BAW-9	Total Recoverable	Water	EPA 6020	293610

Metals (Continued)

Analysis Batch: 295821 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-6	DUP-02	Total Recoverable	Water	EPA 6020	293610
180-96506-7	FB-01	Total Recoverable	Water	EPA 6020	293610
180-96506-8	EB-01	Total Recoverable	Water	EPA 6020	293610

General Chemistry

Analysis Batch: 293663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-1	BAW-3	Total/NA	Water	SM 2540C	
180-96506-2	BAW-4	Total/NA	Water	SM 2540C	
180-96506-3	BAW-5	Total/NA	Water	SM 2540C	
180-96506-4	BAW-8	Total/NA	Water	SM 2540C	
180-96506-5	BAW-9	Total/NA	Water	SM 2540C	
180-96506-6	DUP-02	Total/NA	Water	SM 2540C	
180-96506-7	FB-01	Total/NA	Water	SM 2540C	
180-96506-8	EB-01	Total/NA	Water	SM 2540C	
MB 180-293663/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-293663/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

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Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-54716-10708.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc				Job #:

Address: 5720 Dove Drive	Due Date Requested:	Analysis Requested
City: Pace	TAT Requested (days):	
State, Zip: FL, 32571		
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested	
Email: rickhagendorfer@gmail.com	WO #:	
Project Name: CCR - Plant Daniel Ash Pond B CCR	Project #: 18020047	
Site:	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:

Sample Identification	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 - Ra 226 & 228	6020 - B,Ca,As, Ba, Cd, Cr, Co, Pb,Li	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N		
[redacted] BAW-3	9/30/19	1015	G	Water			X	X	X		
[redacted] BAW-4		0915		Water							
[redacted] BAW-5		0830		Water							
[redacted] BAW-8		1150		Water							
[redacted] BAW-9		1300		Water							
[redacted] Dup-02		0815		Water							
FB-01		1155		Water							
EB-01	9/30/19	1215	G	Water			X	X	X		
				Water							
				Water							

180-96506 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	9/30/19 1640	RDH		10-1-19	TAPitt
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:00	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:

Ver: 01/16/2019

ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER
5720 DOVE DR
MILTON, FL 32571
UNITED STATES US

SHIP DATE: 30SEP19
ACTWGT: 59.50 LB
CAD: 6994562/SSFE2021
DIMS: 25x13x14 IN
BILL THIRD PARTY

TO
TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx Express

1 of 2
TRK# 0201 7763 8621 5473
MASTER
XH AGCA

TUE - 01 OCT 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US PIT

Uncorrected temp 2.6 °C
Thermometer ID 10
CF 0 Initials JB
PT-WI-SR-001 effective 11/8/18

Part # 156297-126 RRD EXP 08/20
2950/0562/3E725

180-96506 Waybill

ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER

5720 DOVE DR

MILTON, FL 32571
UNITED STATES US

SHIP DATE: 30SEP19
ACTWGT: 42.40 LB
CAD: 6994562/SSFE2021
DIMS: 17x12x15 IN

BILL THIRD PARTY

TO

TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238

(412) 963-7058 REF:
INV:
PO: DEPT:

Part # 156297-435 RRDB EXP 08/20
567J3/2A3C/05A2

FedEx
Express

E

J192119091901uv

2 of 2

MPS# 0263 **7763 8621 5484**

Mstr# 7763 8621 5473

0201

XH AGCA

TUE - 01 OCT 10:30A
PRIORITY OVERNIGHT

AHS
15238
PA-US **PIT**

Uncorrected temp 1.8 °C
Thermometer ID 10

CF 0 Initials [illegible]

PT-WI-SR-001 effective 11/8/18

ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER
5720 DOVE DR

MILTON, FL 32571
UNITED STATES US

SHIP DATE: 30SEP19
ACTWGT: 59.50 LB
CAD: 6994562/SSFE2021
DIMS: 25x13x14 IN

BILL THIRD PARTY

TO

TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-7068.

INV:
PO:
REF:
DEPT:

Part # 156297-225 RRDR EXP 08/20

FedEx Express

1 of 2

TRK# 0201 **7763 8621 5473**

MASTER

XH AGCA

TUE - 01 OCT 10:30A
PRIORITY OVERNIGHT

AHS
15238
PA-US **PIT**

Uncorrected temp 2.6 °C
Thermometer ID 10
CF 0 Initials B
PT-WI-SR-001 effective 11/8/18

180-96506 Waybill

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-96506-1

Login Number: 96506
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

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

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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-96506-2
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Authorized for release by:
10/31/2019 10:06:17 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-96506-2

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-96506-2

Comments
No additional comments.

Receipt
The samples were received on 10/1/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.6º C.

RAD
Method 9315: Radium-226 Prep Batch 160-445211
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-3 (180-96506-1), BAW-4 (180-96506-2), BAW-5 (180-96506-3), BAW-8 (180-96506-4), BAW-9 (180-96506-5), DUP-02 (180-96506-6), FB-01 (180-96506-7), EB-01 (180-96506-8), (LCS 160-445211/1-A), (LCSD 160-445211/2-A) and (MB 160-445211/11-A)

Method 9320: Radium-228 Prep Batch 160-445212
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BAW-3 (180-96506-1), BAW-4 (180-96506-2), BAW-5 (180-96506-3), BAW-8 (180-96506-4), BAW-9 (180-96506-5), DUP-02 (180-96506-6), FB-01 (180-96506-7), EB-01 (180-96506-8), (LCS 160-445212/1-A), (LCSD 160-445212/2-A) and (MB 160-445212/11-A)

Method PrecSep_0: Radium 228 Prep Batch 160-445212:

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-3 (180-96506-1), BAW-4 (180-96506-2), BAW-5 (180-96506-3), BAW-8 (180-96506-4), BAW-9 (180-96506-5), DUP-02 (180-96506-6), FB-01 (180-96506-7) and EB-01 (180-96506-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-445212:

The following sample had white cloudy discoloration:BAW-5 (180-96506-3).

Method PrecSep-21: Radium 226 Prep Batch 160-445211:

Insufficient sample volume was available to perform a sample duplicate for the following samples: BAW-3 (180-96506-1), BAW-4 (180-96506-2), BAW-5 (180-96506-3), BAW-8 (180-96506-4), BAW-9 (180-96506-5), DUP-02 (180-96506-6), FB-01 (180-96506-7) and EB-01 (180-96506-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-445211:

The following sample had white cloudy discoloration:BAW-5 (180-96506-3).

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

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Qualifiers

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-19
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-19
Iowa	State	373	09-17-20
Iowa	State Program	373	12-01-20
Kansas	NELAP	E-10236	10-31-19 *
Kentucky (DW)	State	KY90125	12-31-19
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-19
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20
Washington	State Program	C592	08-30-20
West Virginia DEP	State	381	10-31-19
West Virginia DEP	State Program	381	10-31-19 *

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-96506-1	BAW-3	Water	09/30/19 10:15	10/01/19 09:00	
180-96506-2	BAW-4	Water	09/30/19 09:15	10/01/19 09:00	
180-96506-3	BAW-5	Water	09/30/19 08:30	10/01/19 09:00	
180-96506-4	BAW-8	Water	09/30/19 11:50	10/01/19 09:00	
180-96506-5	BAW-9	Water	09/30/19 13:00	10/01/19 09:00	
180-96506-6	DUP-02	Water	09/30/19 08:15	10/01/19 09:00	
180-96506-7	FB-01	Water	09/30/19 11:55	10/01/19 09:00	
180-96506-8	EB-01	Water	09/30/19 12:15	10/01/19 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Client Sample ID: BAW-3
Date Collected: 09/30/19 10:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.06 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.06 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-4
Date Collected: 09/30/19 09:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.32 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.32 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-5
Date Collected: 09/30/19 08:30
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-3
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	PrecSep-21			1000.04 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.04 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									

Client Sample ID: BAW-8
Date Collected: 09/30/19 11:50
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.48 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.48 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Client Sample ID: BAW-8
Date Collected: 09/30/19 11:50
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-4
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	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL

Client Sample ID: BAW-9
Date Collected: 09/30/19 13:00
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.50 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.50 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-02
Date Collected: 09/30/19 08:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.01 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.01 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FB-01
Date Collected: 09/30/19 11:55
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.05 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.05 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Client Sample ID: EB-01
Date Collected: 09/30/19 12:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.66 mL	1.0 g	445211	10/04/19 19:22	ORM	TAL SL
Total/NA	Analysis	9315		1			447982	10/28/19 05:32	KLS	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.66 mL	1.0 g	445212	10/04/19 19:37	ORM	TAL SL
Total/NA	Analysis	9320		1			445862	10/11/19 16:36	AJD	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			448345	10/30/19 11:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

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

Analyst References:

Lab: TAL SL

Batch Type: Prep

ORM = Octavia Moore

Batch Type: Analysis

AJD = Audra DeMariano

KLS = Kody Saulters

SMP = Siobhan Perry

Client Sample ID: BAW-3

Date Collected: 09/30/19 10:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.357		0.113	0.118	1.00	0.114	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.644		0.305	0.311	1.00	0.449	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*83.7*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*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	1.00		0.325	0.333	5.00	0.449	pCi/L		10/30/19 11:32	1

Client Sample ID: BAW-4

Date Collected: 09/30/19 09:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0763	U	0.0741	0.0744	1.00	0.117	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.328	U	0.249	0.251	1.00	0.393	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*83.0*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*

Client Sample ID: BAW-4
Date Collected: 09/30/19 09:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-2
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	0.404		0.260	0.262	5.00	0.393	pCi/L		10/30/19 11:32	1

Client Sample ID: BAW-5
Date Collected: 09/30/19 08:30
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-3
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.189		0.102	0.104	1.00	0.137	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.521		0.301	0.305	1.00	0.453	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*

Client Sample ID: BAW-8
Date Collected: 09/30/19 11:50
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-4
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.157		0.0794	0.0806	1.00	0.0978	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.274	U	0.262	0.264	1.00	0.425	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*81.9*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*

Client Sample ID: BAW-8
Date Collected: 09/30/19 11:50
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-4
Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.430		0.274	0.276	5.00	0.425	pCi/L		10/30/19 11:32	1

Client Sample ID: BAW-9
Date Collected: 09/30/19 13:00
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-5
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.270		0.100	0.103	1.00	0.110	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.141	U	0.247	0.247	1.00	0.419	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*84.9*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*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	0.411	U	0.266	0.268	5.00	0.419	pCi/L		10/30/19 11:32	1

Client Sample ID: DUP-02
Date Collected: 09/30/19 08:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-6
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.171		0.0781	0.0796	1.00	0.0873	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Client Sample ID: DUP-02

Date Collected: 09/30/19 08:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-6
Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.263	U	0.267	0.268	1.00	0.434	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*78.9*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*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	**0.434**		0.278	0.280	5.00	0.434	pCi/L		10/30/19 11:32	1

Client Sample ID: FB-01

Date Collected: 09/30/19 11:55
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-7
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.102	U	0.0752	0.0757	1.00	0.111	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.104	U	0.209	0.209	1.00	0.358	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*87.5*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*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	0.205	U	0.222	0.222	5.00	0.358	pCi/L		10/30/19 11:32	1

Client Sample ID: EB-01
Date Collected: 09/30/19 12:15
Date Received: 10/01/19 09:00

Lab Sample ID: 180-96506-8
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.206**		0.0909	0.0928	1.00	0.107	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.148	U	0.255	0.256	1.00	0.432	pCi/L	10/04/19 19:37	10/11/19 16:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*1*
Y Carrier	*75.9*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:36*	*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	0.354	U	0.271	0.272	5.00	0.432	pCi/L		10/30/19 11:32	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-445211/11-A
Matrix: Water
Analysis Batch: 447982

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445211

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07538	U	0.0690	0.0694	1.00	0.107	pCi/L	10/04/19 19:22	10/28/19 05:32	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*10/04/19 19:22*	*10/28/19 05:32*	*1*

Lab Sample ID: LCS 160-445211/1-A
Matrix: Water
Analysis Batch: 447982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445211

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	10.07		1.04	1.00	0.113	pCi/L	89	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.0*		*40 - 110*

Lab Sample ID: LCSD 160-445211/2-A
Matrix: Water
Analysis Batch: 447982

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 445211

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.4	10.58		1.10	1.00	0.138	pCi/L	93	75 - 125	0.23	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*81.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-445212/11-A
Matrix: Water
Analysis Batch: 445862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445212

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1264	U	0.220	0.220	1.00	0.416	pCi/L	10/04/19 19:37	10/11/19 16:37	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:37*	*1*
Y Carrier	*78.9*		*40 - 110*	*10/04/19 19:37*	*10/11/19 16:37*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-445212/1-A
Matrix: Water
Analysis Batch: 445862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445212

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.50	10.95		1.24	1.00	0.426	pCi/L	115	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.0*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

Lab Sample ID: LCSD 160-445212/2-A
Matrix: Water
Analysis Batch: 445862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 445212

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			9.50	10.99		1.28	1.00	0.484	pCi/L	116	75 - 125	0.02	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*81.6*		*40 - 110*
Y Carrier	*83.4*		*40 - 110*

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-96506-2

Rad

Prep Batch: 445211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-1	BAW-3	Total/NA	Water	PrecSep-21	
180-96506-2	BAW-4	Total/NA	Water	PrecSep-21	
180-96506-3	BAW-5	Total/NA	Water	PrecSep-21	
180-96506-4	BAW-8	Total/NA	Water	PrecSep-21	
180-96506-5	BAW-9	Total/NA	Water	PrecSep-21	
180-96506-6	DUP-02	Total/NA	Water	PrecSep-21	
180-96506-7	FB-01	Total/NA	Water	PrecSep-21	
180-96506-8	EB-01	Total/NA	Water	PrecSep-21	
MB 160-445211/11-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-445211/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-445211/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 445212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-96506-1	BAW-3	Total/NA	Water	PrecSep_0	
180-96506-2	BAW-4	Total/NA	Water	PrecSep_0	
180-96506-3	BAW-5	Total/NA	Water	PrecSep_0	
180-96506-4	BAW-8	Total/NA	Water	PrecSep_0	
180-96506-5	BAW-9	Total/NA	Water	PrecSep_0	
180-96506-6	DUP-02	Total/NA	Water	PrecSep_0	
180-96506-7	FB-01	Total/NA	Water	PrecSep_0	
180-96506-8	EB-01	Total/NA	Water	PrecSep_0	
MB 160-445212/11-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-445212/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-445212/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-54716-10708.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc				Job #:

Address: 5720 Dove Drive	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Pace	TAT Requested (days):		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: FL, 32571			
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested		Other:
Email: rickhagendorfer@gmail.com	WO #:		
Project Name: CCR - Plant Daniel Ash Pond B CCR	Project #: 18020047		
Site:	SSOW#:		

Sample Identification	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 - Ra 226 & 228	6020 - B,Ca,As, Ba, Cd, Cr, Co, Pb,Li	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N		
[redacted] BAW-3	9/30/19	1015	G	Water			X	X	X		
[redacted] BAW-4		0915		Water							
[redacted] BAW-5		0830		Water							
[redacted] BAW-8		1150		Water							
[redacted] BAW-9		1300		Water							
[redacted] Dup-02		0815		Water							
FB-01		1155		Water							
EB-01	9/30/19	1215	G	Water			X	X	X		
				Water							
				Water							

180-96506 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	9/30/19 1640	RDH		10-1-19	TAPitt
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:00	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:

Ver: 01/16/2019

ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER

5720 DOVE DR

MILTON, FL 32571
UNITED STATES US

SHIP DATE: 30SEP19
ACTWGT: 59.50 LB
CAD: 6994562/SSFE2021
DIMS: 25x13x14 IN

BILL THIRD PARTY

TO

TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238

(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx
Express

E

1 of 2

TRK# 0201 7763 8621 5473

MASTER

XH AGCA

TUE - 01 OCT 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US PIT

Uncorrected temp 2.6 °C
Thermometer ID 10
CF 0 Initials B

PT-WI-SR-001 effective 11/8/18

180-96506 Waybill

ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER

5720 DOVE DR

MILTON, FL 32571
UNITED STATES US

SHIP DATE: 30SEP19
ACTWGT: 42.40 LB
CAD: 6994562/SSFE2021
DIMS: 17x12x15 IN

BILL THIRD PARTY

TO

TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx Express

E

J192119091901uv

Part # 156297-435 RRDB EXP 08/20
567J3/2A3C/0582

2 of 2
MPS# 0263 7763 8621 5484
Mstr# 7763 8621 5473 0201

XH AGCA

TUE - 01 OCT 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US **PIT**

Uncorrected temp 1.8 °C
Thermometer ID 10
CF 0 Initials B
PT-WI-SR-001 effective 11/8/18

ORIGIN ID:MOBA (850) 336-0192
RICK HAGENDORFER
5720 DOVE DR
MILTON, FL 32571
UNITED STATES US

SHIP DATE: 30SEP19
ACTWGT: 59.50 LB
CAD: 6994562/SSFE2021
DIMS: 25x13x14 IN
BILL THIRD PARTY

TO
TEST AMERICA
301 ALPHA DR
PITTSBURGH PA 15238
(412) 963-7068
INV:
PO:
REF:
DEPT:

Part # 156297-205 RRDR EXP 08/20

FedEx Express

1 of 2
TRK# 0201 7763 8621 5473
MASTER
XH AGCA

TUE - 01 OCT 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US PIT

180-96506 Waybill

Uncorrected temp 2.6 °C
Thermometer ID 10
CF 0 Initials B
PT-WI-SR-001 effective 11/8/18

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-375100.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Florida	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-96506-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/11/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
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)	9320_Ra228/PrecSep_0 Standard Target List	9315_Ra226/PrecSep_21 (MOD) Copy Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BAW-3 (180-96506-1)	9/30/19	10:15 Eastern		Water			X	X	1	
BAW-4 (180-96506-2)	9/30/19	09:15 Eastern		Water			X	X	1	
BAW-5 (180-96506-3)	9/30/19	08:30 Eastern		Water			X	X	1	
BAW-8 (180-96506-4)	9/30/19	11:50 Eastern		Water			X	X	1	
BAW-9 (180-96506-5)	9/30/19	13:00 Eastern		Water			X	X	1	
DUP-02 (180-96506-6)	9/30/19	08:15 Eastern		Water			X	X	1	
FB-01 (180-96506-7)	9/30/19	11:55 Eastern		Water			X	X	1	
EB-01 (180-96506-8)	9/30/19	12:15 Eastern		Water			X	X	1	

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: 10/2/19 1700	Company: DSIT	Received by:	Date/Time: 10-3-19 09:00	Company: TA SR
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:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-96506-2

Login Number: 96506
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-96506-2

Login Number: 96506
List Number: 2
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/03/19 12:13 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
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.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Product Name: Low-Flow System

Date: 2019-09-27 12:49:45

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	65 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	58.5 ft

Well Information:		Pumping Information:	
Well ID	BAW-7	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7701225 L
Well Total Depth	63.5 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	27.50 ft	Total Volume Pumped	113 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	12:26:04	15930.04	26.87	4.97	28.88	4.91	27.53	4.55	224.82
Last 5	12:31:04	16230.04	26.44	4.97	28.79	4.87	27.53	4.54	225.22
Last 5	12:36:04	16530.04	26.70	4.97	28.82	4.88	27.53	4.53	225.93
Last 5	12:41:12	16838.05	26.74	4.97	28.93	4.86	27.53	4.55	224.95
Last 5	12:46:12	17138.04	26.83	4.97	28.88	4.90	27.53	4.54	225.96
Variance 0			0.26	-0.00	0.03			-0.01	0.71
Variance 1			0.05	0.01	0.10			0.02	-0.98
Variance 2			0.09	-0.01	-0.05			-0.01	1.01

Notes

Sample time @ 1250. Sunny 95.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-27 13:42:51

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	67 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	58.1 ft

Well Information:		Pumping Information:	
Well ID	BAW-1	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7790493 L
Well Total Depth	60.6 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	0.6 in
Depth to Water	24.10 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	13:31:34	300.04	26.50	5.07	28.75	0.80	24.15	5.26	231.54
Last 5	13:36:34	600.04	26.45	5.00	29.15	0.72	24.15	5.14	231.02
Last 5	13:41:34	900.04	26.43	5.00	29.22	0.70	24.15	5.11	229.73
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.05	-0.07	0.40			-0.12	-0.52
Variance 2			-0.02	-0.00	0.07			-0.03	-1.29

Notes

Sample time @ 1345. Sunny 95. DUP-01@ 1245.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-27 14:33:33

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	62.2 ft

Well Information:		Pumping Information:	
Well ID	BAW-2A	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	67.2 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.24 in
Depth to Water	33.35 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	14:16:09	300.04	26.68	4.88	37.05	1.80	33.37	3.30	232.48
Last 5	14:21:09	600.05	26.64	4.87	37.54	1.72	33.37	3.23	231.24
Last 5	14:26:09	900.04	26.54	4.87	37.73	1.70	33.37	3.19	229.42
Last 5	14:31:09	1200.04	26.62	4.88	37.74	1.62	33.37	3.14	227.62
Last 5									
Variance 0			-0.05	-0.00	0.49			-0.07	-1.24
Variance 1			-0.10	-0.00	0.19			-0.04	-1.82
Variance 2			0.08	0.01	0.01			-0.05	-1.80

Notes

Sample time @ 1435. Sunny 95.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-30 08:28:09

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	72 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	64.1 ft

Well Information:		Pumping Information:	
Well ID	BAW-5	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8013664 L
Well Total Depth	69.1 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	34.00 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	08:11:03	300.05	24.19	5.97	126.22	2.39	34.03	0.14	-31.87
Last 5	08:16:03	600.04	24.15	6.00	120.59	1.88	34.03	0.13	-42.17
Last 5	08:21:03	900.05	24.15	6.03	118.53	1.78	34.03	0.14	-46.38
Last 5	08:26:03	1200.04	24.18	6.06	117.38	1.75	34.03	0.14	-50.31
Last 5									
Variance 0			-0.04	0.03	-5.63			-0.01	-10.30
Variance 1			-0.00	0.03	-2.06			0.01	-4.21
Variance 2			0.03	0.03	-1.15			0.01	-3.93

Notes

Sample time @ 0830. Sunny 85.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-30 09:14:27

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	75 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	64.9 ft

Well Information:		Pumping Information:	
Well ID	BAW-4	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8147567 L
Well Total Depth	69.9 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	30.52 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	08:57:21	300.08	25.44	5.34	47.97	1.71	30.55	0.23	92.32
Last 5	09:02:21	600.06	25.39	5.26	47.52	1.45	30.55	0.17	87.40
Last 5	09:07:21	900.05	25.42	5.23	47.15	1.37	30.55	0.17	84.05
Last 5	09:12:23	1202.05	25.46	5.21	46.84	1.30	30.55	0.18	81.47
Last 5									
Variance 0			-0.06	-0.09	-0.45			-0.06	-4.92
Variance 1			0.03	-0.03	-0.37			0.00	-3.35
Variance 2			0.05	-0.02	-0.32			0.01	-2.58

Notes

Sample time @ 0915. Sunny 88. DUP-02 fake time @ 0815.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-30 10:11:40

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.4 ft

Well Information:		Pumping Information:	
Well ID	BAW-3	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	68.4 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.24 in
Depth to Water	33.00 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	09:55:39	300.05	26.11	4.72	48.55	2.25	33.02	0.37	157.79
Last 5	10:00:39	600.05	26.11	4.68	48.36	2.19	33.02	0.33	157.88
Last 5	10:05:39	900.05	26.08	4.68	48.08	1.96	33.02	0.29	158.30
Last 5	10:10:39	1200.05	26.14	4.67	47.83	1.93	33.02	0.28	159.17
Last 5									
Variance 0			0.01	-0.04	-0.19			-0.04	0.09
Variance 1			-0.04	-0.00	-0.28			-0.03	0.42
Variance 2			0.06	-0.01	-0.24			-0.01	0.87

Notes

Sample time @ 1015. Sunny 90.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-30 11:51:35

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	QED
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.7 ft

Well Information:		Pumping Information:	
Well ID	BAW-8	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.7924396 L
Well Total Depth	68.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.96 in
Depth to Water	33.87 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	11:29:10	300.06	25.76	5.87	84.14	0.98	33.95	0.13	-34.46
Last 5	11:34:10	600.05	25.53	5.87	84.42	0.93	33.95	0.12	-35.82
Last 5	11:39:10	900.05	25.39	5.87	84.62	0.86	33.95	0.11	-36.77
Last 5	11:44:10	1200.05	25.32	5.87	84.82	0.80	33.95	0.11	-37.24
Last 5	11:49:10	1500.05	25.42	5.88	85.30	0.74	33.95	0.11	-38.52
Variance 0			-0.14	0.00	0.20			-0.02	-0.95
Variance 1			-0.07	-0.00	0.20			-0.00	-0.47
Variance 2			0.10	0.01	0.48			0.00	-1.28

Notes

Sample time @ 1150. PC 90. FB-01@ 1155.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-30 12:57:53

Project Information:		Pump Information:	
Operator Name	Philip Evans	Pump Model/Type	BP
Company Name	RDH Environmental	Tubing Type	PE
Project Name	Plant Daniel BAW wells	Tubing Diameter	.17 in
Site Name	Daniel	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	417744		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	63.7 ft

Well Information:		Pumping Information:	
Well ID	BAW-9	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.5324396 L
Well Total Depth	68.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.48 in
Depth to Water	33.16 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	12:34:51	300.09	26.00	5.86	79.05	1.82	33.20	1.08	-11.69
Last 5	12:39:51	600.05	25.95	5.83	82.73	1.80	33.20	0.37	-29.46
Last 5	12:44:51	900.05	26.01	5.84	82.89	1.71	33.20	0.22	-36.06
Last 5	12:49:51	1200.05	25.91	5.84	82.77	1.68	33.20	0.18	-39.83
Last 5	12:54:51	1500.05	26.10	5.84	82.90	1.67	33.20	0.15	-41.80
Variance 0			0.05	0.00	0.16			-0.15	-6.60
Variance 1			-0.10	-0.00	-0.12			-0.04	-3.77
Variance 2			0.19	0.00	0.13			-0.03	-1.96

Notes

Sample time @ 1300. PC 92. EB-01@ 1215.

Grab Samples

Appendix B

1st
Semi-Annual
Monitoring Event

Interwell Prediction Limits - Significant Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 6/21/2019, 10:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**BAW-5**	**0.05**	**n/a**	**4/17/2019**	**0.118**	**Yes**	**28**	**100**	**n/a**	**0.002268**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**BAW-5**	**2.8**	**n/a**	**4/17/2019**	**13**	**Yes**	**28**	**3.571**	**n/a**	**0.002268**	**NP Inter (normality) ...**
Chloride (mg/L)	**BAW-3**	**7.661**	**n/a**	**4/17/2019**	**7.71**	**Yes**	**28**	**0**	**No**	**0.00188**	**Param Inter 1 of 2**
Chloride (mg/L)	**BAW-5**	**7.661**	**n/a**	**4/17/2019**	**9.24**	**Yes**	**28**	**0**	**No**	**0.00188**	**Param Inter 1 of 2**
pH (SU)	**BAW-5**	**5.496**	**4.491**	**4/17/2019**	**6.14**	**Yes**	**28**	**0**	**No**	**0.000...**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**BAW-5**	**59.77**	**n/a**	**4/17/2019**	**82**	**Yes**	**28**	**7.143**	**sqrt(x)**	**0.00188**	**Param Inter 1 of 2**

Interwell Prediction Limits - All Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 6/21/2019, 10:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	BAW-3	0.05	n/a	4/17/2019	0.05ND	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of 2
Boron (mg/L)	BAW-4	0.05	n/a	4/17/2019	0.05ND	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of 2
Boron (mg/L)	**BAW-5**	**0.05**	**n/a**	**4/17/2019**	**0.118**	**Yes**	**28**	**100**	**n/a**	**0.002268**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	BAW-7	0.05	n/a	4/18/2019	0.05ND	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of 2
Calcium (mg/L)	BAW-3	2.8	n/a	4/17/2019	0.711	No	28	3.571	n/a	0.002268	NP Inter (normality) ...
Calcium (mg/L)	BAW-4	2.8	n/a	4/17/2019	2.77	No	28	3.571	n/a	0.002268	NP Inter (normality) ...
Calcium (mg/L)	**BAW-5**	**2.8**	**n/a**	**4/17/2019**	**13**	**Yes**	**28**	**3.571**	**n/a**	**0.002268**	**NP Inter (normality) ...**
Calcium (mg/L)	BAW-7	2.8	n/a	4/18/2019	0.55	No	28	3.571	n/a	0.002268	NP Inter (normality) ...
Chloride (mg/L)	**BAW-3**	**7.661**	**n/a**	**4/17/2019**	**7.71**	**Yes**	**28**	**0**	**No**	**0.00188**	**Param Inter 1 of 2**
Chloride (mg/L)	BAW-4	7.661	n/a	4/17/2019	6.68	No	28	0	No	0.00188	Param Inter 1 of 2
Chloride (mg/L)	**BAW-5**	**7.661**	**n/a**	**4/17/2019**	**9.24**	**Yes**	**28**	**0**	**No**	**0.00188**	**Param Inter 1 of 2**
Chloride (mg/L)	BAW-7	7.661	n/a	4/18/2019	4.64	No	28	0	No	0.00188	Param Inter 1 of 2
Fluoride (mg/L)	BAW-3	0.1782	n/a	4/17/2019	0.17817...	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of ...
Fluoride (mg/L)	BAW-4	0.1782	n/a	4/17/2019	0.01117	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of ...
Fluoride (mg/L)	BAW-5	0.1782	n/a	4/17/2019	0.02027	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of ...
Fluoride (mg/L)	BAW-7	0.1782	n/a	4/18/2019	0.17817...	No	28	100	n/a	0.002268	NP Inter (NDs) 1 of ...
pH (SU)	BAW-3	5.496	4.491	4/17/2019	4.71	No	28	0	No	0.000...	Param Inter 1 of 2
pH (SU)	BAW-4	5.496	4.491	4/17/2019	5.13	No	28	0	No	0.000...	Param Inter 1 of 2
pH (SU)	**BAW-5**	**5.496**	**4.491**	**4/17/2019**	**6.14**	**Yes**	**28**	**0**	**No**	**0.000...**	**Param Inter 1 of 2**
pH (SU)	BAW-7	5.496	4.491	4/18/2019	4.9	No	28	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	BAW-3	5	n/a	4/17/2019	2.5	No	28	67.86	n/a	0.002268	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	BAW-4	5	n/a	4/17/2019	3.15	No	28	67.86	n/a	0.002268	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	BAW-5	5	n/a	4/17/2019	3.27	No	28	67.86	n/a	0.002268	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	BAW-7	5	n/a	4/18/2019	1.82	No	28	67.86	n/a	0.002268	NP Inter (NDs) 1 of 2
Total Dissolved Solids (mg/L)	BAW-3	59.77	n/a	4/17/2019	27	No	28	7.143	sqrt(x)	0.00188	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BAW-4	59.77	n/a	4/17/2019	37	No	28	7.143	sqrt(x)	0.00188	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**BAW-5**	**59.77**	**n/a**	**4/17/2019**	**82**	**Yes**	**28**	**7.143**	**sqrt(x)**	**0.00188**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	BAW-7	59.77	n/a	4/18/2019	39	No	28	7.143	sqrt(x)	0.00188	Param Inter 1 of 2

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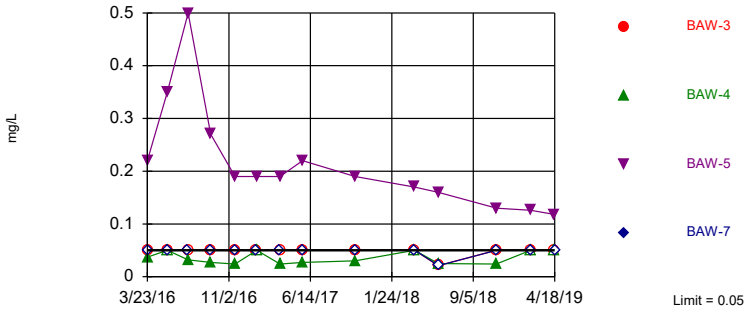
Hollow symbols indicate censored values.

Exceeds Limit: BAW-5

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 28) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.018. Individual comparison alpha = 0.002268 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Boron Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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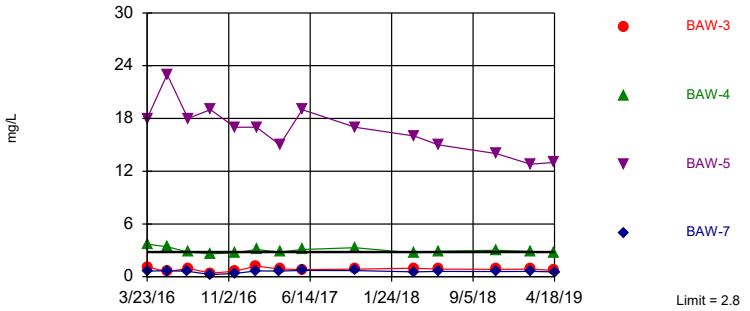
Exceeds Limit: BAW-5

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 28 background values. 3.571% NDs. Annual per-constituent alpha = 0.018. Individual comparison alpha = 0.002268 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Calcium Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

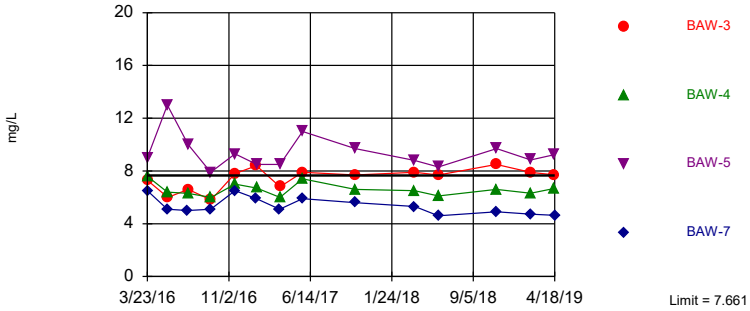
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG

Exceeds Limit: BAW-3, BAW-5

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=5.699, Std. Dev.=1.036, n=28. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9148, critical = 0.896. Kappa = 1.894 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.00188. Comparing 4 points to limit.

Constituent: Chloride Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

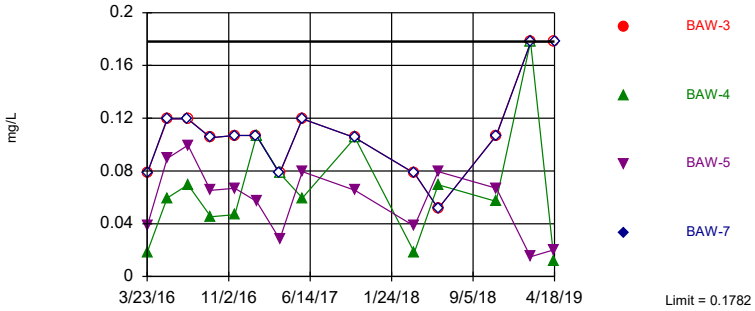
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 28 background values. 100% NDs. Annual per-constituent alpha = 0.018. Individual comparison alpha = 0.002268 (1 of 2). Comparing 4 points to limit. Data were deseasonalized.

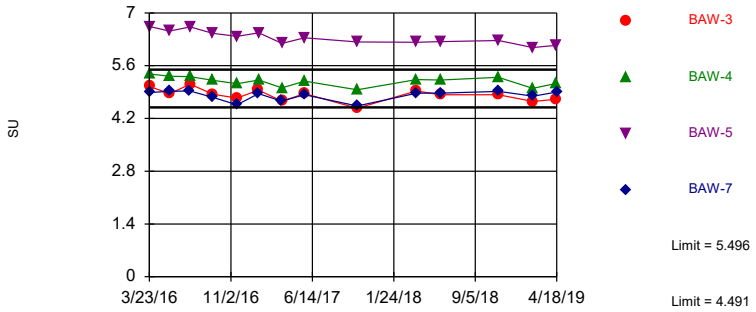
Constituent: Fluoride Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Exceeds Limits: BAW-5

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=4.994, Std. Dev.=0.2654, n=28. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9331, critical = 0.896. Kappa = 1.894 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009398. Comparing 4 points to limit.

Constituent: pH Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

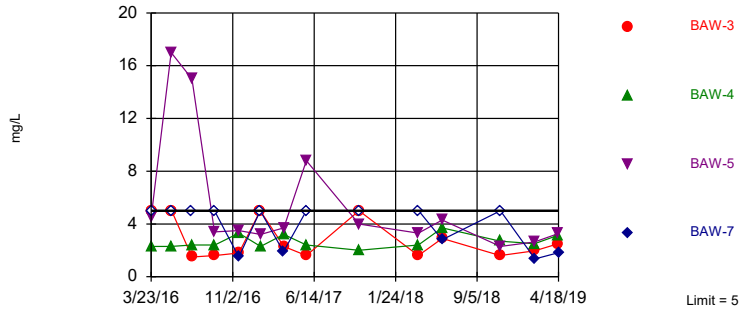
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 28 background values. 67.86% NDs. Annual per-constituent alpha = 0.018. Individual comparison alpha = 0.002268 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Sulfate Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

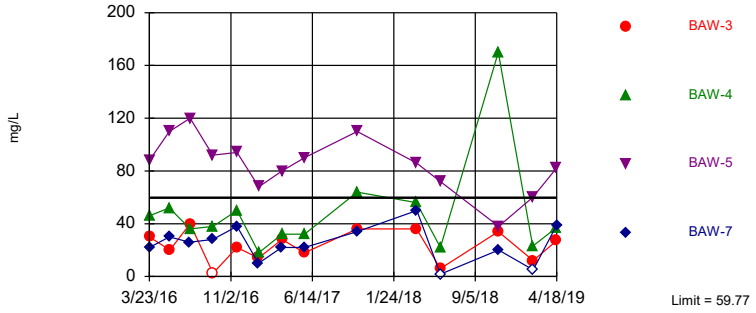
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Hollow symbols indicate censored values.

Exceeds Limit: BAW-5

Prediction Limit

Interwell Parametric



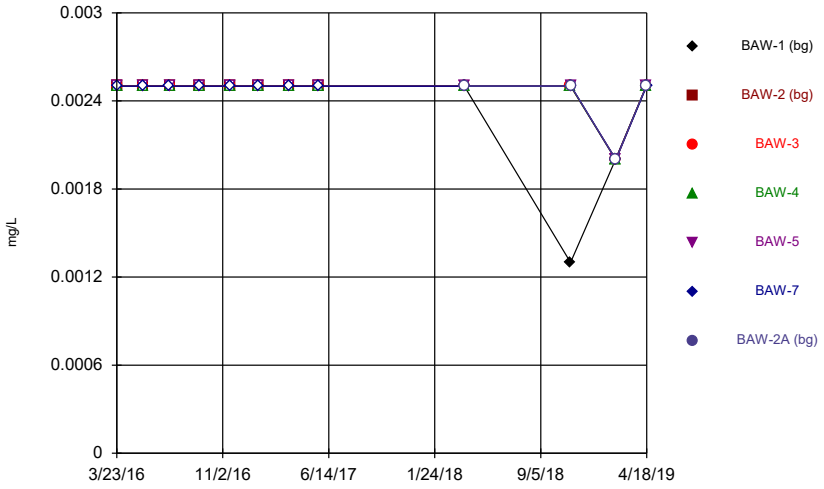
Background Data Summary (based on square root transformation): Mean=4.596, Std. Dev.=1.655, n=28, 7.143% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9287, critical = 0.896. Kappa = 1.894 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.00188. Comparing 4 points to limit.

Constituent: Total Dissolved Solids Analysis Run 6/21/2019 10:15 AM View: Interwell PLs

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

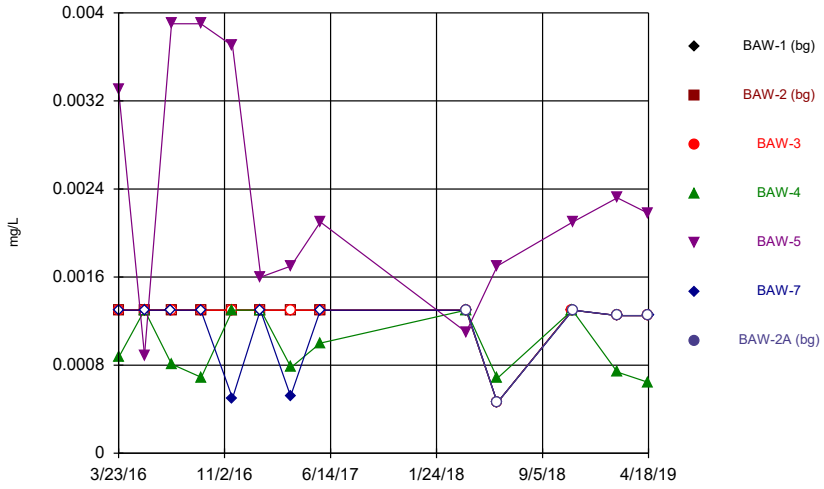
Time Series



Constituent: Antimony Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

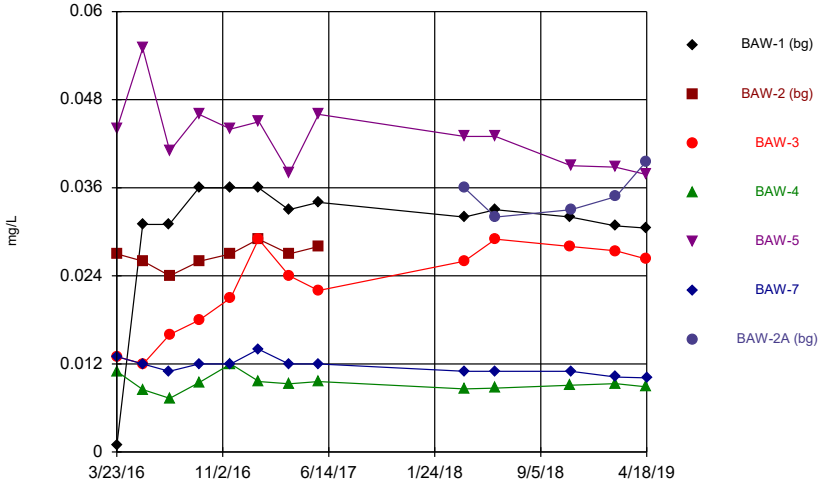
Time Series



Constituent: Arsenic Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG

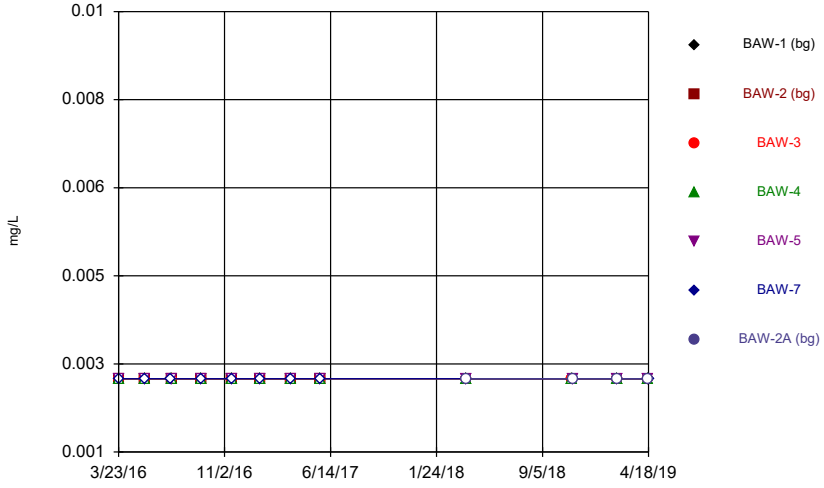
Time Series



Constituent: Barium Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

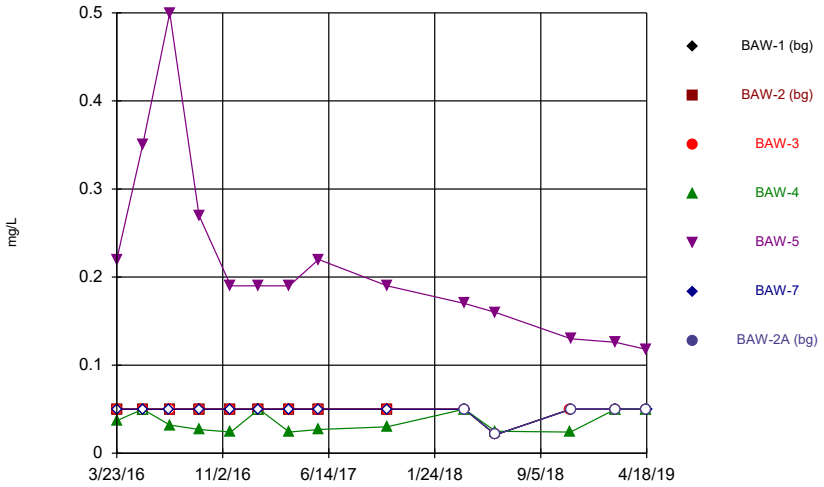
Time Series



Constituent: Beryllium Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

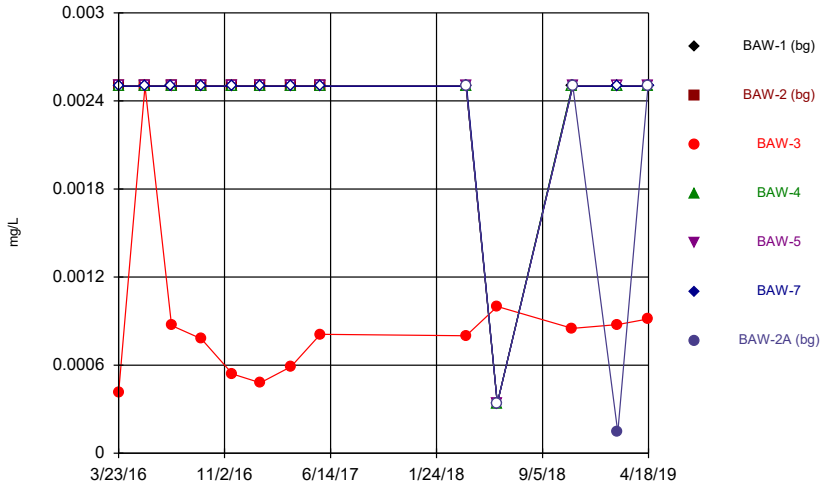
Time Series



Constituent: Boron Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

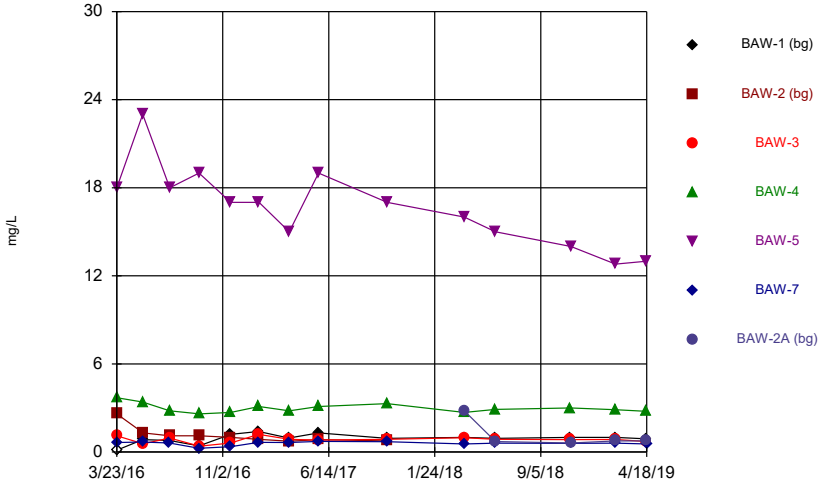
Time Series



Constituent: Cadmium Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

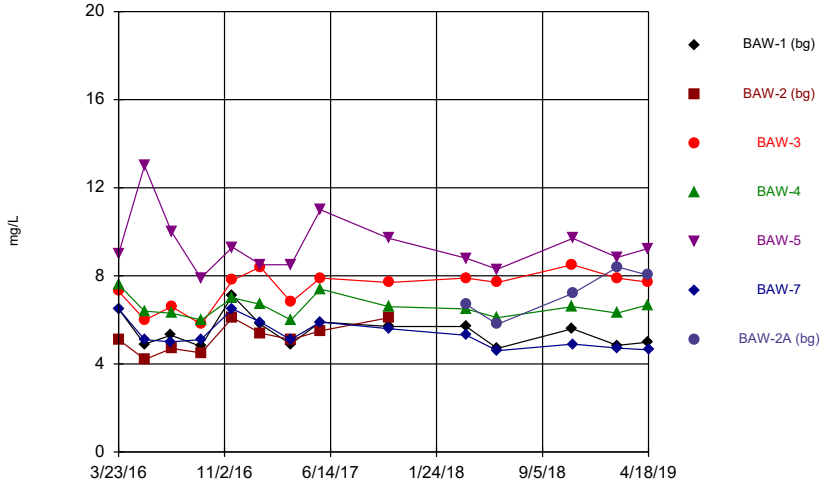
Time Series



Constituent: Calcium Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG

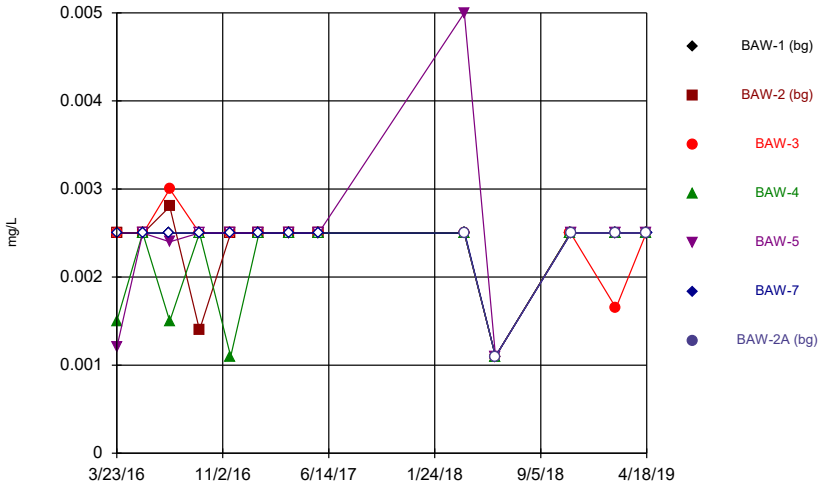
Time Series



Constituent: Chloride Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

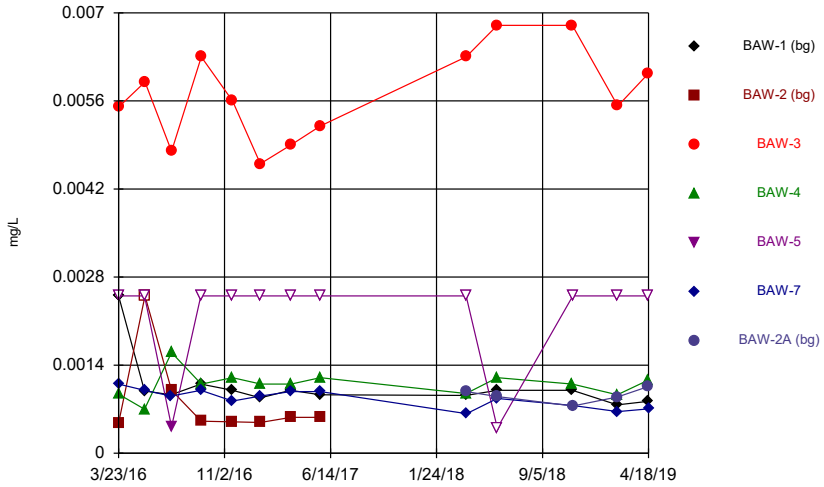
Time Series



Constituent: Chromium Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

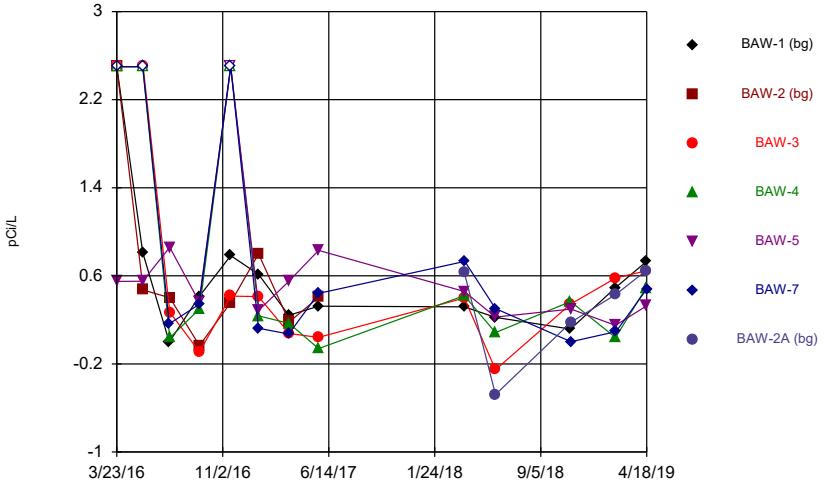
Time Series



Constituent: Cobalt Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

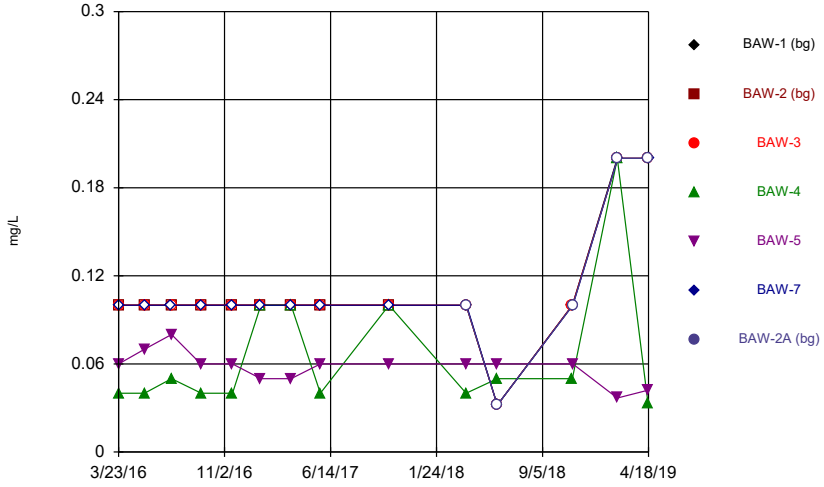
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

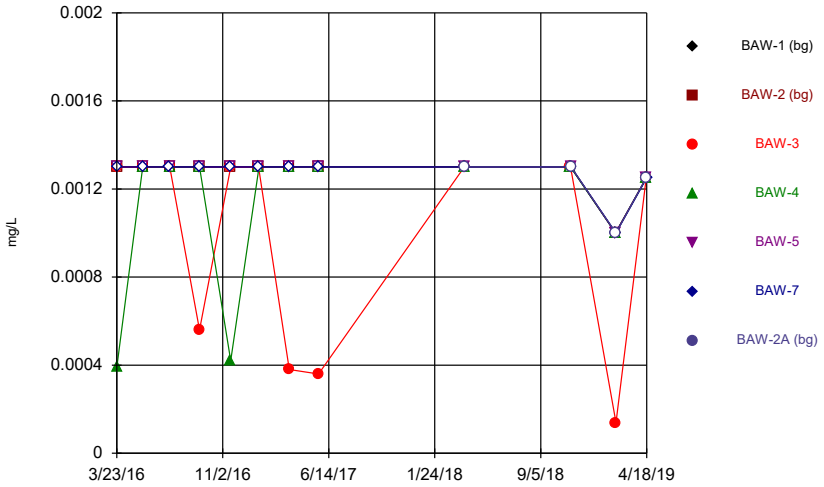
Time Series



Constituent: Fluoride Analysis Run 6/21/2019 10:17 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

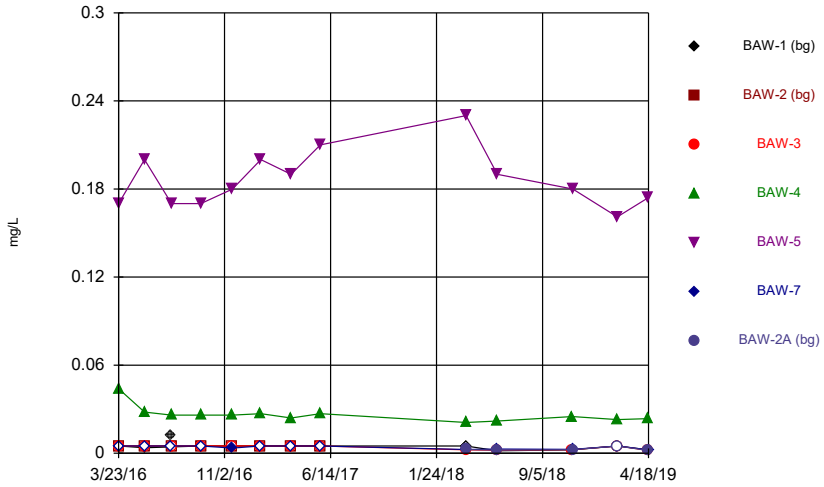
Time Series



Constituent: Lead Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

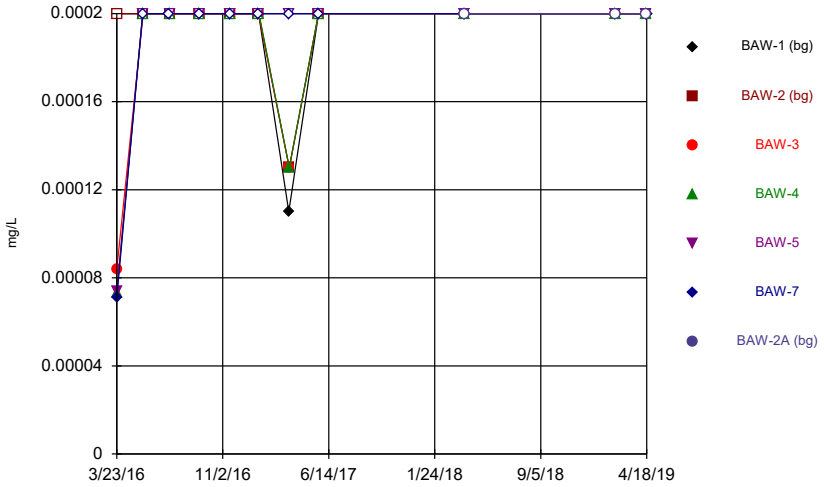
Time Series



Constituent: Lithium Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

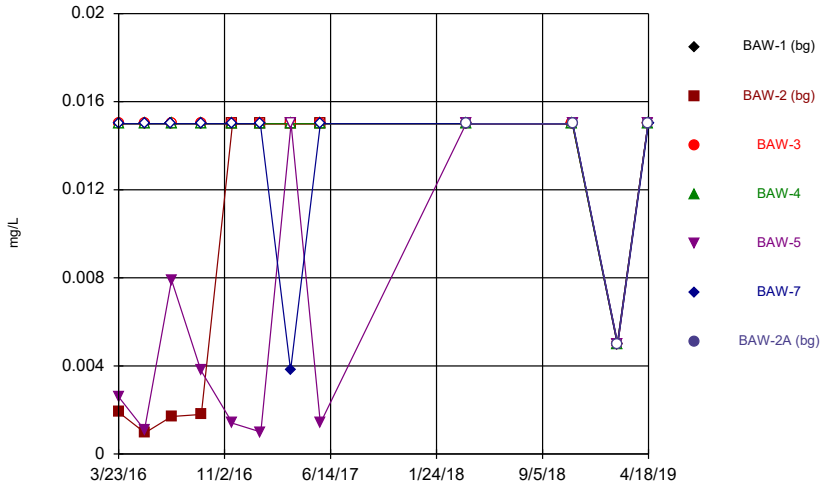
Time Series



Constituent: Mercury Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

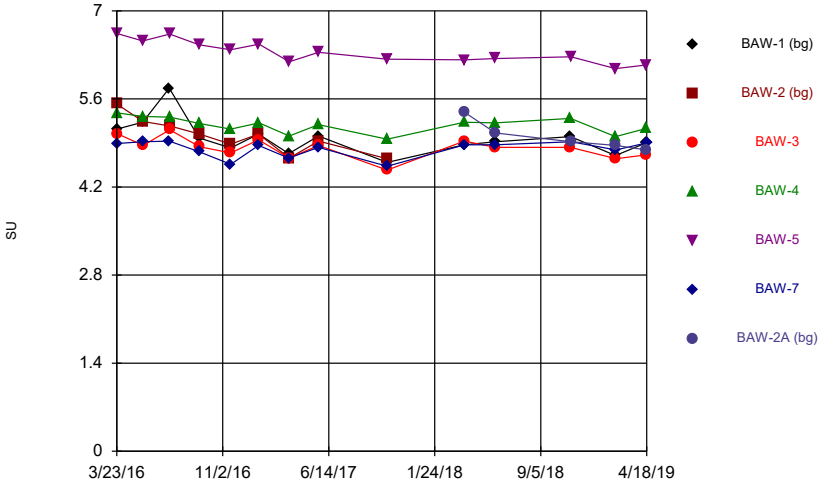
Time Series



Constituent: Molybdenum Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG

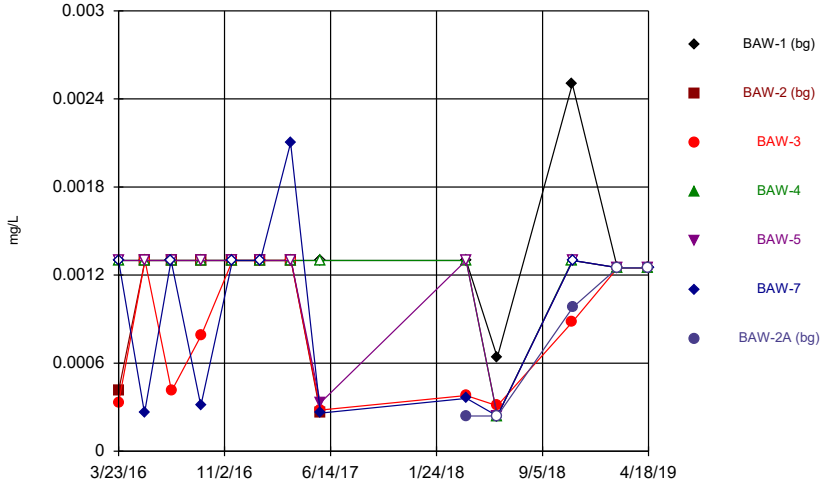
Time Series



Constituent: pH Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

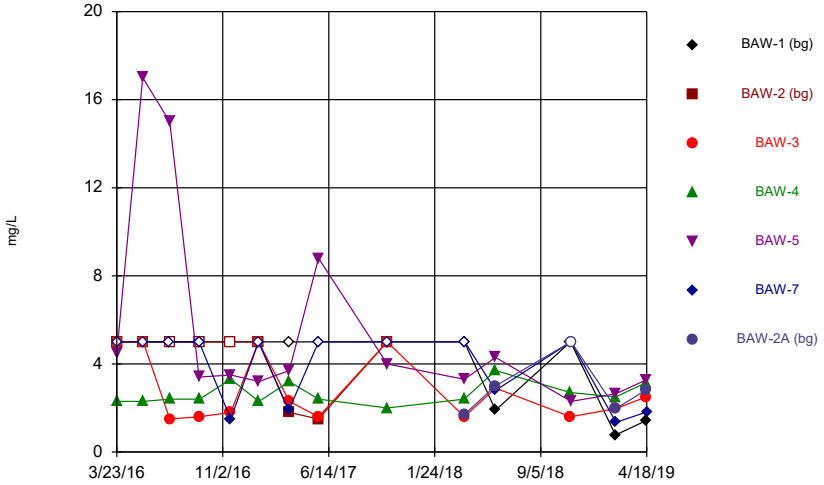
Time Series



Constituent: Selenium Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

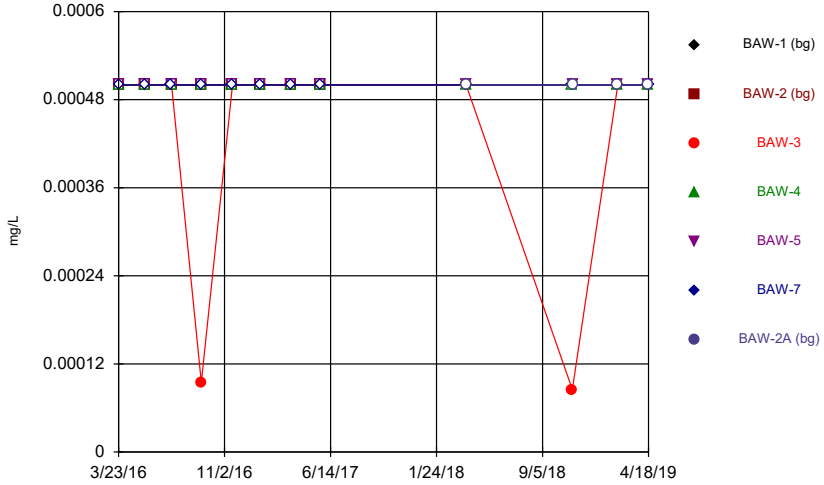
Time Series



Constituent: Sulfate Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

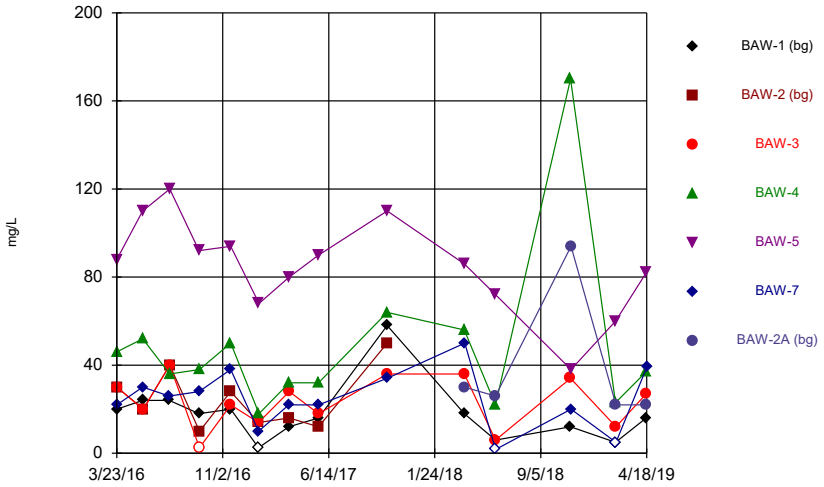
Time Series



Constituent: Thallium Analysis Run 6/21/2019 10:18 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Hollow symbols indicate censored values.

Time Series



Constituent: Total Dissolved Solids Analysis Run 6/21/2019 10:18 AM View: Time Series

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

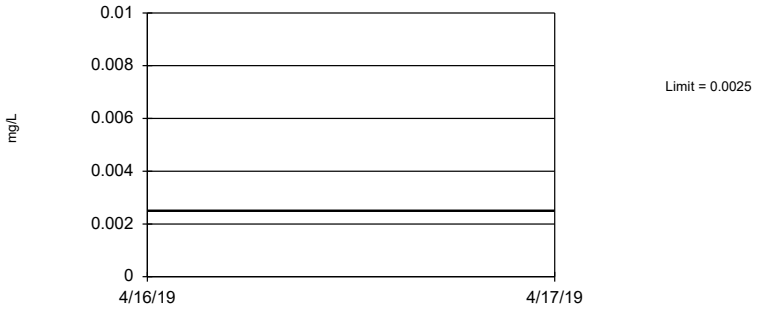
Upper Tolerance Limits

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 6/21/2019, 10:20 AM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.0025	24	n/a	n/a	95.83	n/a	n/a	0.292	NP Inter(NDs)
Arsenic (mg/L)	0.00125	26	n/a	n/a	100	n/a	n/a	0.2635	NP Inter(NDs)
Barium (mg/L)	0.04087	26	0.0009615	0.0003111	0	None	x^2	0.05	Inter
Beryllium (mg/L)	0.0025	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)
Cadmium (mg/L)	0.0025	26	n/a	n/a	96.15	n/a	n/a	0.2635	NP Inter(NDs)
Chromium (mg/L)	0.0028	26	n/a	n/a	92.31	n/a	n/a	0.2635	NP Inter(NDs)
Cobalt (mg/L)	0.001381	26	0.0008673	0.0002254	7.692	None	No	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	2.5	26	n/a	n/a	7.692	n/a	n/a	0.2635	NP Inter(normal...
Fluoride (mg/L)	0.2	28	n/a	n/a	100	n/a	n/a	0.2378	NP Inter(NDs)
Lead (mg/L)	0.00125	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)
Lithium (mg/L)	0.005	25	n/a	n/a	68	n/a	n/a	0.2774	NP Inter(normal...
Mercury (mg/L)	0.0002	22	n/a	n/a	90.91	n/a	n/a	0.3235	NP Inter(NDs)
Molybdenum (mg/L)	0.015	24	n/a	n/a	83.33	n/a	n/a	0.292	NP Inter(NDs)
Selenium (mg/L)	0.0025	26	n/a	n/a	76.92	n/a	n/a	0.2635	NP Inter(NDs)
Thallium (mg/L)	0.0005	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric



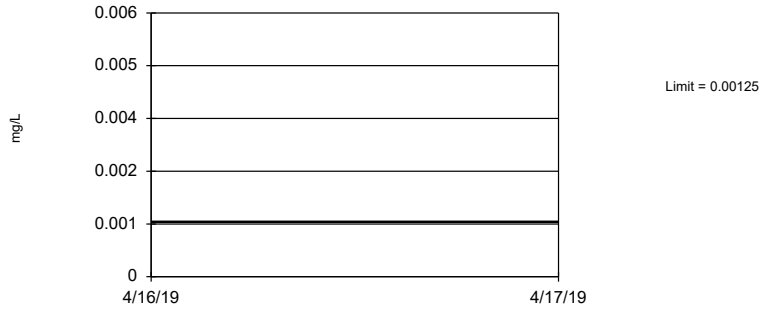
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 24 background values. 95.83% NDs. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Antimony Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



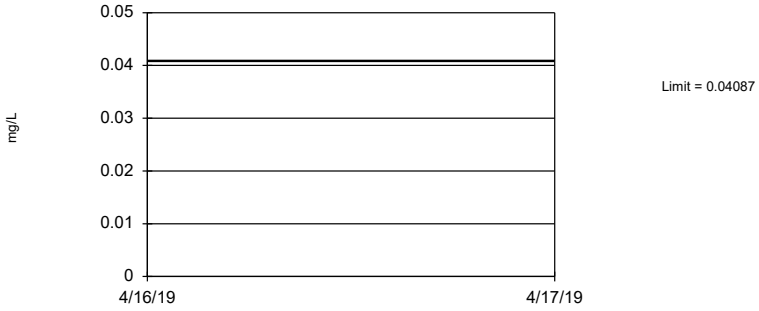
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Arsenic Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Parametric



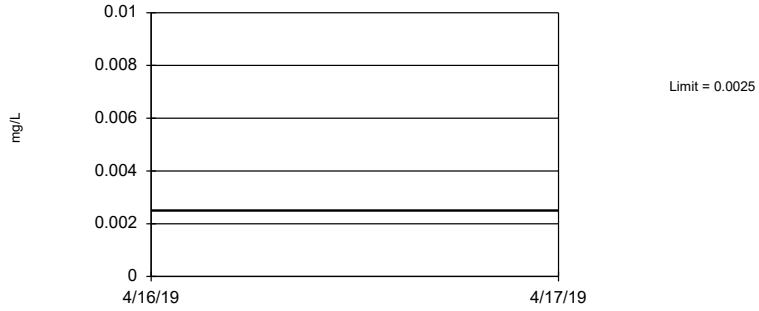
95% coverage. Background Data Summary (based on square transformation): Mean=0.0009615, Std. Dev.=0.0003111, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.939, critical = 0.891. Report alpha = 0.05.

Constituent: Barium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



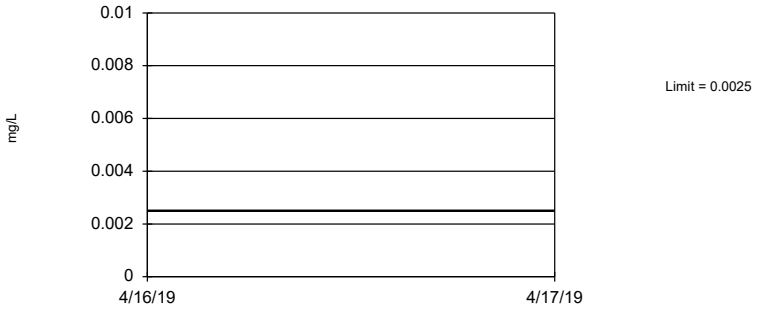
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Beryllium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



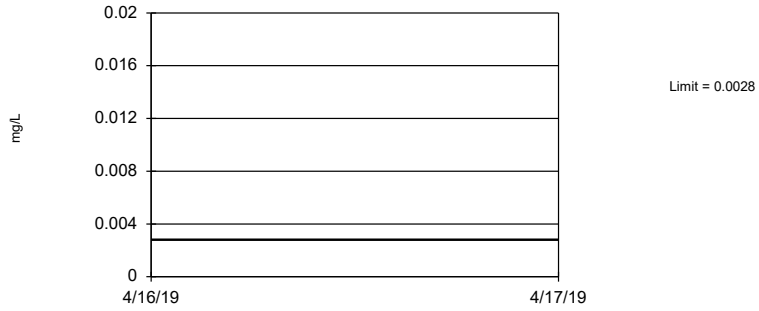
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 26 background values. 96.15% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Cadmium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



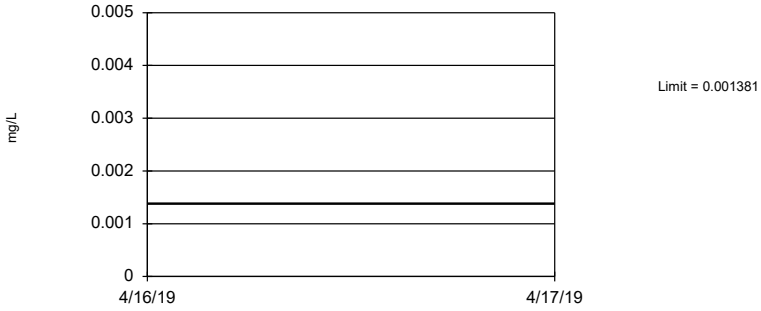
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 26 background values. 92.31% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Chromium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Parametric



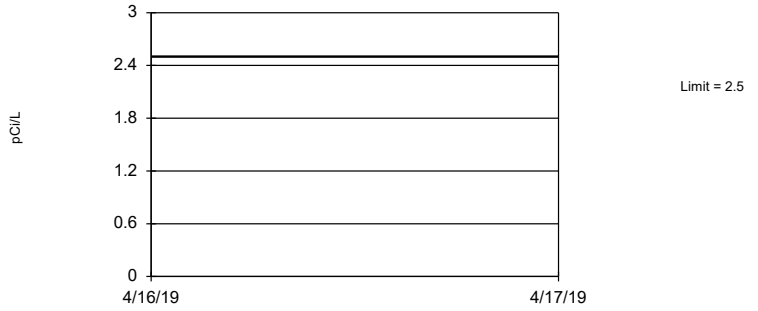
95% coverage. Background Data Summary: Mean=0.0008673, Std. Dev.=0.0002254, n=26, 7.692% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9065, critical = 0.891. Report alpha = 0.05.

Constituent: Cobalt Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



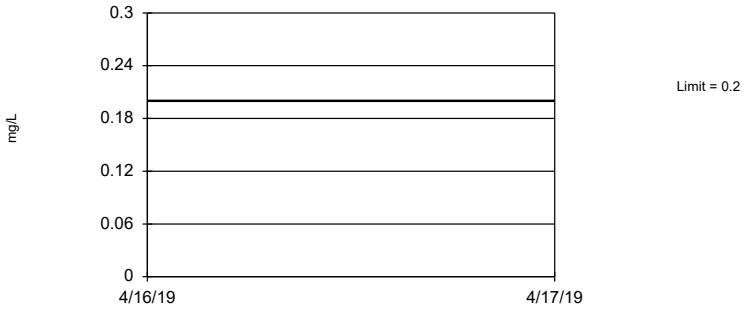
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. 7.692% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Combined Radium 226 + 228 Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - App

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

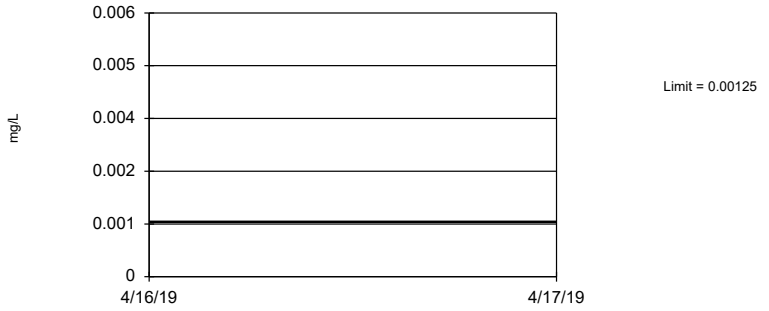


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 84.96% coverage at alpha=0.01; 90.04% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2378.

Constituent: Fluoride Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

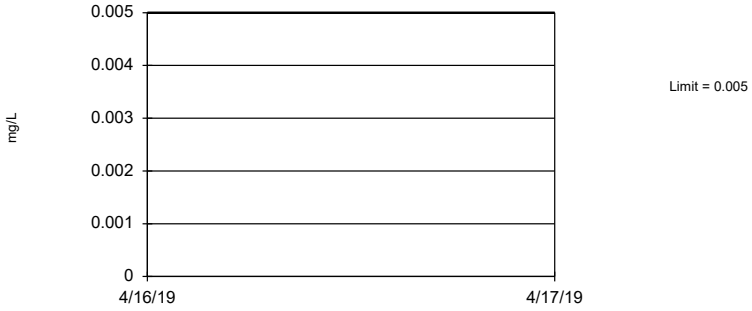


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Lead Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

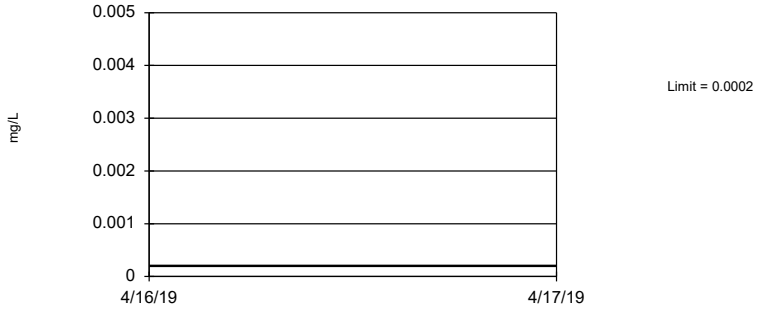


Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 25 background values. 68% NDs. 83.01% coverage at alpha=0.01; 88.87% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.2774.

Constituent: Lithium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

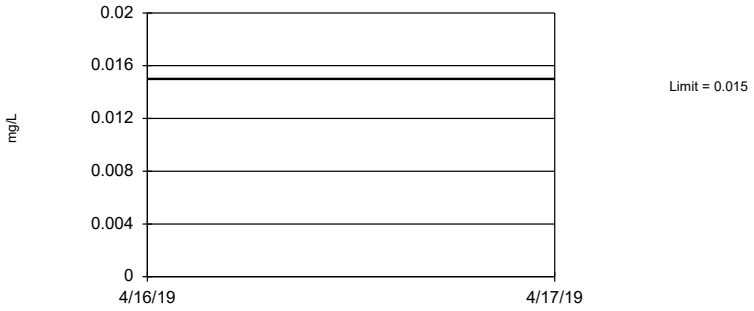


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 22 background values. 90.91% NDs. 81.05% coverage at alpha=0.01; 87.3% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.3235.

Constituent: Mercury Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



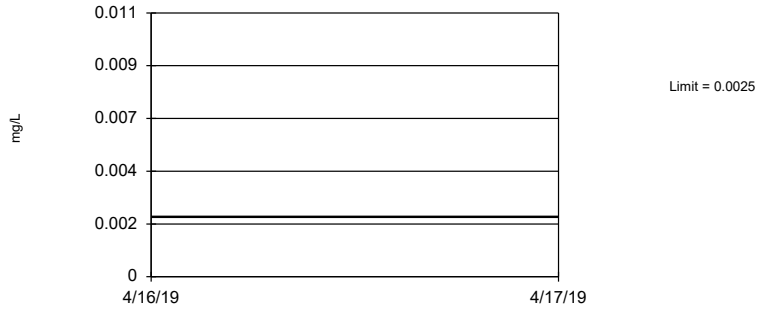
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 24 background values. 83.33% NDs. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Molybdenum Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



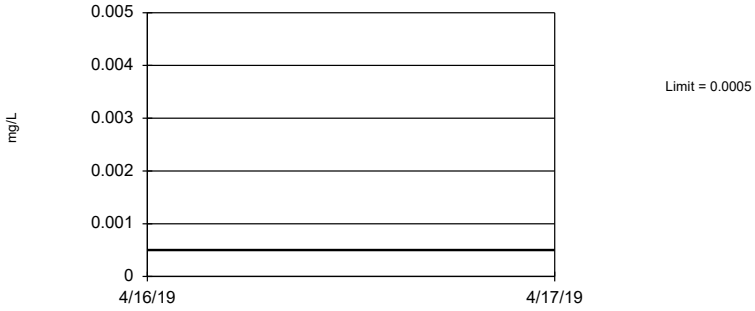
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 26 background values. 76.92% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Selenium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Thallium Analysis Run 6/21/2019 10:19 AM View: Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Confidence Intervals - Significant Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 6/21/2019, 10:22 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (mg/L)	**BAW-5**	**0.201**	**0.1721**	**0.04**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**

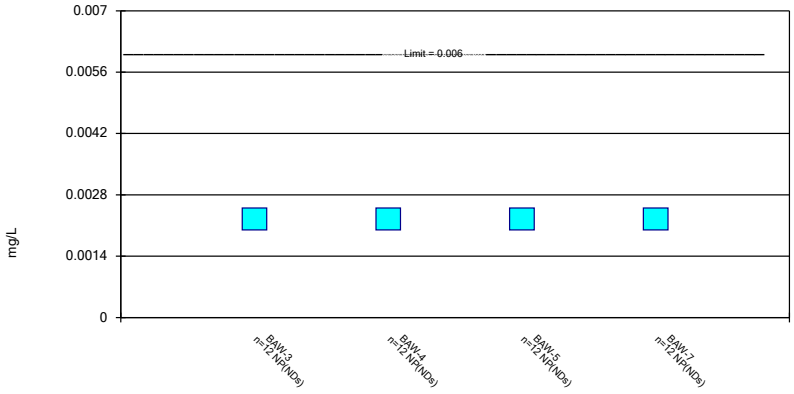
Confidence Intervals - All Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 6/21/2019, 10:22 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	BAW-3	0.0025	0.002	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	BAW-4	0.0025	0.002	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	BAW-5	0.0025	0.002	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	BAW-7	0.0025	0.002	0.006	No	12	100	No	0.01	NP (NDs)
Arsenic (mg/L)	BAW-3	0.0013	0.00125	0.01	No	13	100	No	0.01	NP (NDs)
Arsenic (mg/L)	BAW-4	0.0013	0.00068	0.01	No	13	30.77	No	0.01	NP (normality)
Arsenic (mg/L)	BAW-5	0.003113	0.001578	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BAW-7	0.0013	0.0005	0.01	No	13	84.62	No	0.01	NP (NDs)
Barium (mg/L)	BAW-3	0.02691	0.01797	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BAW-4	0.0102	0.008477	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BAW-5	0.04657	0.03968	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BAW-7	0.01245	0.01083	2	No	13	0	No	0.01	Param.
Beryllium (mg/L)	BAW-3	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BAW-4	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BAW-5	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BAW-7	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BAW-3	0.001	0.00048	0.005	No	13	7.692	No	0.01	NP (normality)
Cadmium (mg/L)	BAW-4	0.0025	0.00034	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BAW-5	0.0025	0.00034	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BAW-7	0.0025	0.00034	0.005	No	13	100	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-3	0.003	0.00165	0.1	No	13	84.62	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-4	0.0025	0.0011	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-5	0.005	0.0012	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-7	0.0025	0.0011	0.1	No	13	100	No	0.01	NP (NDs)
Cobalt (mg/L)	BAW-3	0.006249	0.005174	0.006	No	13	0	No	0.01	Param.
Cobalt (mg/L)	BAW-4	0.001253	0.0009436	0.006	No	13	0	No	0.01	Param.
Cobalt (mg/L)	BAW-5	0.0025	0.00042	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BAW-7	0.0009807	0.0007633	0.006	No	13	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAW-3	0.646	-0.0909	5	No	13	15.38	No	0.01	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	BAW-4	5	0.0365	5	No	13	23.08	No	0.01	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	BAW-5	0.928	0.2595	5	No	13	7.692	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAW-7	5	0.0719	5	No	13	23.08	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	BAW-3	0.2	0.032	4	No	14	100	No	0.01	NP (NDs)
Fluoride (mg/L)	BAW-4	0.1	0.033	4	No	14	28.57	No	0.01	NP (normality)
Fluoride (mg/L)	BAW-5	0.06536	0.0502	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	BAW-7	0.2	0.032	4	No	14	100	No	0.01	NP (NDs)
Lead (mg/L)	BAW-3	0.0013	0.00036	0.015	No	12	66.67	No	0.01	NP (normality)
Lead (mg/L)	BAW-4	0.0013	0.00042	0.015	No	12	83.33	No	0.01	NP (NDs)
Lead (mg/L)	BAW-5	0.0013	0.00125	0.015	No	12	100	No	0.01	NP (NDs)
Lead (mg/L)	BAW-7	0.0013	0.00125	0.015	No	12	100	No	0.01	NP (NDs)
Lithium (mg/L)	BAW-3	0.005	0.002	0.04	No	13	69.23	No	0.01	NP (normality)
Lithium (mg/L)	BAW-4	0.028	0.022	0.04	No	13	0	No	0.01	NP (normality)
Lithium (mg/L)	**BAW-5**	**0.201**	**0.1721**	**0.04**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Lithium (mg/L)	BAW-7	0.005	0.0026	0.04	No	13	61.54	No	0.01	NP (normality)
Mercury (mg/L)	BAW-3	0.0002	0.000084	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BAW-4	0.0002	0.000073	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BAW-5	0.0002	0.000074	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BAW-7	0.0002	0.000071	0.002	No	11	90.91	No	0.006	NP (NDs)
Molybdenum (mg/L)	BAW-3	0.015	0.005	0.1	No	12	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BAW-4	0.015	0.005	0.1	No	12	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BAW-5	0.015	0.0011	0.1	No	12	41.67	No	0.01	NP (Cohens/xfrm)
Molybdenum (mg/L)	BAW-7	0.015	0.005	0.1	No	12	91.67	No	0.01	NP (NDs)
Selenium (mg/L)	BAW-3	0.0013	0.00031	0.05	No	13	46.15	No	0.01	NP (normality)
Selenium (mg/L)	BAW-4	0.0013	0.00125	0.05	No	13	100	No	0.01	NP (NDs)
Selenium (mg/L)	BAW-5	0.0013	0.00033	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	BAW-7	0.0021	0.00026	0.05	No	13	61.54	No	0.01	NP (normality)
Thallium (mg/L)	BAW-3	0.0005	0.000095	0.002	No	12	83.33	No	0.01	NP (NDs)
Thallium (mg/L)	BAW-4	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)
Thallium (mg/L)	BAW-5	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)
Thallium (mg/L)	BAW-7	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

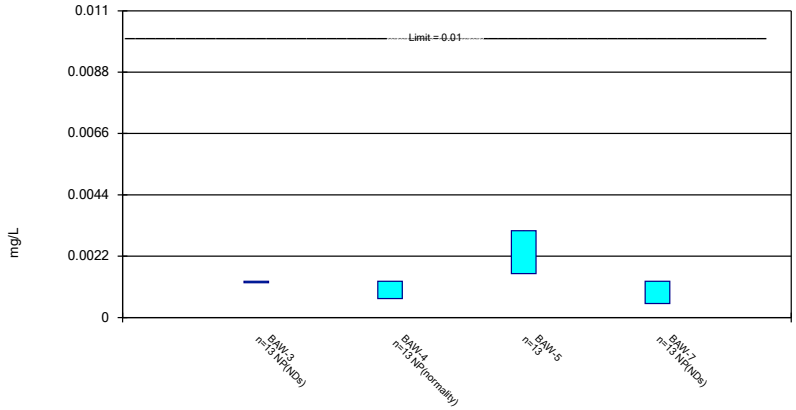
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

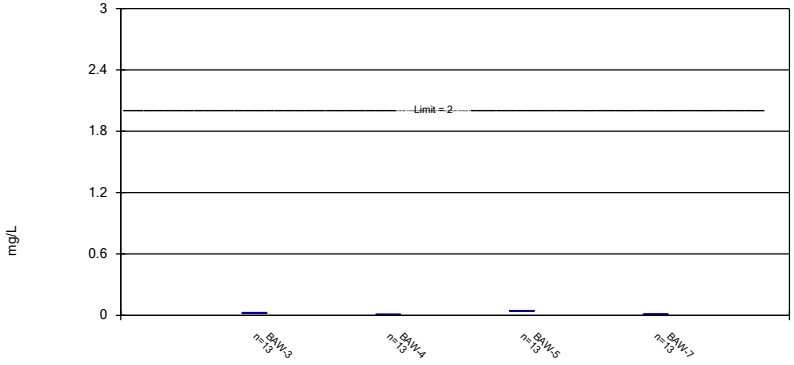
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric Confidence Interval

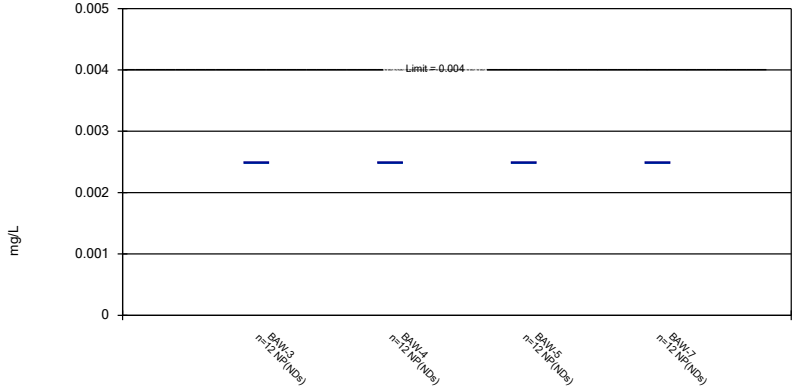
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

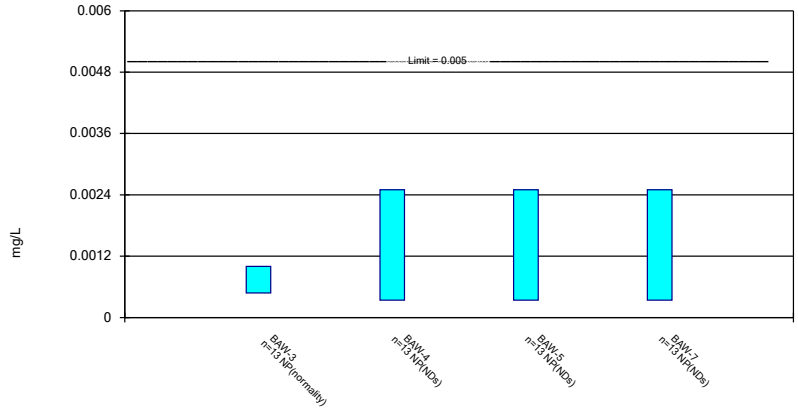
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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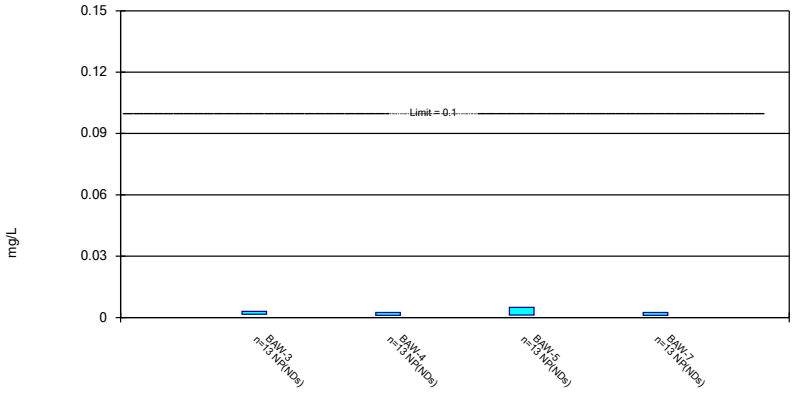
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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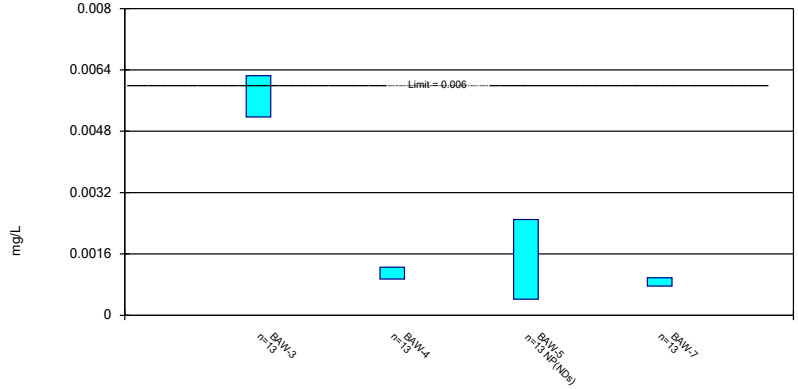
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

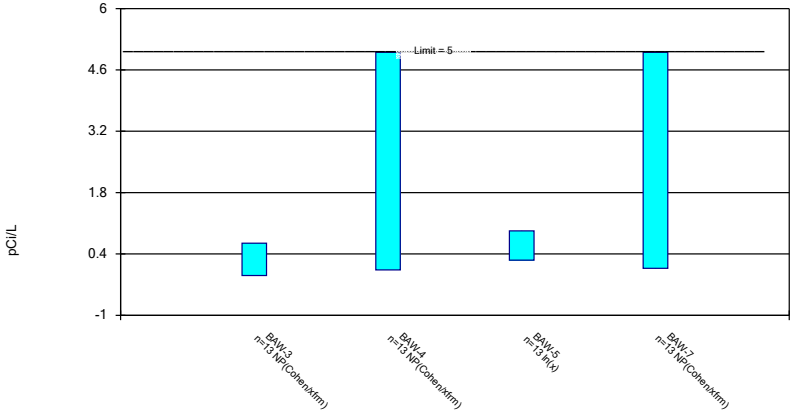


Constituent: Cobalt Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.14 Sanitas software licensed to Southern Company. UG

Parametric and Non-Parametric (NP) Confidence Interval

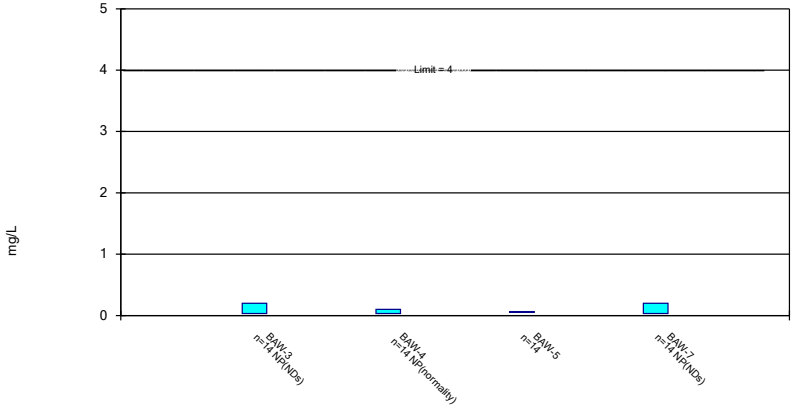
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

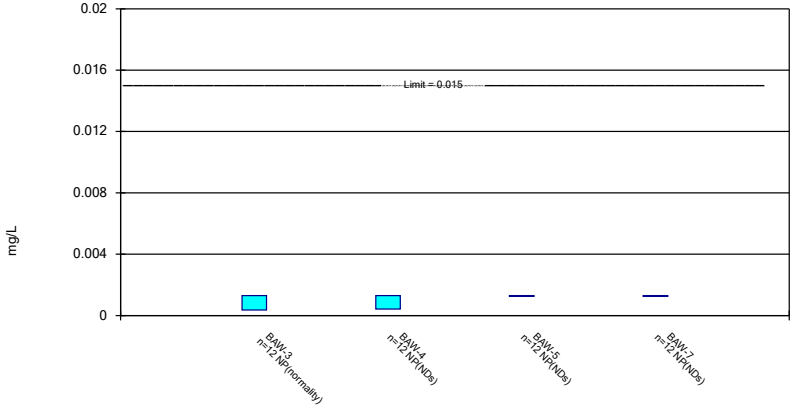
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

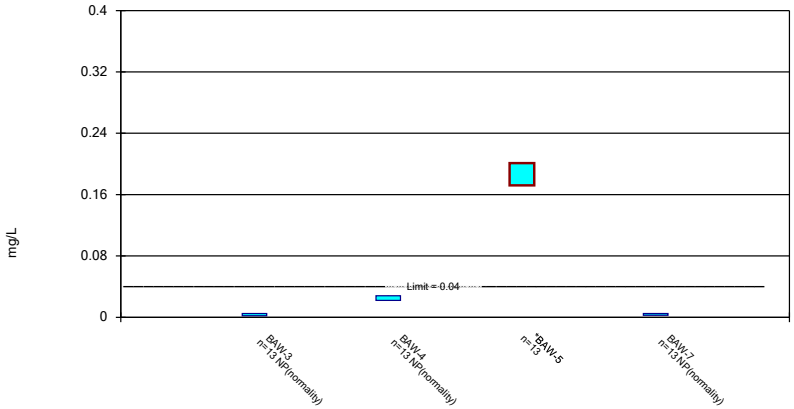
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

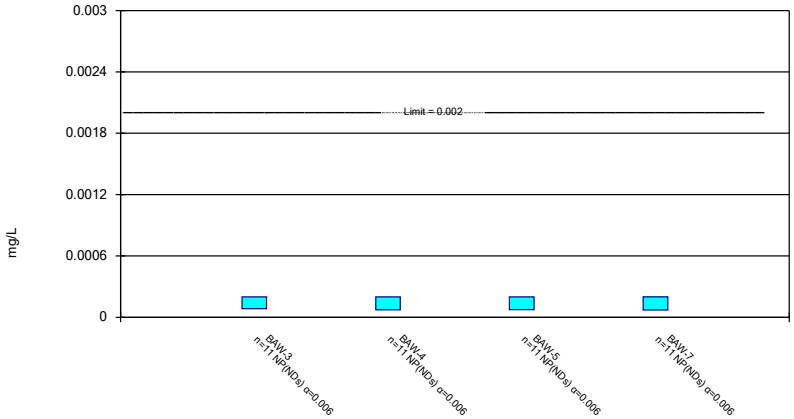
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

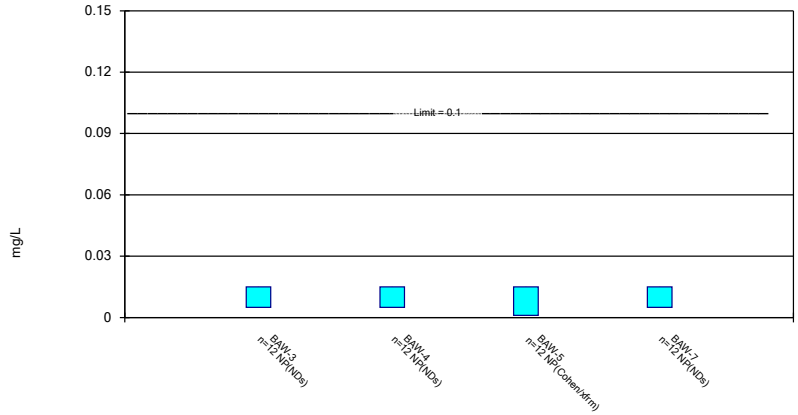
Compliance Limit is not exceeded.



Constituent: Mercury Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

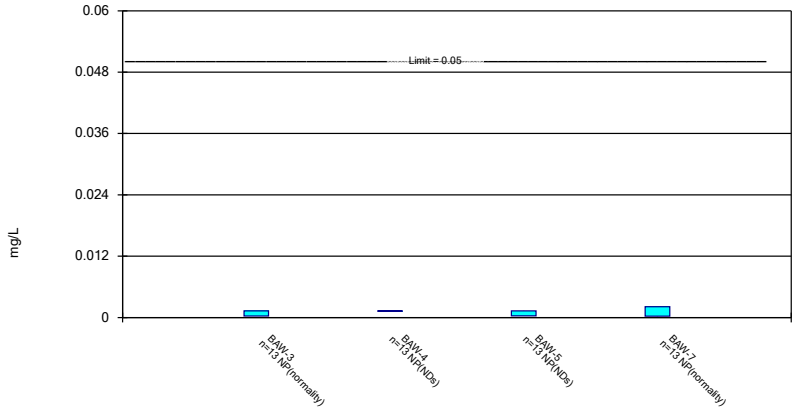
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

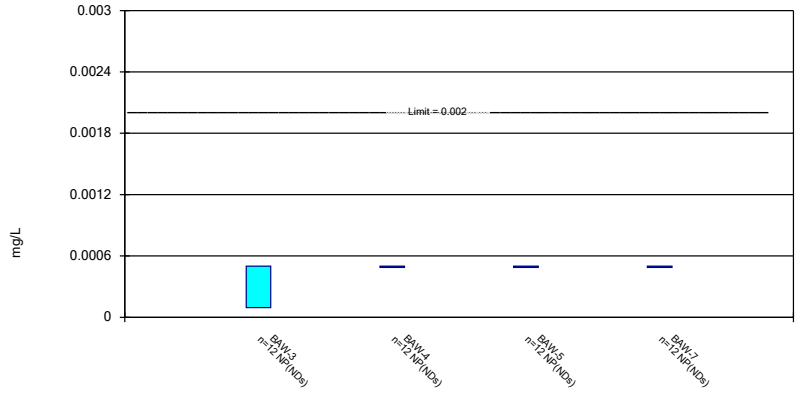
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 6/21/2019 10:21 AM View: Confidence Intervals
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

2nd
Semi-Annual
Monitoring Event

Interwell Prediction Limit - Significant Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 1/2/2020, 8:10 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**BAW-5**	**0.05**	**n/a**	**9/30/2019**	**0.14**	**Yes**	**30**	**100**	**n/a**	**0.001957**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**BAW-4**	**2.8**	**n/a**	**9/30/2019**	**3.08**	**Yes**	**29**	**3.448**	**n/a**	**0.002113**	**NP Inter (normality) ...**
Calcium (mg/L)	**BAW-5**	**2.8**	**n/a**	**9/30/2019**	**13.6**	**Yes**	**29**	**3.448**	**n/a**	**0.002113**	**NP Inter (normality) ...**
Chloride (mg/L)	**BAW-5**	**7.919**	**n/a**	**9/30/2019**	**8.59**	**Yes**	**30**	**0**	**sqrt(x)**	**0.00188**	**Param Inter 1 of 2**
pH (SU)	**BAW-5**	**5.473**	**4.507**	**9/30/2019**	**6.06**	**Yes**	**30**	**0**	**No**	**0.000...**	**Param Inter 1 of 2**

Interwell Prediction Limit - All Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 1/2/2020, 8:10 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	BAW-3	0.05	n/a	9/30/2019	0.05ND	No	30	100	n/a	0.001957	NP Inter (NDs) 1 of 2
Boron (mg/L)	BAW-4	0.05	n/a	9/30/2019	0.05ND	No	30	100	n/a	0.001957	NP Inter (NDs) 1 of 2
Boron (mg/L)	**BAW-5**	**0.05**	**n/a**	**9/30/2019**	**0.14**	**Yes**	**30**	**100**	**n/a**	**0.001957**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	BAW-7	0.05	n/a	9/27/2019	0.05ND	No	30	100	n/a	0.001957	NP Inter (NDs) 1 of 2
Calcium (mg/L)	BAW-3	2.8	n/a	9/30/2019	0.826	No	29	3.448	n/a	0.002113	NP Inter (normality) ...
Calcium (mg/L)	**BAW-4**	**2.8**	**n/a**	**9/30/2019**	**3.08**	**Yes**	**29**	**3.448**	**n/a**	**0.002113**	**NP Inter (normality) ...**
Calcium (mg/L)	**BAW-5**	**2.8**	**n/a**	**9/30/2019**	**13.6**	**Yes**	**29**	**3.448**	**n/a**	**0.002113**	**NP Inter (normality) ...**
Calcium (mg/L)	BAW-7	2.8	n/a	9/27/2019	0.598	No	29	3.448	n/a	0.002113	NP Inter (normality) ...
Chloride (mg/L)	BAW-3	7.919	n/a	9/30/2019	7.07	No	30	0	sqrt(x)	0.00188	Param Inter 1 of 2
Chloride (mg/L)	BAW-4	7.919	n/a	9/30/2019	5.45	No	30	0	sqrt(x)	0.00188	Param Inter 1 of 2
Chloride (mg/L)	**BAW-5**	**7.919**	**n/a**	**9/30/2019**	**8.59**	**Yes**	**30**	**0**	**sqrt(x)**	**0.00188**	**Param Inter 1 of 2**
Chloride (mg/L)	BAW-7	7.919	n/a	9/27/2019	5.02	No	30	0	sqrt(x)	0.00188	Param Inter 1 of 2
Fluoride (mg/L)	BAW-3	0.1	n/a	9/30/2019	0.1ND	No	30	96.67	n/a	0.001957	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	BAW-4	0.1	n/a	9/30/2019	0.1ND	No	30	96.67	n/a	0.001957	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	BAW-5	0.1	n/a	9/30/2019	0.045	No	30	96.67	n/a	0.001957	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	BAW-7	0.1	n/a	9/27/2019	0.1ND	No	30	96.67	n/a	0.001957	NP Inter (NDs) 1 of 2
pH (SU)	BAW-3	5.473	4.507	9/30/2019	4.67	No	30	0	No	0.000...	Param Inter 1 of 2
pH (SU)	BAW-4	5.473	4.507	9/30/2019	5.21	No	30	0	No	0.000...	Param Inter 1 of 2
pH (SU)	**BAW-5**	**5.473**	**4.507**	**9/30/2019**	**6.06**	**Yes**	**30**	**0**	**No**	**0.000...**	**Param Inter 1 of 2**
pH (SU)	BAW-7	5.473	4.507	9/27/2019	4.97	No	30	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	BAW-3	5	n/a	9/30/2019	1.64	No	30	63.33	n/a	0.001957	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	BAW-4	5	n/a	9/30/2019	2.34	No	30	63.33	n/a	0.001957	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	BAW-5	5	n/a	9/30/2019	2.82	No	30	63.33	n/a	0.001957	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	BAW-7	5	n/a	9/27/2019	1.22	No	30	63.33	n/a	0.001957	NP Inter (NDs) 1 of 2
Total Dissolved Solids...	BAW-3	57.54	n/a	9/30/2019	5ND	No	30	6.667	sqrt(x)	0.00188	Param Inter 1 of 2
Total Dissolved Solids...	BAW-4	57.54	n/a	9/30/2019	5ND	No	30	6.667	sqrt(x)	0.00188	Param Inter 1 of 2
Total Dissolved Solids...	BAW-5	57.54	n/a	9/30/2019	55	No	30	6.667	sqrt(x)	0.00188	Param Inter 1 of 2
Total Dissolved Solids...	BAW-7	57.54	n/a	9/27/2019	5ND	No	30	6.667	sqrt(x)	0.00188	Param Inter 1 of 2

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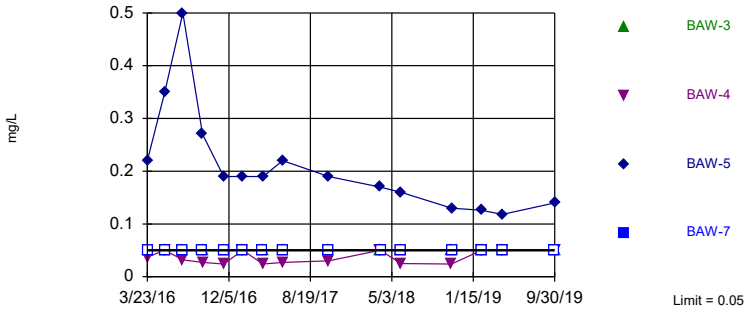
Hollow symbols indicate censored values.

Exceeds Limit: BAW-5

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.01555. Individual comparison alpha = 0.001957 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

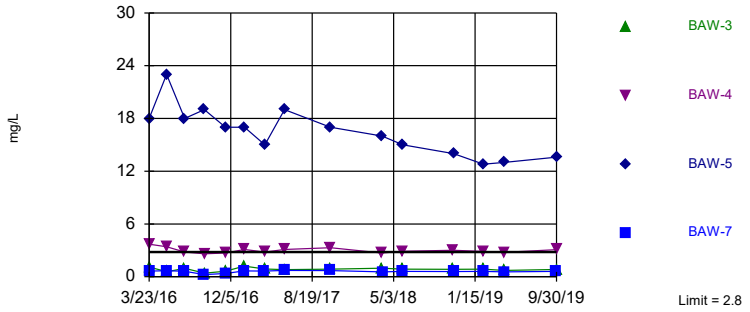
Constituent: Boron Analysis Run 1/2/2020 8:08 AM View: Interwell PL
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.24 Sanitas software licensed to Southern Company. UG

Exceeds Limit: BAW-4, BAW-5

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 29 background values. 3.448% NDs. Annual per-constituent alpha = 0.01678. Individual comparison alpha = 0.002113 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

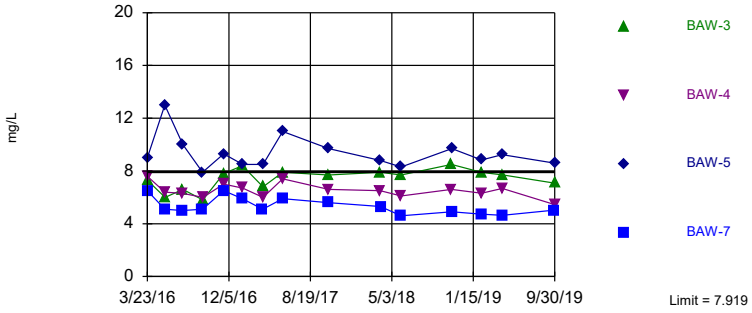
Constituent: Calcium Analysis Run 1/2/2020 8:08 AM View: Interwell PL
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.24 Sanitas software licensed to Southern Company. UG

Exceeds Limit: BAW-5

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=2.391, Std. Dev.=0.2249, n=30. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9146, critical = 0.9. Kappa = 1.88 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.00188. Comparing 4 points to limit.

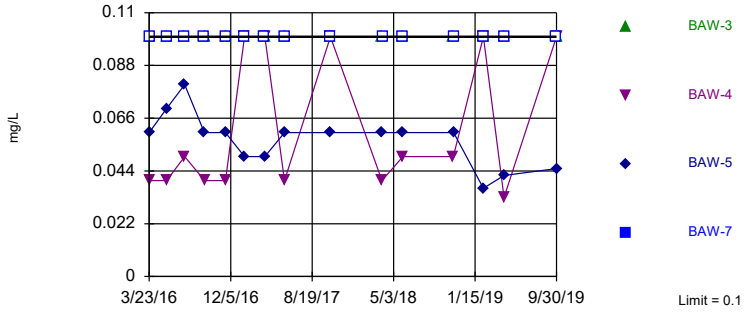
Constituent: Chloride Analysis Run 1/2/2020 8:08 AM View: Interwell PL
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.24 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Annual per-constituent alpha = 0.01555. Individual comparison alpha = 0.001957 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Fluoride Analysis Run 1/2/2020 8:08 AM View: Interwell PL
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-3	BAW-4	BAW-5	BAW-2 (bg)	BAW-7	BAW-2A (bg)
3/23/2016	<0.05	<0.05	0.037 (J)	0.22	<0.05	<0.05	
5/17/2016	<0.05		<0.05	0.35		<0.05	
5/18/2016		<0.05			<0.05		
7/12/2016	<0.05					<0.05	
7/13/2016		<0.05	0.032 (J)	0.5	<0.05		
9/13/2016	<0.05			0.27		<0.05	
9/14/2016		<0.05	0.027 (J)		<0.05		
11/19/2016	<0.05	<0.05	0.024 (J)	0.19	<0.05	<0.05	
1/17/2017	<0.05	<0.05			<0.05	<0.05	
1/18/2017			<0.05	0.19			
3/22/2017	<0.05					<0.05	
3/23/2017		<0.05	0.024 (J)	0.19	<0.05		
5/24/2017	<0.05	<0.05	0.027 (J)	0.22	<0.05	<0.05	
10/16/2017	<0.05	<0.05	0.03 (J)	0.19	<0.05	<0.05	
3/28/2018	<0.05	<0.05	<0.05	0.17			<0.05
3/29/2018						<0.05	
6/2/2018	<0.05	<0.05	0.025 (J)	0.16		<0.05	<0.05
11/8/2018	<0.05	<0.05	0.024 (J)				
11/9/2018				0.13		<0.05	<0.05
2/11/2019	<0.05		<0.05	0.126			
2/12/2019		<0.05				<0.05	<0.05
4/17/2019	<0.05	<0.05	<0.05	0.118			<0.05
4/18/2019						<0.05	
9/27/2019	<0.05					<0.05	<0.05
9/30/2019		<0.05	<0.05	0.14			

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-7	BAW-5	BAW-3	BAW-4	BAW-2 (bg)	BAW-2A (bg)
3/23/2016	<0.25	0.65	18	1.1	3.7		
5/17/2016	0.84	0.68	23		3.4		
5/18/2016				0.56		1.3	
7/12/2016	0.79	0.62					
7/13/2016			18	0.95	2.8	1.1	
9/13/2016	0.42	0.25	19				
9/14/2016				0.4	2.6	1.1	
11/19/2016	1.2	0.36	17	0.62	2.7	1	
1/17/2017	1.4	0.66		1.2		0.87	
1/18/2017			17		3.1		
3/22/2017	0.95	0.65					
3/23/2017			15	0.87	2.8	0.74	
5/24/2017	1.3	0.72	19	0.81	3.1	0.84	
10/16/2017	0.93	0.7	17	0.86	3.3	0.76	
3/28/2018	1		16	0.97	2.7		2.8
3/29/2018		0.55					
6/2/2018	0.93	0.6	15	0.86	2.9		0.71
11/8/2018	1			0.84	3		
11/9/2018		0.59	14				0.61
2/11/2019	1		12.8		2.88		
2/12/2019		0.608		0.856			0.757
4/17/2019	0.893		13	0.711	2.77		0.755
4/18/2019		0.55					
9/27/2019	0.8	0.598					0.663
9/30/2019			13.6	0.826	3.08		

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-2 (bg)	BAW-2A (bg)	BAW-3	BAW-4	BAW-5	BAW-7
3/23/2016	6.5	5.1		7.3	7.6	9	6.5
5/17/2016	4.9				6.4	13	5.1
5/18/2016		4.2		6			
7/12/2016	5.3						5
7/13/2016		4.7		6.6	6.3	10	
9/13/2016	4.8 (F1)					7.9	5.1
9/14/2016		4.5		5.8	6		
11/19/2016	7.1	6.1		7.8	7	9.3	6.5
1/17/2017	5.8	5.4		8.4			5.9
1/18/2017					6.7	8.5	
3/22/2017	4.9						5.1
3/23/2017		5.1		6.8	6	8.5	
5/24/2017	5.9	5.5		7.9	7.4	11	5.9
10/16/2017	5.7	6.1		7.7	6.6	9.7	5.6
3/28/2018	5.7		6.7	7.9	6.5	8.8	
3/29/2018							5.3
6/2/2018	4.7		5.8	7.7	6.1	8.3	4.6
11/8/2018	5.6			8.5	6.6		
11/9/2018			7.2			9.7	4.9
2/11/2019	4.84				6.31	8.84	
2/12/2019			8.4	7.89			4.72
4/17/2019	4.99		8.03	7.71	6.68	9.24	
4/18/2019							4.64
9/27/2019	5.08		8.37				5.02
9/30/2019				7.07	5.45	8.59	

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

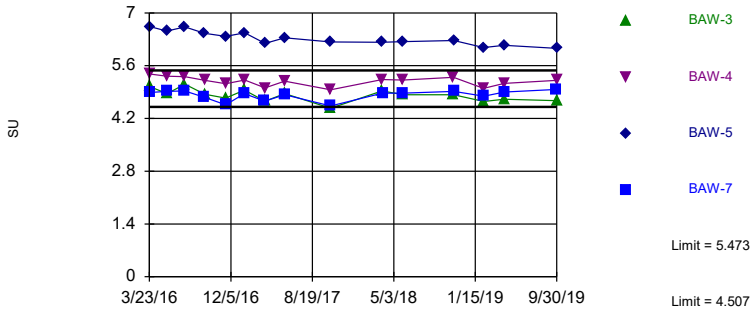
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-3	BAW-4	BAW-5	BAW-2 (bg)	BAW-7	BAW-2A (bg)
3/23/2016	<0.1	<0.1	0.04 (J)	0.06 (J)	<0.1	<0.1	
5/17/2016	<0.1		0.04 (J)	0.07 (J)		<0.1	
5/18/2016		<0.1			<0.1		
7/12/2016	<0.1					<0.1	
7/13/2016		<0.1	0.05 (J)	0.08 (J)	<0.1		
9/13/2016	<0.1			0.06 (J)		<0.1	
9/14/2016		<0.1	0.04 (J)		<0.1		
11/19/2016	<0.1	<0.1	0.04 (J)	0.06 (J)	<0.1	<0.1	
1/17/2017	<0.1	<0.1			<0.1	<0.1	
1/18/2017			<0.1	0.05 (J)			
3/22/2017	<0.1					<0.1	
3/23/2017		<0.1	<0.1	0.05 (J)	<0.1		
5/24/2017	<0.1	<0.1	0.04 (J)	0.06 (J)	<0.1	<0.1 (D)	
10/16/2017	<0.1	<0.1	<0.1	0.06 (J)	<0.1	<0.1	
3/28/2018	<0.1	<0.1	0.04 (J)	0.06 (J)			<0.1
3/29/2018						<0.1	
6/2/2018	<0.1	<0.1	0.05 (J)	0.06 (J)		<0.1	<0.1
11/8/2018	<0.1	<0.1	0.05 (J)				
11/9/2018				0.06 (J)		<0.1	<0.1
2/11/2019	<0.1		<0.1	0.0368 (J)			
2/12/2019		<0.1				<0.1	<0.1
4/17/2019	<0.1	<0.1	0.033 (J)	0.0421 (J)			<0.1
4/18/2019						<0.1	
9/27/2019	<0.1					<0.1	0.0313 (J)
9/30/2019		<0.1	<0.1	0.045 (J)			

Exceeds Limits: BAW-5

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=4.99, Std. Dev.=0.2569, n=30. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9265, critical = 0.9. Kappa = 1.88 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009398. Comparing 4 points to limit.

Constituent: pH Analysis Run 1/2/2020 8:08 AM View: Interwell PL

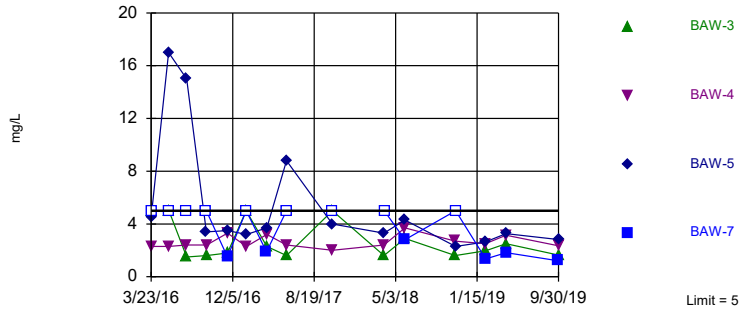
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 63.33% NDs. Annual per-constituent alpha = 0.01555. Individual comparison alpha = 0.001957 (1 of 2). Comparing 4 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Sulfate Analysis Run 1/2/2020 8:08 AM View: Interwell PL

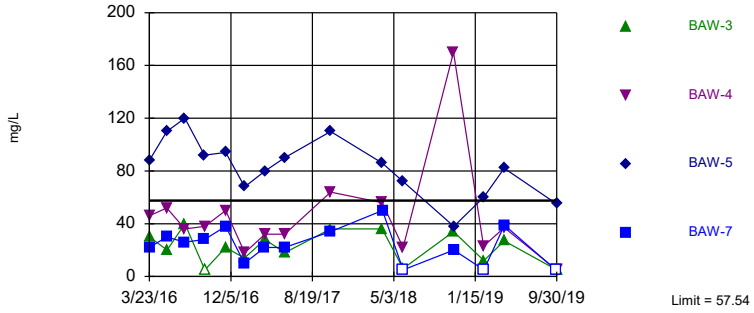
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=4.648, Std. Dev.=1.562, n=30, 6.667% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9117, critical = 0.9. Kappa = 1.88 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.00188. Comparing 4 points to limit.

Constituent: Total Dissolved Solids Analysis Run 1/2/2020 8:08 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Prediction Limit

Constituent: pH (SU) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-2 (bg)	BAW-2A (bg)	BAW-3	BAW-4	BAW-5	BAW-7
3/23/2016	5.12 (D)	5.52 (D)		5.05 (D)	5.38 (D)	6.64 (D)	4.89 (D)
5/17/2016	5.23 (D)				5.32 (D)	6.52 (D)	4.92 (D)
5/18/2016		5.24 (D)		4.86 (D)			
7/12/2016	5.77 (D)						4.93 (D)
7/13/2016		5.17 (D)		5.11 (D)	5.31 (D)	6.63 (D)	
9/13/2016	4.98 (D)					6.46 (D)	4.76 (D)
9/14/2016		5.04 (D)		4.84 (D)	5.21 (D)		
11/19/2016	4.82 (D)	4.88 (D)		4.74 (D)	5.12 (D)	6.38 (D)	4.56 (D)
1/17/2017	5.04 (D)	5.04 (D)		4.95 (D)			4.86 (D)
1/18/2017					5.22 (D)	6.47 (D)	
3/22/2017	4.73 (D)						4.66 (D)
3/23/2017		4.66 (D)		4.66 (D)	5.01 (D)	6.19 (D)	
5/24/2017	5.01 (D)	4.93 (D)		4.86 (D)	5.19 (D)	6.34 (D)	4.83 (D)
10/16/2017	4.59	4.65		4.47	4.96	6.23	4.53
3/28/2018	4.87		5.39	4.93	5.23	6.22	
3/29/2018							4.87
6/2/2018	4.92		5.06	4.83	5.22	6.24	4.87
11/8/2018	5			4.83	5.29		
11/9/2018			4.92			6.27	4.92
2/11/2019	4.7				5	6.08	
2/12/2019			4.86	4.65			4.79
4/17/2019	4.9		4.79	4.71	5.13	6.14	
4/18/2019							4.9
9/27/2019	5		4.88				4.97
9/30/2019				4.67	5.21	6.06	

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-3	BAW-4	BAW-5	BAW-2 (bg)	BAW-7	BAW-2A (bg)
3/23/2016	<5	<5	2.3 (J)	4.5 (J)	<5	<5	
5/17/2016	<5		2.3 (J)	17		<5	
5/18/2016		<5			<5		
7/12/2016	<5					<5	
7/13/2016		1.5 (J)	2.4 (J)	15	<5		
9/13/2016	<5			3.4 (J)		<5	
9/14/2016		1.6 (J)	2.4 (J)		<5		
11/19/2016	<5	1.8 (J)	3.3 (J)	3.5 (J)	<5	1.5 (J)	
1/17/2017	<5	<5			<5	<5	
1/18/2017			2.3 (J)	3.2 (J)			
3/22/2017	<5					1.9 (J)	
3/23/2017		2.3 (J)	3.2 (J)	3.7 (J)	1.8 (J)		
5/24/2017	<5	1.6 (J)	2.4 (J)	8.8	1.5 (J)	<5	
10/16/2017	<5	<5	2 (J)	4 (J)	<5	<5	
3/28/2018	<5	1.6 (J)	2.4 (J)	3.3 (J)			1.7 (J)
3/29/2018						<5	
6/2/2018	1.9 (J)	2.9 (J)	3.7 (J)	4.3 (J)		2.8 (J)	3 (J)
11/8/2018	<5	1.6 (J)	2.7 (J)				
11/9/2018				2.3 (J)		<5	<5
2/11/2019	0.774 (J)		2.5	2.64			
2/12/2019		1.97				1.35	1.97
4/17/2019	1.43	2.5	3.15	3.27			2.82
4/18/2019						1.82	
9/27/2019	1.03					1.22	2.19
9/30/2019		1.64	2.34	2.82			

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 1/2/2020 8:10 AM View: Interwell PL

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

	BAW-1 (bg)	BAW-2 (bg)	BAW-2A (bg)	BAW-3	BAW-4	BAW-5	BAW-7
3/23/2016	20	30		30	46	88	22
5/17/2016	24				52	110	30
5/18/2016		20		20			
7/12/2016	24						26
7/13/2016		40		40	36	120	
9/13/2016	18					92	28
9/14/2016		10		<10	38		
11/19/2016	20	28		22	50	94	38
1/17/2017	<10	14		14			10
1/18/2017					18	68	
3/22/2017	12						22
3/23/2017		16		28	32	80	
5/24/2017	16 (D)	12		18	32	90	22
10/16/2017	58	50		36	64	110	34
3/28/2018	18		30	36	56	86	
3/29/2018							50
6/2/2018	6		26	6	22	72	<10
11/8/2018	12			34	170		
11/9/2018			94			38	20
2/11/2019	<10				23	60	
2/12/2019			22	12			<10
4/17/2019	16		22	27	37	82	
4/18/2019							39
9/27/2019	26		25				<10
9/30/2019				<10	<10	55	

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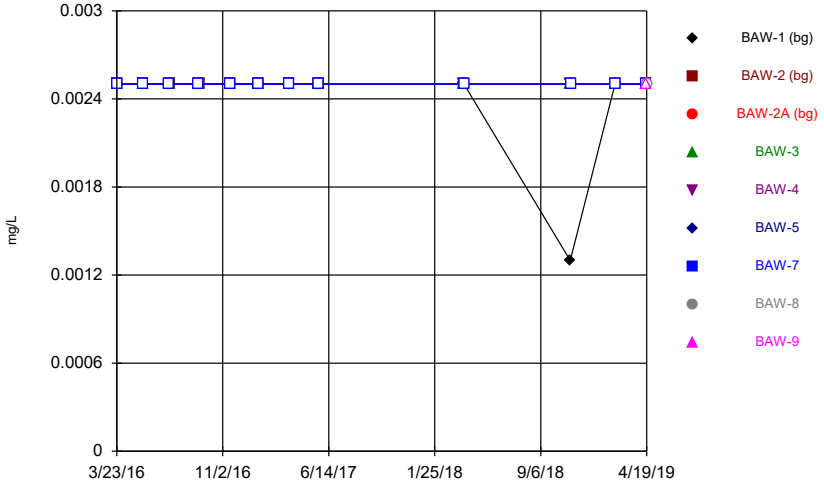
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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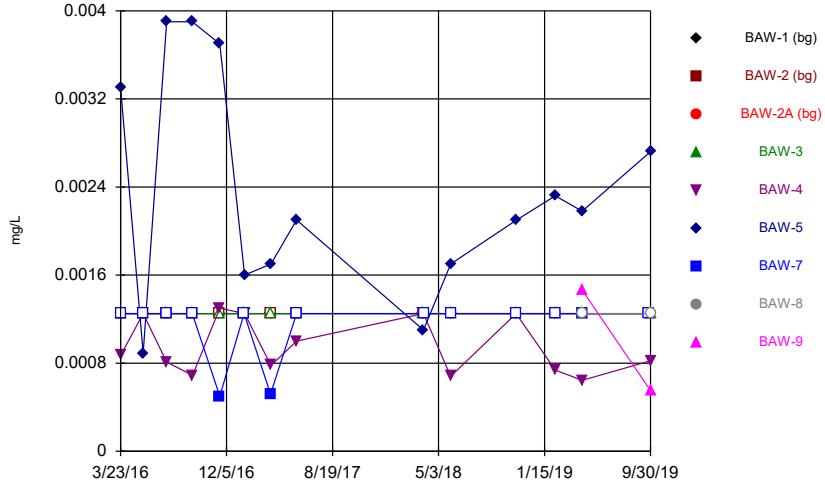
Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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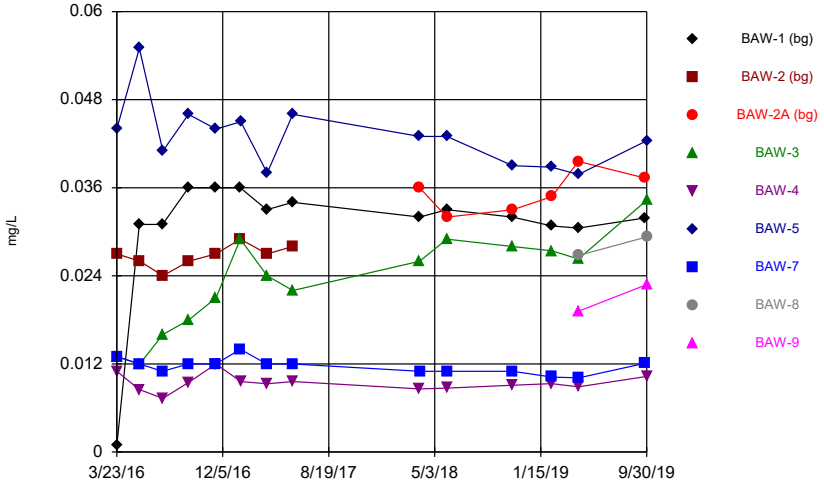
Time Series



Constituent: Barium Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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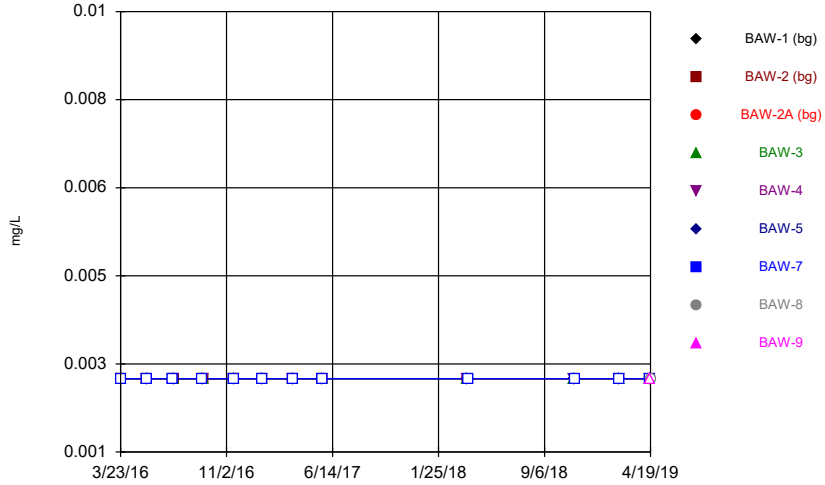
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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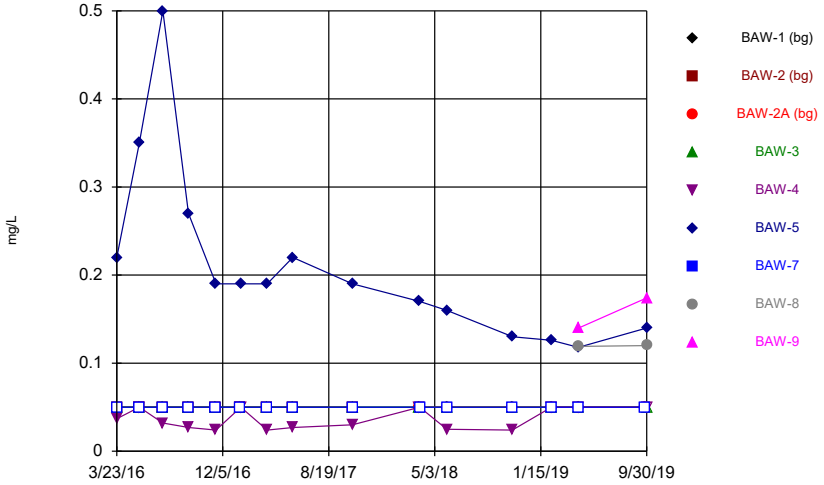
Hollow symbols indicate censored values.

Time Series



Constituent: Boron Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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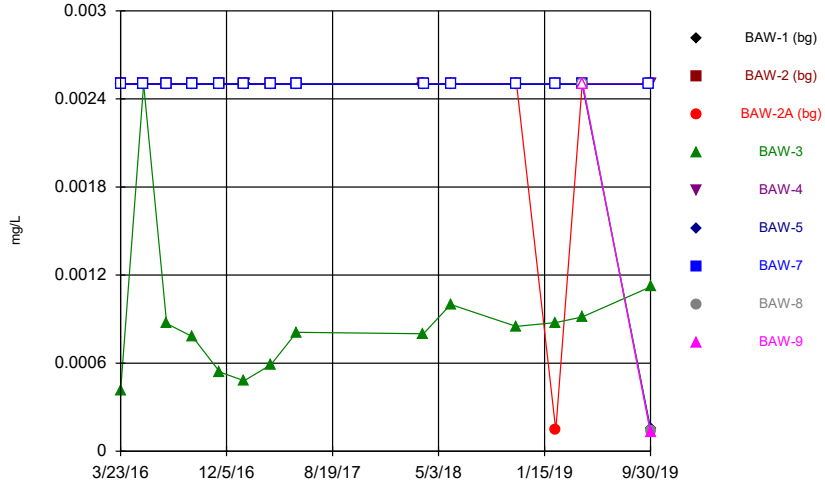
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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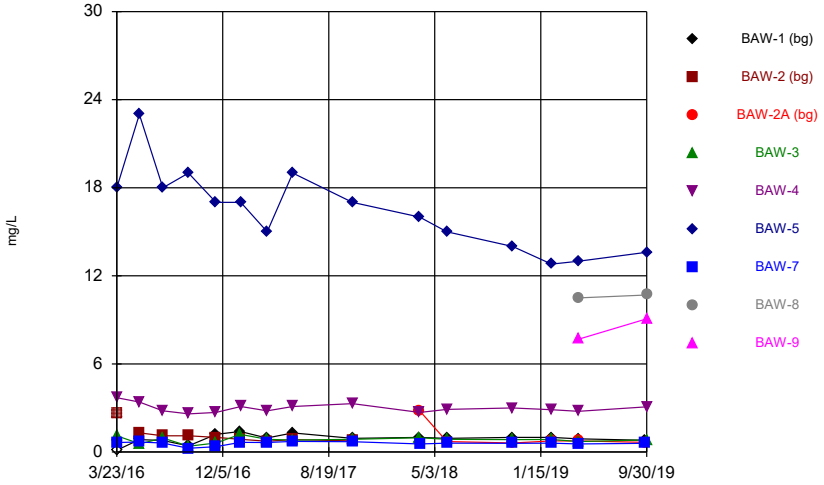
Hollow symbols indicate censored values.

Time Series



Constituent: Calcium Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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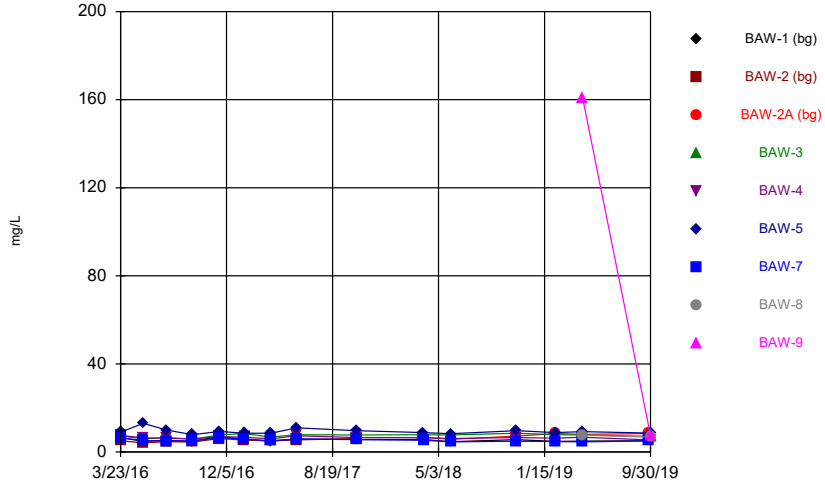
Time Series



Constituent: Chloride Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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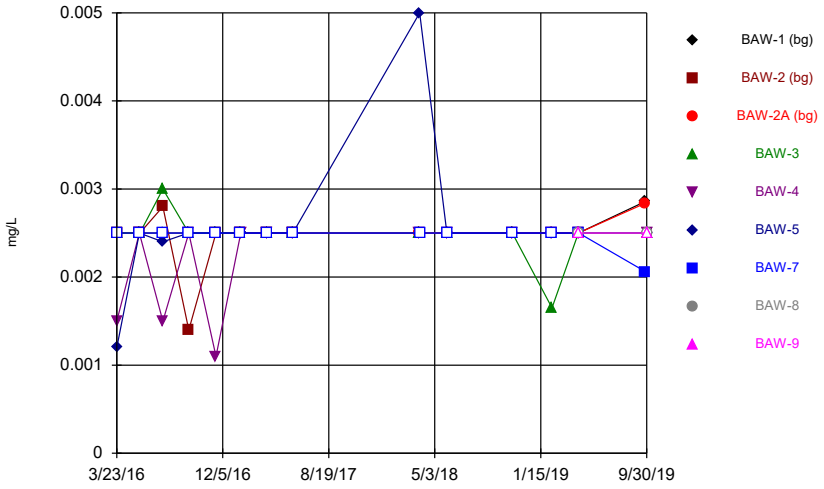
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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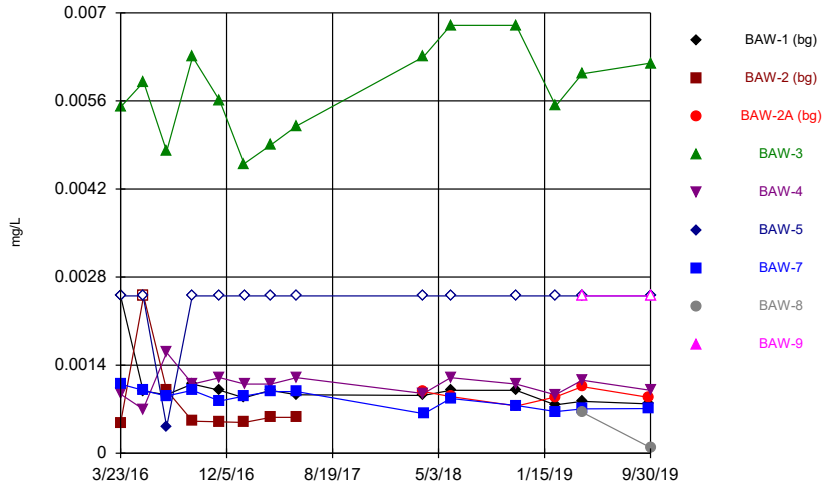
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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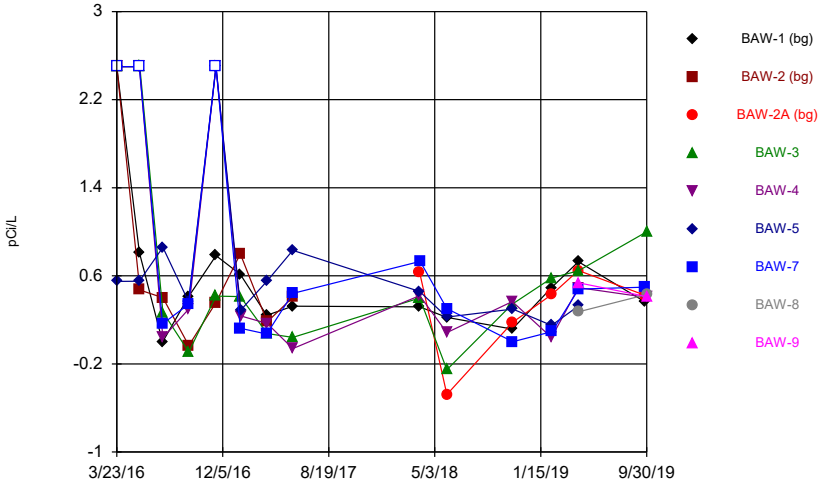
Hollow symbols indicate censored values.

Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 1/2/2020 8:11 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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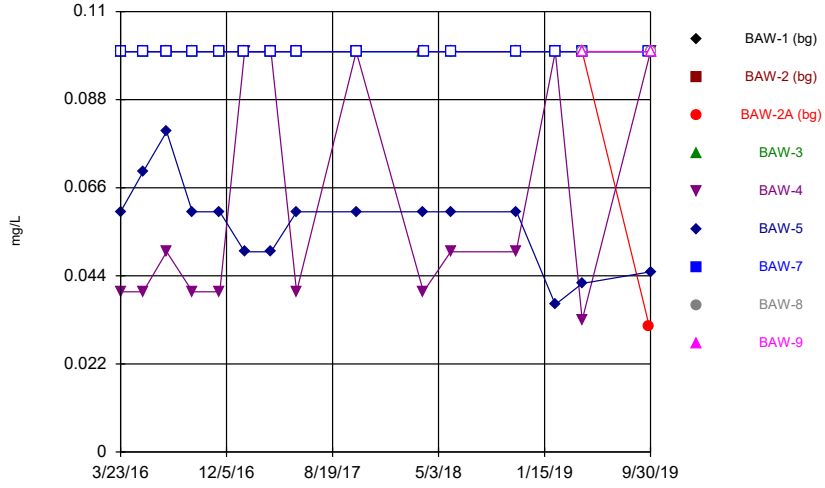
Time Series



Constituent: Fluoride Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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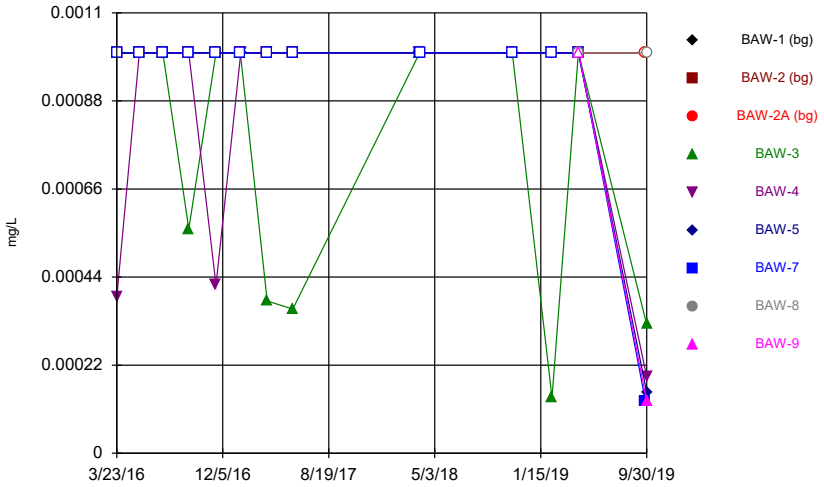
Hollow symbols indicate censored values.

Time Series



Constituent: Lead Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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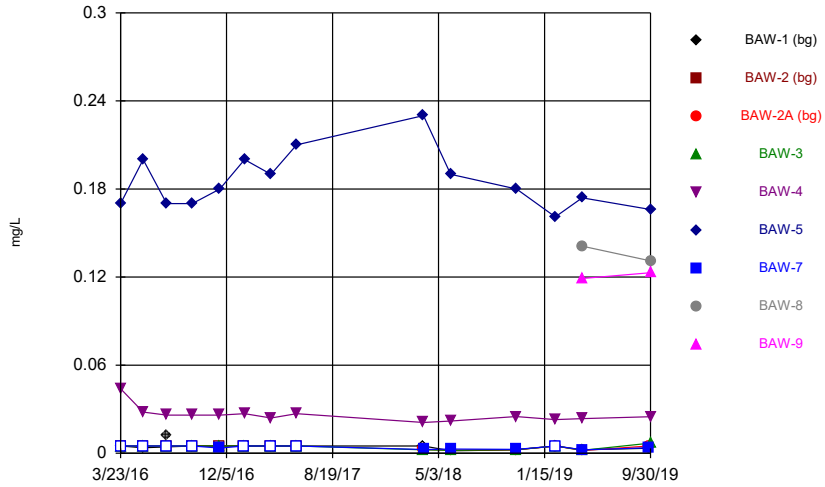
Hollow symbols indicate censored values.

Time Series



Constituent: Lithium Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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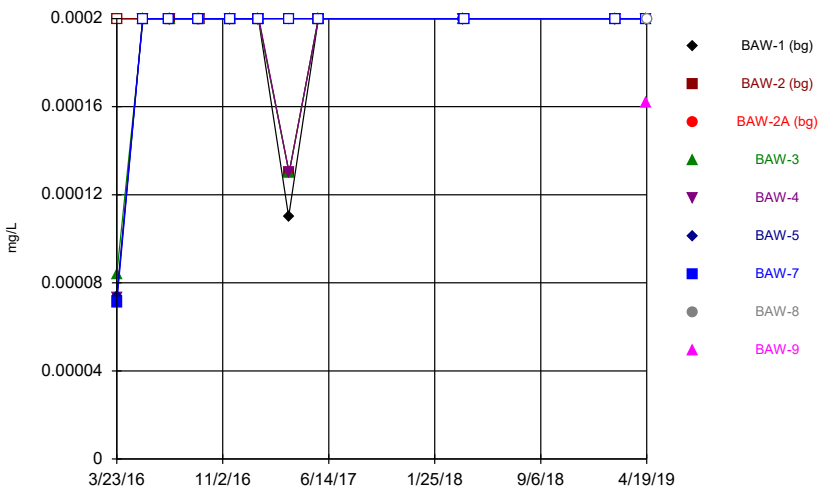
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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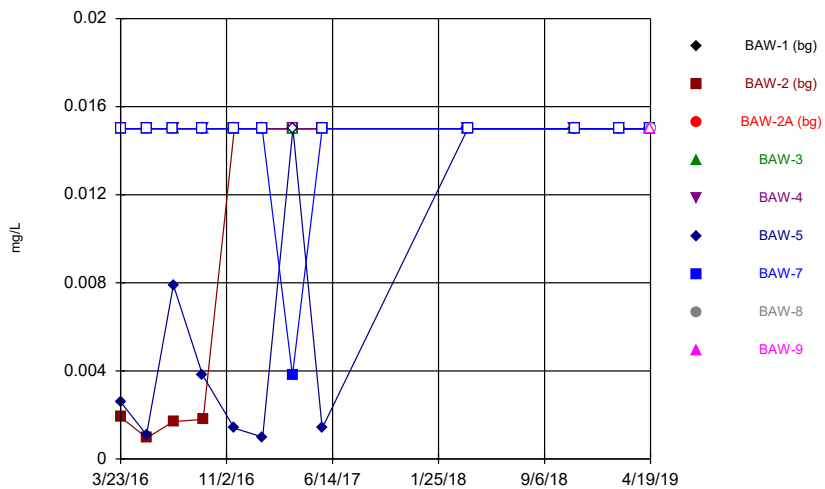
Hollow symbols indicate censored values.

Time Series



Constituent: Molybdenum Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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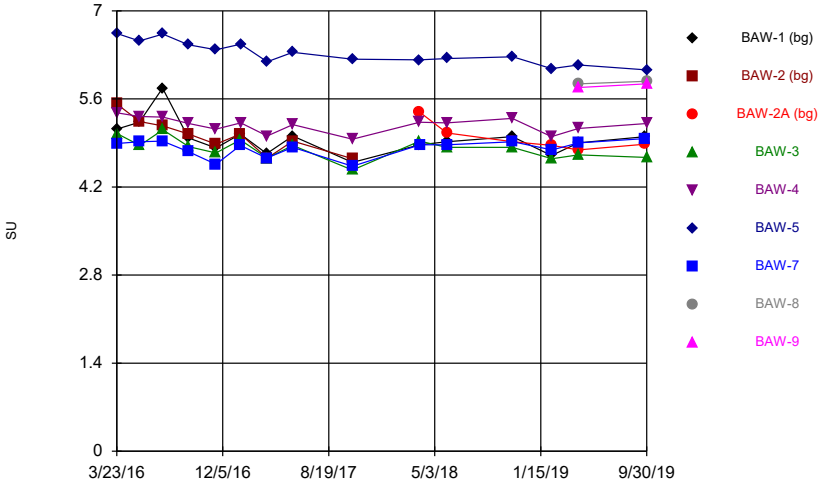
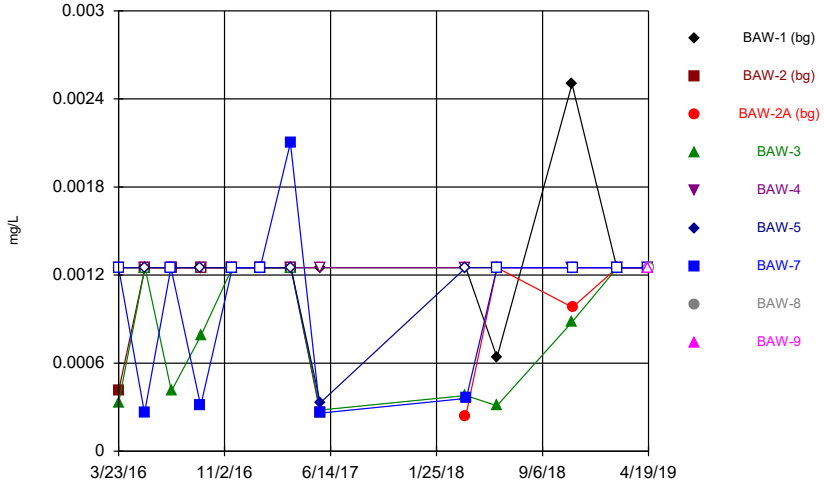
Time Series



Constituent: pH Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.24 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

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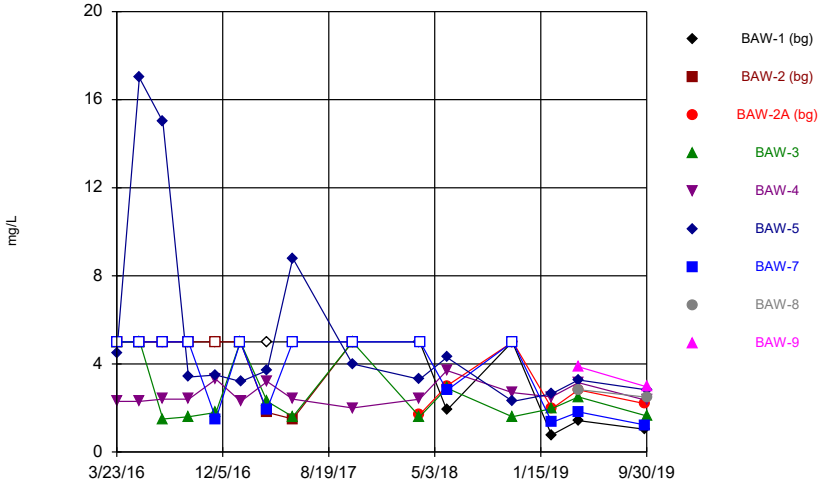
Hollow symbols indicate censored values.

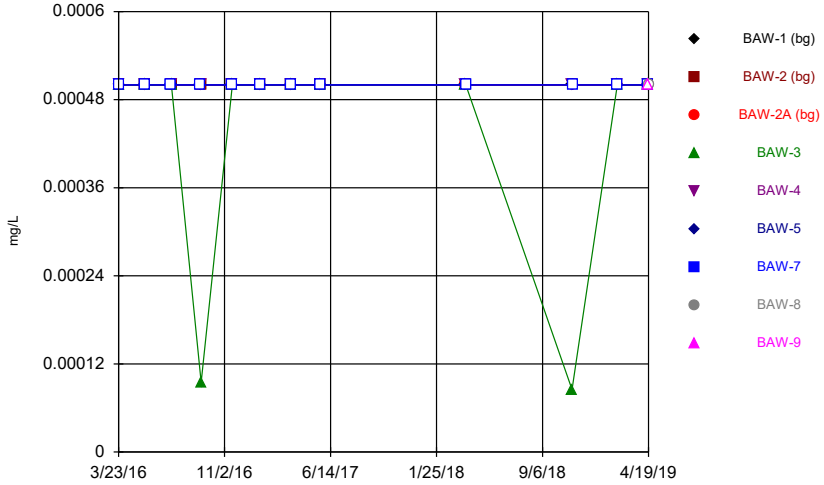
Time Series



Constituent: Sulfate Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Sanitas™ v.9.6.24 Sanitas software licensed to Southern Company. UG
Hollow symbols indicate censored values.

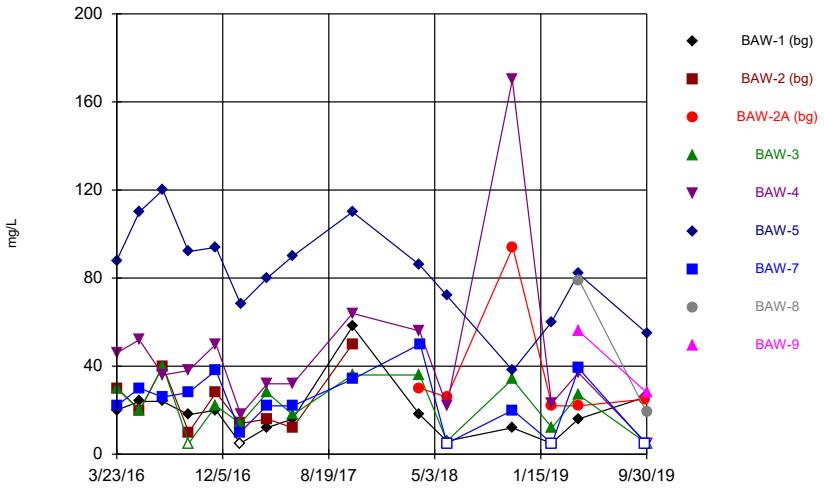
Time Series



Constituent: Thallium Analysis Run 1/2/2020 8:12 AM View: Time Series
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Hollow symbols indicate censored values.

Time Series



Constituent: Total Dissolved Solids Analysis Run 1/2/2020 8:12 AM View: Time Series

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

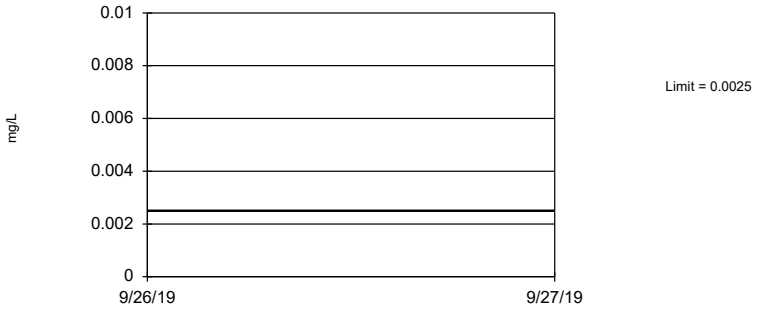
Upper Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 1/2/2020, 8:24 AM

Constituent	Upper Lim.	Lower Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.0025	n/a	24	n/a	n/a	95.83	n/a	n/a	0.292	NP Inter(NDs)
Arsenic (mg/L)	0.00125	n/a	28	n/a	n/a	100	n/a	n/a	0.2378	NP Inter(NDs)
Barium (mg/L)	0.04095	n/a	28	0.0009789	0.0003103	0	None	x^2	0.05	Inter
Beryllium (mg/L)	0.0025	n/a	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)
Cadmium (mg/L)	0.0025	n/a	28	n/a	n/a	96.43	n/a	n/a	0.2378	NP Inter(NDs)
Chromium (mg/L)	0.00286	n/a	28	n/a	n/a	85.71	n/a	n/a	0.2378	NP Inter(NDs)
Cobalt (mg/L)	0.001354	n/a	28	0.0008649	0.0002175	7.143	None	No	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	2.5	n/a	28	n/a	n/a	7.143	n/a	n/a	0.2378	NP Inter(normal...
Fluoride (mg/L)	0.1	n/a	30	n/a	n/a	96.67	n/a	n/a	0.2146	NP Inter(NDs)
Lead (mg/L)	0.001	n/a	26	n/a	n/a	100	n/a	n/a	0.2635	NP Inter(NDs)
Lithium (mg/L)	0.005	n/a	27	n/a	n/a	66.67	n/a	n/a	0.2503	NP Inter(normal...
Mercury (mg/L)	0.0002	n/a	22	n/a	n/a	90.91	n/a	n/a	0.3235	NP Inter(NDs)
Molybdenum (mg/L)	0.015	n/a	24	n/a	n/a	83.33	n/a	n/a	0.292	NP Inter(NDs)
Selenium (mg/L)	0.0025	n/a	26	n/a	n/a	76.92	n/a	n/a	0.2635	NP Inter(NDs)
Thallium (mg/L)	0.0005	n/a	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric



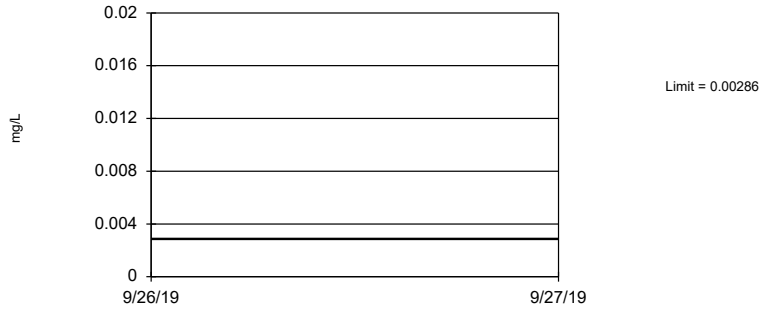
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 28 background values. 96.43% NDs. 84.96% coverage at alpha=0.01; 90.04% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2378.

Constituent: Cadmium Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



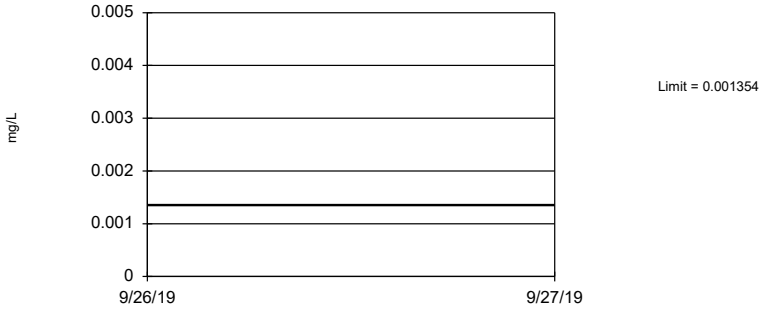
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 28 background values. 85.71% NDs. 84.96% coverage at alpha=0.01; 90.04% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2378.

Constituent: Chromium Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Parametric



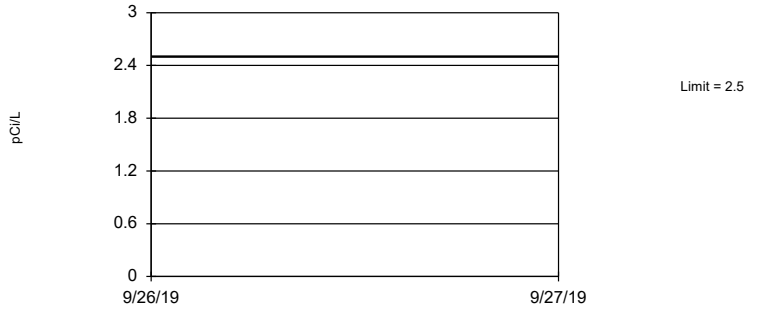
95% coverage. Background Data Summary: Mean=0.0008649, Std. Dev.=0.0002175, n=28, 7.143% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9171, critical = 0.896. Report alpha = 0.05.

Constituent: Cobalt Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



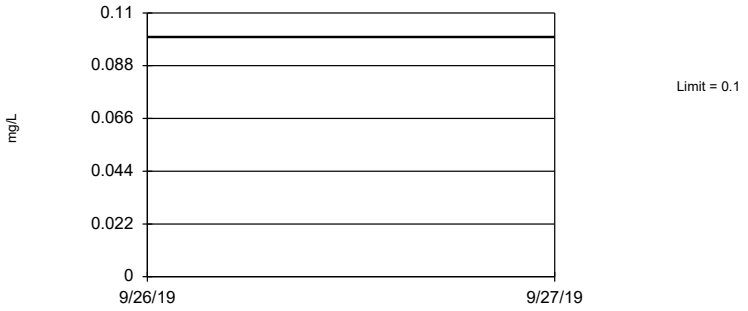
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 28 background values. 7.143% NDs. 84.96% coverage at alpha=0.01; 90.04% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2378.

Constituent: Combined Radium 226 + 228 Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



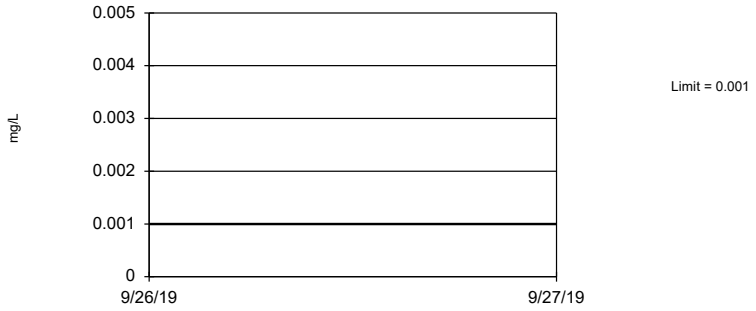
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 30 background values. 96.67% NDs. 85.74% coverage at alpha=0.01; 90.43% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.2146.

Constituent: Fluoride Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Lead Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

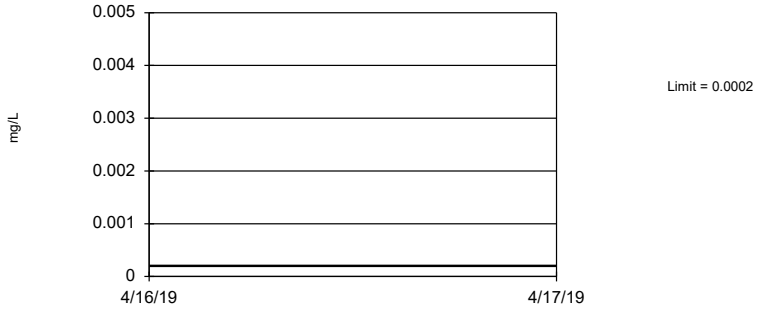
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 66.67% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Lithium Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



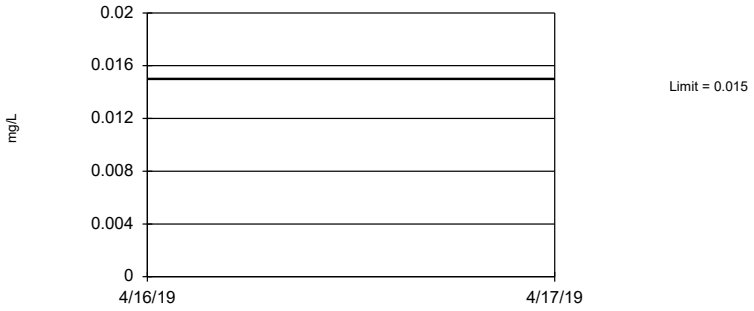
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 22 background values. 90.91% NDs. 81.05% coverage at alpha=0.01; 87.3% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.3235.

Constituent: Mercury Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

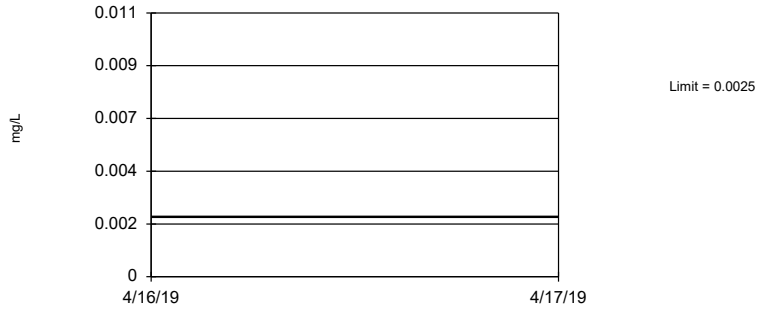


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 24 background values. 83.33% NDs. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Molybdenum Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric

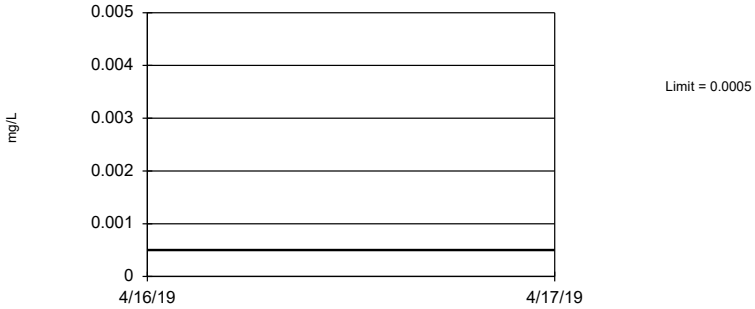


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 26 background values. 76.92% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Selenium Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 82.62% coverage at alpha=0.01; 88.09% coverage at alpha=0.05; 97.07% coverage at alpha=0.5. Report alpha = 0.292.

Constituent: Thallium Analysis Run 1/2/2020 8:16 AM View: UTL's - Appendix IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Upper Tolerance Limits - Appendix IV

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 1/2/2020, 8:24 AM

Constituent	Upper Lim.	Lower Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.0025	n/a	24	n/a	n/a	95.83	n/a	n/a	0.292	NP Inter(NDs)
Arsenic (mg/L)	0.00125	n/a	28	n/a	n/a	100	n/a	n/a	0.2378	NP Inter(NDs)
Barium (mg/L)	0.04095	n/a	28	0.0009789	0.0003103	0	None	x^2	0.05	Inter
Beryllium (mg/L)	0.0025	n/a	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)
Cadmium (mg/L)	0.0025	n/a	28	n/a	n/a	96.43	n/a	n/a	0.2378	NP Inter(NDs)
Chromium (mg/L)	0.00286	n/a	28	n/a	n/a	85.71	n/a	n/a	0.2378	NP Inter(NDs)
Cobalt (mg/L)	0.001354	n/a	28	0.0008649	0.0002175	7.143	None	No	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	2.5	n/a	28	n/a	n/a	7.143	n/a	n/a	0.2378	NP Inter(normal...
Fluoride (mg/L)	0.1	n/a	30	n/a	n/a	96.67	n/a	n/a	0.2146	NP Inter(NDs)
Lead (mg/L)	0.001	n/a	26	n/a	n/a	100	n/a	n/a	0.2635	NP Inter(NDs)
Lithium (mg/L)	0.005	n/a	27	n/a	n/a	66.67	n/a	n/a	0.2503	NP Inter(normal...
Mercury (mg/L)	0.0002	n/a	22	n/a	n/a	90.91	n/a	n/a	0.3235	NP Inter(NDs)
Molybdenum (mg/L)	0.015	n/a	24	n/a	n/a	83.33	n/a	n/a	0.292	NP Inter(NDs)
Selenium (mg/L)	0.0025	n/a	26	n/a	n/a	76.92	n/a	n/a	0.2635	NP Inter(NDs)
Thallium (mg/L)	0.0005	n/a	24	n/a	n/a	100	n/a	n/a	0.292	NP Inter(NDs)

Confidence Intervals - Significant Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 1/2/2020, 8:31 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (mg/L)	**BAW-5**	**0.1989**	**0.1713**	**0.04**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**

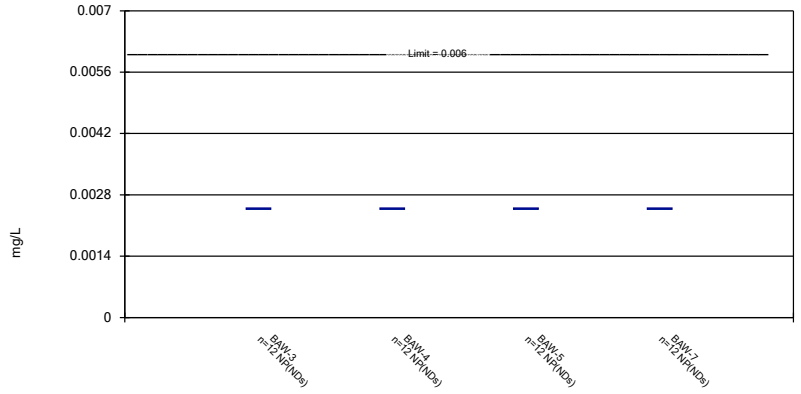
Confidence Intervals - All Results

Plant Daniel Client: Southern Company Data: Bottom Ash CCR Printed 1/2/2020, 8:31 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	BAW-3	0.0025	0.0025	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	BAW-4	0.0025	0.0025	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	BAW-5	0.0025	0.0025	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	BAW-7	0.0025	0.0025	0.006	No	12	100	No	0.01	NP (NDs)
Arsenic (mg/L)	BAW-3	0.00125	0.00125	0.1	No	14	100	No	0.01	NP (NDs)
Arsenic (mg/L)	BAW-4	0.00125	0.00069	0.1	No	14	28.57	No	0.01	NP (normality)
Arsenic (mg/L)	BAW-5	0.003078	0.001666	0.1	No	14	0	No	0.01	Param.
Arsenic (mg/L)	BAW-7	0.00125	0.00052	0.1	No	14	85.71	No	0.01	NP (NDs)
Barium (mg/L)	BAW-3	0.02795	0.01862	2	No	14	0	No	0.01	Param.
Barium (mg/L)	BAW-4	0.01022	0.008598	2	No	14	0	No	0.01	Param.
Barium (mg/L)	BAW-5	0.04623	0.03992	2	No	14	0	No	0.01	Param.
Barium (mg/L)	BAW-7	0.01242	0.01093	2	No	14	0	No	0.01	Param.
Beryllium (mg/L)	BAW-3	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BAW-4	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BAW-5	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BAW-7	0.0025	0.0025	0.004	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BAW-3	0.001102	0.0005958	0.005	No	14	7.143	ln(x)	0.01	Param.
Cadmium (mg/L)	BAW-4	0.0025	0.0025	0.005	No	14	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BAW-5	0.0025	0.000155	0.005	No	14	92.86	No	0.01	NP (NDs)
Cadmium (mg/L)	BAW-7	0.0025	0.0025	0.005	No	14	100	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-3	0.003	0.00165	0.1	No	14	85.71	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-4	0.0025	0.0015	0.1	No	14	78.57	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-5	0.005	0.0024	0.1	No	14	78.57	No	0.01	NP (NDs)
Chromium (mg/L)	BAW-7	0.0025	0.00206	0.1	No	14	92.86	No	0.01	NP (NDs)
Cobalt (mg/L)	BAW-3	0.006247	0.005246	0.006	No	14	0	No	0.01	Param.
Cobalt (mg/L)	BAW-4	0.001234	0.0009485	0.006	No	14	0	No	0.01	Param.
Cobalt (mg/L)	BAW-5	0.0025	0.00042	0.006	No	14	92.86	No	0.01	NP (NDs)
Cobalt (mg/L)	BAW-7	0.0009645	0.0007564	0.006	No	14	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAW-3	1.441	0.009328	5	No	14	14.29	x^(1/3)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAW-4	5	0.0402	5	No	14	21.43	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	BAW-5	0.928	0.2595	5	No	13	7.692	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAW-7	5	0.094	5	No	14	21.43	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	BAW-3	0.1	0.1	4	No	15	100	No	0.01	NP (NDs)
Fluoride (mg/L)	BAW-4	0.1	0.04	4	No	15	33.33	No	0.01	NP (normality)
Fluoride (mg/L)	BAW-5	0.06427	0.04959	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	BAW-7	0.1	0.1	4	No	15	100	No	0.01	NP (NDs)
Lead (mg/L)	BAW-3	0.00125	0.000322	0.015	No	13	61.54	No	0.01	NP (normality)
Lead (mg/L)	BAW-4	0.00125	0.00039	0.015	No	13	76.92	No	0.01	NP (NDs)
Lead (mg/L)	BAW-5	0.00125	0.000152	0.015	No	13	92.31	No	0.01	NP (NDs)
Lead (mg/L)	BAW-7	0.00125	0.000129	0.015	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BAW-3	0.00687	0.0023	0.04	No	14	64.29	No	0.01	NP (normality)
Lithium (mg/L)	BAW-4	0.028	0.0229	0.04	No	14	0	No	0.01	NP (normality)
Lithium (mg/L)	**BAW-5**	**0.1989**	**0.1713**	**0.04**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Lithium (mg/L)	BAW-7	0.005	0.0027	0.04	No	14	57.14	No	0.01	NP (normality)
Mercury (mg/L)	BAW-3	0.0002	0.00013	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BAW-4	0.0002	0.00013	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BAW-5	0.0002	0.0002	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BAW-7	0.0002	0.0002	0.002	No	11	90.91	No	0.006	NP (NDs)
Molybdenum (mg/L)	BAW-3	0.015	0.015	0.1	No	12	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BAW-4	0.015	0.015	0.1	No	12	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BAW-5	0.015	0.0011	0.1	No	12	41.67	No	0.01	NP (normality)
Molybdenum (mg/L)	BAW-7	0.015	0.0038	0.1	No	12	91.67	No	0.01	NP (NDs)
Selenium (mg/L)	BAW-3	0.00125	0.00031	0.05	No	13	46.15	No	0.01	NP (normality)
Selenium (mg/L)	BAW-4	0.00125	0.00125	0.05	No	13	100	No	0.01	NP (NDs)
Selenium (mg/L)	BAW-5	0.00125	0.00033	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	BAW-7	0.0021	0.00031	0.05	No	13	61.54	No	0.01	NP (normality)
Thallium (mg/L)	BAW-3	0.0005	0.000095	0.002	No	12	83.33	No	0.01	NP (NDs)
Thallium (mg/L)	BAW-4	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)
Thallium (mg/L)	BAW-5	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)
Thallium (mg/L)	BAW-7	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

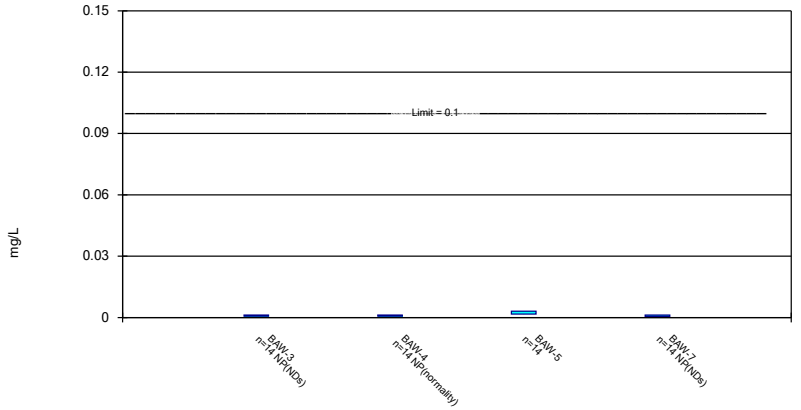
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

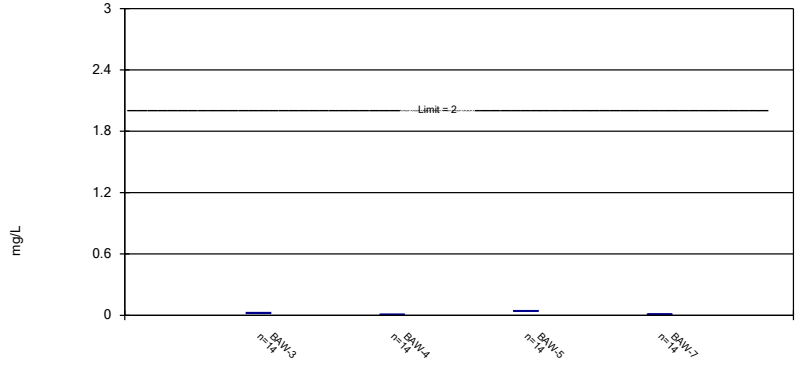
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric Confidence Interval

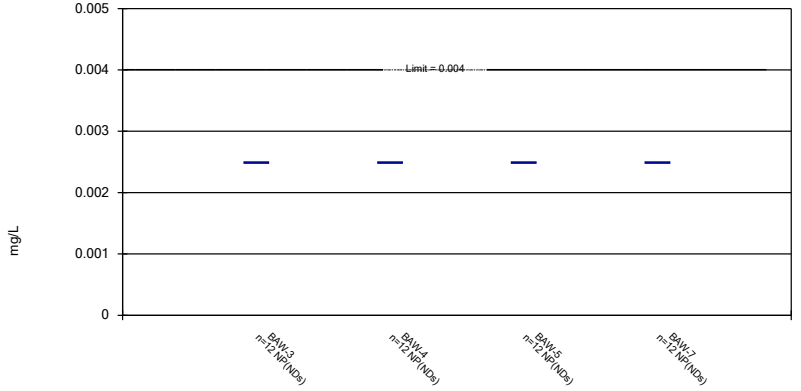
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

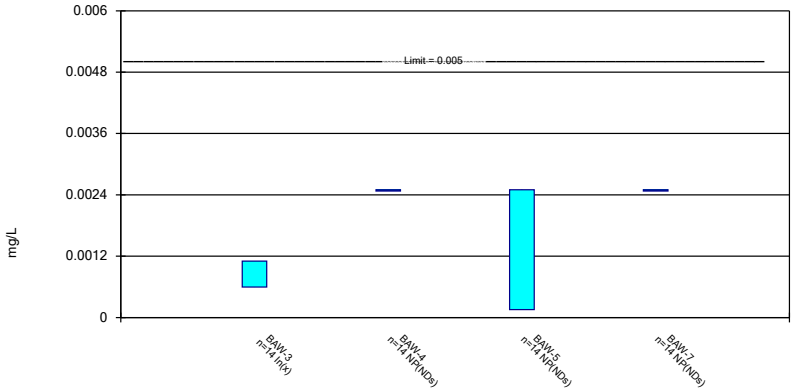
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

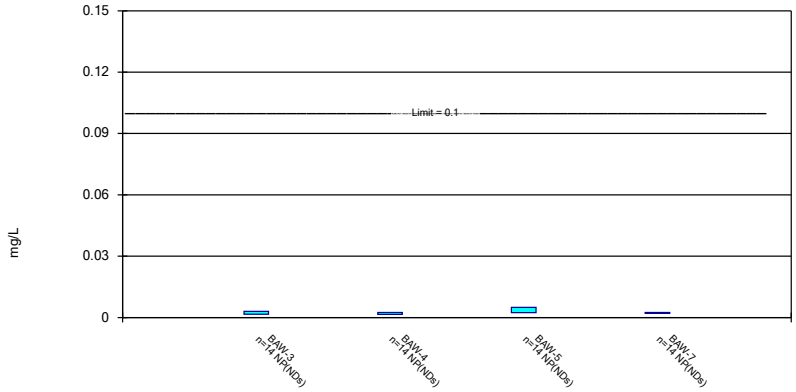
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

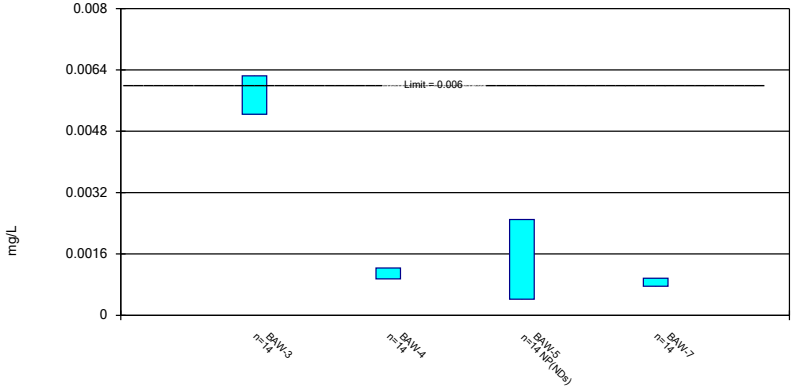
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

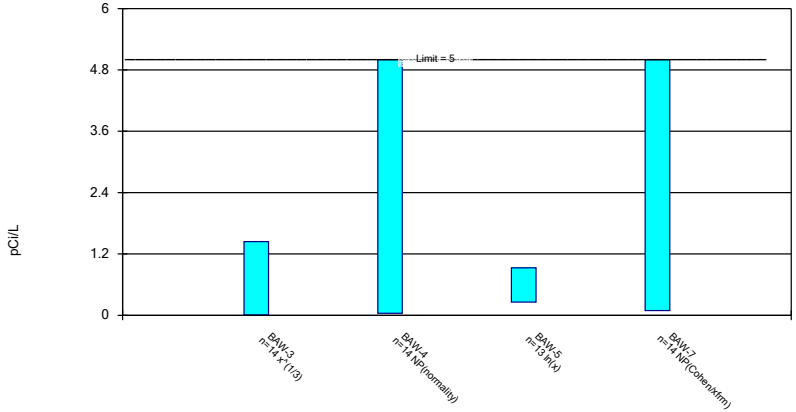
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

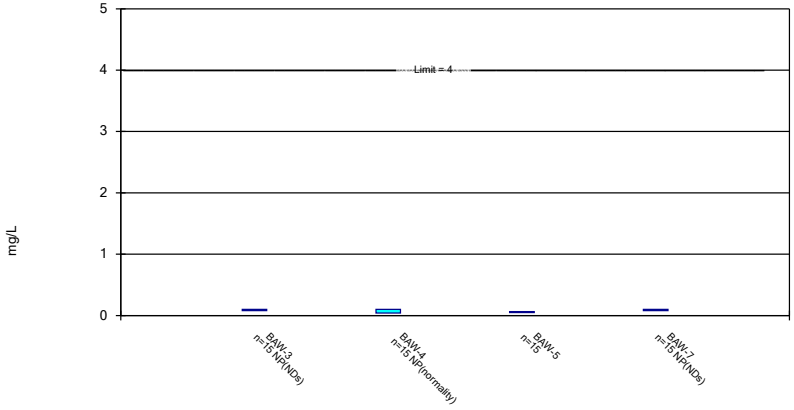
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - A
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

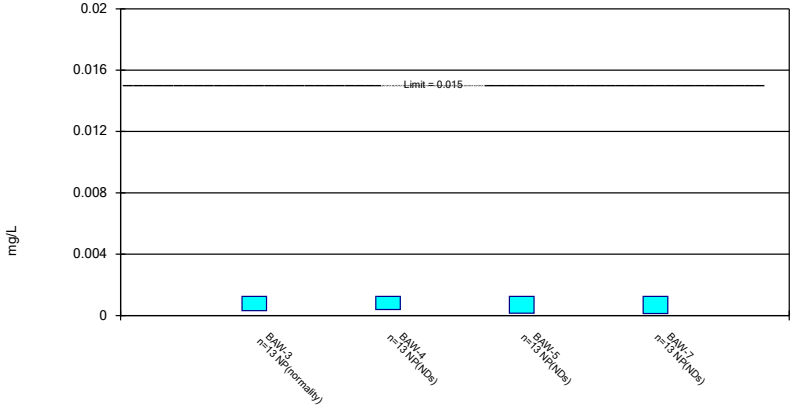
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

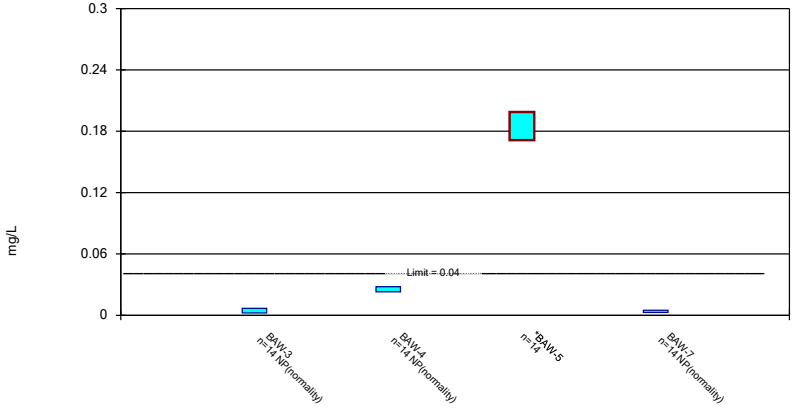
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Parametric and Non-Parametric (NP) Confidence Interval

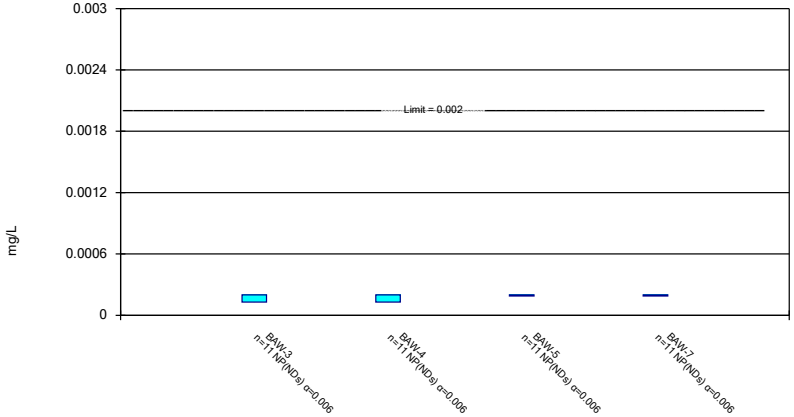
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



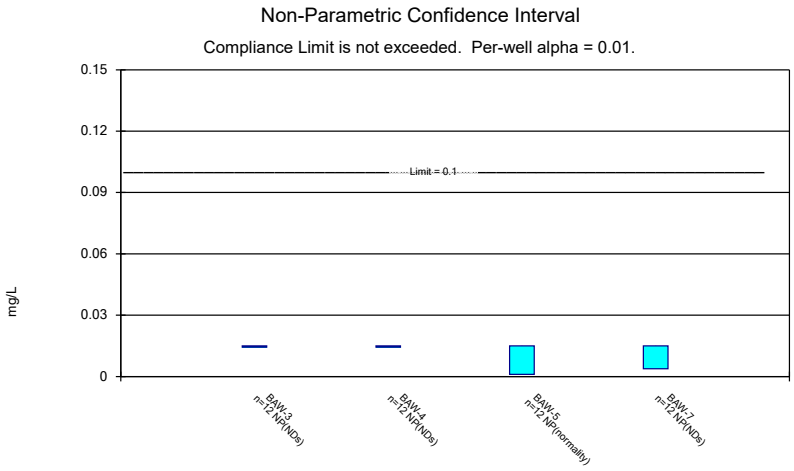
Constituent: Lithium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Non-Parametric Confidence Interval

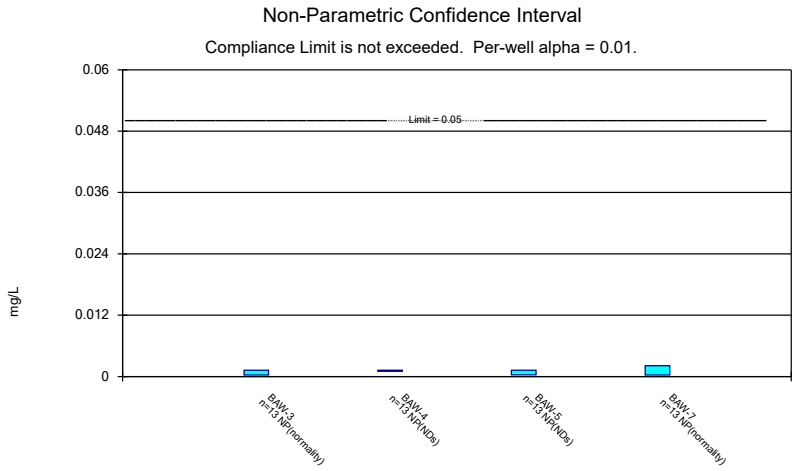
Compliance Limit is not exceeded.



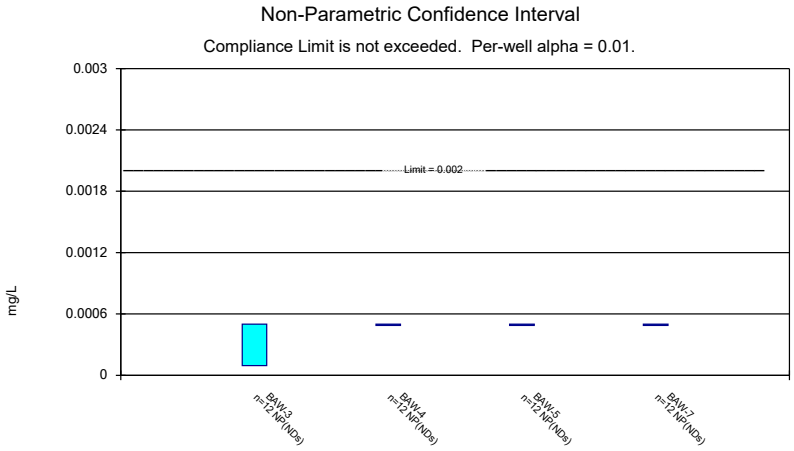
Constituent: Mercury Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR



Constituent: Molybdenum Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR



Constituent: Selenium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR



Constituent: Thallium Analysis Run 1/2/2020 8:30 AM View: Confidence Intervals - App IV
Plant Daniel Client: Southern Company Data: Bottom Ash CCR

Appendix C

ALTERNATE SOURCE DEMONSTRATION REPORT

MISSISSIPPI POWER COMPANY
PLANT VICTOR DANIEL
ASH POND B

July 12, 2019

Prepared for

Mississippi Power Company
Gulfport, Mississippi

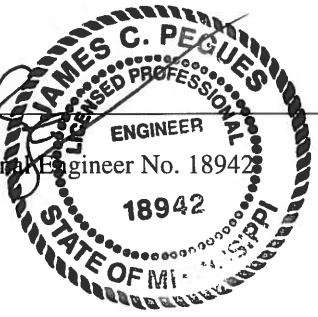
By

Southern Company Services
Earth Science and Environmental Engineering

CERTIFICATION STATEMENT

This Alternate Source Demonstration, Mississippi Power Company Plant Victor Daniel Ash Pond B has been prepared in compliance with applicable United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015) under the direction of a licensed professional engineer with Southern Company Services, Inc.

I hereby certify that the information presented in this Alternate Source Demonstration is accurate as required by 40 CFR §257.95(g)(3).



James C. Pegues, P.E.
MS Licensed Professional Engineer No. 18942

Date 7/12/19

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1.0 INTRODUCTION

This Alternate Source Demonstration (ASD) has been prepared pursuant to the U.S. Environmental Protection Agency (USEPA) coal combustion residuals (CCR) rule (40 Code of Federal Regulations [CFR] Part 257 Subpart D) to address lithium detected at a statistically significant level (SSL) over the groundwater protection standard (GWPS) in monitoring well BAW-5 at Mississippi Power Company (MPC) Plant Daniel (Site) Ash Pond B (AP-B). This document satisfies the requirements of §257.95(g)(3)(ii), which allows the owner or operator to demonstrate that a source other than the CCR unit caused an SSL in groundwater. Data presented in this ASD illustrates that lithium SSLs in BAW-5 are attributed to naturally-occurring lithium in subsurface aquifer materials and are not caused by a release from AP-B. Based on this demonstration, the facility will not pursue an assessment of corrective measures (ACM) and will continue in assessment monitoring.

MPC will close AP-B through removal of CCR from the unit. The surface impoundment will be dewatered as required to facilitate the excavation or dredging of ash for removal. All CCR will be excavated, transported and disposed of in the Plant Daniel North Ash Management Unit permitted landfill. Closure will include removing all visible ash present over the existing high-density polyethylene (HDPE) liner. The Closure Plan summary for AP-B was published to MPC's CCR compliance webpage in October 2016.

2.0 SITE DESCRIPTION AND CONCEPTUAL SITE MODEL

Plant Daniel is an electric generating facility located in Escatawpa, Jackson County, Mississippi. The Site is situated immediately northwest of the intersection of Mississippi State Highways 63 and 613, between the Pascagoula River to the west and Highway 63 to the east. AP-B is located to the north of the main plant. **Figure 1** depicts the location of Plant Daniel relative to Site features and the surrounding area.

The Site is located in the Pascagoula River Drainage Basin in the Gulf Coastal Plain physiographic province. Topographically, the province is gently rolling to flat with local salt marshes. Rock outcrops are sedimentary in origin and range in age from late Miocene to Recent (Gandl, 1982). A dominant regional structural feature which affects the sediments of Miocene and younger age is the Gulf Coast geosyncline. The sediments dip toward the Gulf of Mexico. Fresh-water aquifers in the Pascagoula area are sand or sand and gravel beds of Miocene age or younger, generally less than 1,000 feet below the surface.

The surface geology of soils near the Site results from present-day weathering processes influenced by southern Mississippi's semi-tropical climate and the parent geologic materials. The soil profile is formed from a wide variety of sediments of recent age, and from Pleistocene terrace deposits. The soils therefore contain sand, silt, clay, gravel and organics typical of Coastal Plain geologic settings. Five lithologic units have been identified below the Site and are described from shallowest to deepest as follows:

1. Unit 1 is a surficial sandy clay aquitard. The unit is discontinuous across the Site and where present extends from the surface to approximately 4 feet (ft) to -10 ft mean sea level (MSL).
2. Unit 2 is a sand aquifer underlying Unit 1. Unit 2 extends to a depth of approximately -35 ft MSL at AP-B and is considered the uppermost aquifer for groundwater monitoring purposes. All Site groundwater monitoring wells are installed within Unit 2.
3. Unit 3 is a clay aquitard underlying Unit 2 occurring at thicknesses ranging from approximately -

35 to -50 ft MSL. Review of Site geologic data suggests that Unit 3 is continuous across the Site.

4. Unit 4 is a sand and gravel aquifer underlying Unit 3 with a thickness of approximately 20 ft or greater.
5. Unit 5 is a clay aquitard that underlies Unit 4. Borings have not penetrated Unit 5 sufficiently to determine its thickness.

The uppermost aquifer at the Site is the Unit 2 sand, which correlates with the Citronelle Aquifers in the Pascagoula area. Although principally a sand and gravel formation, the Citronelle is characterized by occasional lenses and layers of clay. Sediments become coarse near the irregular contact with the underlying Pascagoula or Graham Ferry Formation. The Citronelle and overlying coastal deposits are generally considered one hydrogeologic unit. The Citronelle is primarily a water table aquifer with a saturated thickness of about 45 feet. Recharge is primarily by rainfall which moves vertically and down dip to recharge underlying aquifers and to sustain local streams (Wasson, 1978). At the Site vertical groundwater flow in upper strata is impeded by low permeability clays (Unit 3 and Unit 5).

Figure 2a and 2b depicts a generalized conceptual site model for the area below AP-B including unit identification, zone where groundwater monitoring wells are screened, and general groundwater elevation.

3.0 GROUNDWATER MONITORING PROGRAM

The certified compliance monitoring well network and potentiometric surface contour map for AP-B is shown on **Figure 3.** The compliance network consists of six monitoring wells: two upgradient wells (BAW-1 and BAW-2A) and four downgradient wells (BAW-3 through BAW-7). Groundwater flows northeast to southwest, from BAW-1 to BAW-5. Groundwater is currently monitored in AP-B wells under the assessment monitoring program pursuant to 40 CFR § 257.95. Additional groundwater monitoring details are provided in the *2018 Annual Groundwater and Corrective Action Monitoring Report* (SCS, 2019).

3.1 SSLs and Lithium in Groundwater

Groundwater monitoring data collected during the semiannual monitoring events in June and October 2018 were statistically analyzed pursuant to 40 CFR § 257.95 and in accordance with the US EPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (US EPA, 2009). SSLs for lithium in downgradient monitoring well BAW-5 were identified in data collected during the June and November 2018 sampling events. Groundwater monitoring results for lithium from March 2016 through April 2019 are provided in **Table 1**. Details regarding the statistical analyses are provided in the *2018 Annual Groundwater and Corrective Action Monitoring Report* (SCS, 2019).

Lithium has been observed in downgradient wells at AP-B throughout background and during assessment monitoring. Concentrations in BAW-5 range from 0.161 to 0.23 mg/L. A trend plot for lithium concentrations in BAW-5 collected from March 2016 to April 2019 is provided as **Figure 4**. The trend plot indicates that the lithium concentrations in BAW-5 are stable and do not exhibit a statistically significant trend.

4.0 ALTERNATE SOURCE DEMONSTRATION

The following provides a demonstration that the source of lithium SSLs in groundwater reported during the 2018 semiannual assessment monitoring events are attributed to naturally-occurring lithium in the aquifer materials at the Site and are not caused by a release from AP-B. The following lines of evidence are presented below to support the ASD:

- AP-B is a lined facility.
- Lithium is documented in literature as occurring naturally in soils regionally and at the Site.
- Aquifer materials sampled at AP-B yielded lithium concentrations ranging from 0.828 to 5.77 milligrams per kilogram (mg/kg). These part per million-level (ppm-level) lithium concentrations observed in aquifer materials are capable of generating part per billion-level (ppb-level) lithium concentrations in groundwater through competitive desorption, similar to observations in BAW-5.
- Groundwater at BAW-5 does not have the same geochemical signature as porewater collected AP-B. Lithium observed in porewater within AP-B is substantially lower than lithium observed in BAW-5; and therefore, cannot be the source of lithium in groundwater.

4.1 AP-B Liner System

AP-B is a 23-acre triangular shaped impoundment with earthen embankments. In 1993, AP-B was retrofitted with a 60 mil High Density Polyethylene (HDPE) geomembrane liner system. Prior to placing the HDPE liner, a 2-ft clay layer was installed in the bottom of AP-B. The clay layer was sealed and compacted using a smooth drum roller and the area was inspected prior to placing the HDPE liner system. The liner system is routinely inspected, and necessary repairs are promptly made.

4.2 Naturally-Occurring Lithium in Aquifer Materials

Lithium is an alkali metal that occurs naturally in the environment. It has a single oxidation state in the environment, which results in limited chemical reactions and relatively conservative behavior in aqueous systems (Electric Power Research Institute [EPRI], 2018). In a saturated aquifer, lithium prefers to be dissolved in groundwater rather than sorbed to soils and will travel near the speed of groundwater (similar to other mobile constituents like boron and calcium). Natural sources of lithium in the earth's crust are initially deposited as primary minerals in igneous rocks during formation. As the igneous rocks age and breakdown, lithium can be mobilized from the primary minerals via erosion or dissolution. Although dissolved lithium is highly mobile, it can be incorporated into clays during formation or alteration (EPRI, 2018). Based on this weathering and transport sequence, lithium naturally exists in clays found in coastal lithologies. Especially, in depositional environments along rivers capable of transporting weathered sediments from regions of elevated naturally-occurring lithium and depositing them down river, similar to the geologic and depositional setting at the Site.

United Stated Geological Survey (USGS) has investigated the geochemical and mineralogy of the soil throughout the United States. Available data and corresponding statistical assessment published in

Geochemical and Mineralogical Maps for Soils of the Conterminous United States (USGS, 2014) suggest that lithium is naturally occurring in soil near the Site, at concentrations ranging from 14 to 21 milligram per kilogram (mg/kg). The mineralogic map for the lithium C-horizon (corresponding to a depth of up to 1 meter below land surface) from the USGS publication is provided as **Figure 5**.

Clay minerals such as kyanite, kaolin, flint clay, and bauxite typically exhibit high concentrations of lithium due to frequent substitution for aluminum in the mineral's structure. Based on the properties of lithium and how it is transported, lithium is most likely to occur in clays or in clayey soils at AP-B. Aquifer materials were collected at depths ranging from 18 to 78 ft below land surface (BLS) from two boring locations (Location A and Location C). Target sample intervals were selected based on clay and silty-clay mixtures documented in soil boring logs for monitoring wells installed around AP-B. The samples were submitted to Test America laboratory in Pittsburgh, Pennsylvania and analyzed for lithium using EPA method 6020. Soil sample locations are shown on **Figure 3**. Boring logs for adjacent wells BAW-1 and BAW-5 are provided in **Appendix A**. Laboratory analytical results are provided in **Table 2** and **Appendix B**.

Lithium concentrations in native soils at the site ranged from 0.828 to 5.77 mg/kg, with the highest occurrences in silty and clayey soils, which ranged in concentration from 2.6 to 5.8 mg/kg. The naturally-occurring lithium at ppm-level concentrations in aquifer materials observed at AP-B are able to generate ppb-level concentrations of lithium in groundwater through competitive desorption, similar to observations at BAW-5 and monitoring wells screened in the uppermost aquifer at AP-B.

4.4 Groundwater and Porewater Chemistry

Eight background samples were collected from monitoring wells at AP-B from March 2016 through June 2017. During detection monitoring and subsequent assessment monitoring events, Appendix III parameters were detected above background concentrations in monitoring wells BAW-3, BAW-4, and BAW-5. Isolated tears in the HDPE liner were observed in AP-B and repaired. Upon completion of the repairs, Appendix III parameter trends began to decline, specifically boron, calcium, and total dissolved solids (TDS) as shown in trend plots provided in **Figures 6a** through **6c.** However, lithium concentrations in BAW-5 remained stable and elevated (**Figure 4**). Based on the mobile nature of lithium in groundwater, if the source of the lithium in groundwater was caused by porewater escaping through the isolated tears in the liner, lithium would exhibit a decline in concentration with the liner repairs similar to the decline in boron and calcium concentrations observed at BAW-5.

To further eliminate AP-B as the source of lithium in groundwater, piezometer PZ-1 was installed in CCR material in AP-B in May 2019 (**Figure 3**). Samples were collected from BAW-1, BAW-2A, BAW-5, and PZ-1 on June 6, 2019 and were analyzed for Appendix III parameters, other major ions (alkalinity, magnesium, potassium, and sodium), and lithium. Lithium was detected in porewater sampled from PZ-1 at 0.00814 mg/L, which is substantially lower than lithium observed in groundwater in BAW-5; and therefore, cannot be the source of lithium in groundwater. A summary of analytical results collected on June 6, 2019 is provided in **Table 3**.

A piper diagram was constructed using major ion (total alkalinity, calcium, chloride, magnesium, potassium, sodium, and sulfate) chemistry collected in June 2019 (**Figure 7**). Based on the major ion

chemistry, the geochemical signature of the porewater (PZ-1) in AP-B is not consistent with the geochemical signature of groundwater at BAW-5. We would expect similar geochemical signatures between the waters if AP-B had a substantial effect on downgradient groundwater. Laboratory analytical reports are provided in **Appendix B**.

4.0 CONCLUSION

The evaluation presented herein provides a demonstration that the source of lithium SSLs in groundwater reported during the 2018 semiannual assessment monitoring events are likely attributed to naturally-occurring lithium in the aquifer materials at the Site and are not caused by a release from AP-B. Naturally-occurring lithium is present in clayey aquifer materials regionally and documented at the Site. Lithium concentrations at ppm-levels observed in aquifer materials are capable of generating ppb-level lithium concentrations in groundwater through competitive desorption, similar to observations in BAW-5. Lithium observed in porewater within AP-B is substantially lower than lithium observed in BAW-5; and therefore, cannot be the source of lithium in groundwater. Based on the major ion chemistry, the geochemical signature of the porewater (PZ-1) in AP-B is not consistent with the geochemical signature of groundwater at BAW-5. These lines of evidence support a natural source of lithium to groundwater at AP-B.

Information presented in this ASD explains that a source other than the CCR unit (AP-B) caused the SSL of lithium found in BAW-5 pursuant to §257.95(g)(3)(ii). Therefore, an assessment of corrective measures is not required, and no further action is necessary. AP-B will remain in assessment monitoring, and results presented in *2019 Annual Groundwater Monitoring and Corrective Action Report*.

5.0 REFERENCES

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Wasson, B.E., 1978. "Availability of additional ground-water supplies in the Pascagoula area," Mississippi: Mississippi Research and Development Center Bulletin, 1978. 32 pp.

TABLES

Table 1

Lithium Results in Groundwater

Sample Date	Monitoring Well Network					
	BAW-1	**BAW-2/2A**	**BAW-3**	**BAW-4**	**BAW-5**	**BAW-7**
March 2016	<0.005	<0.005	<0.005	0.044	0.17	<0.005
May 2016	0.0037 J	<0.005	<0.005	0.028	0.2	<0.005
July 2016	0.012	<0.005	<0.005	0.026	0.17	<0.005
September 2016	<0.005	<0.005	<0.005	0.026	0.17	<0.005
November 2016	<0.005	<0.005	<0.005	0.026	0.18	0.0035 J
January 2017	<0.005	<0.005	<0.005	0.027	0.2	<0.005
March 2017	<0.005	<0.005	<0.005	0.024	0.19	<0.005
May 2017	<0.005	<0.005	<0.005	0.027	0.21	<0.005
March 2018	<0.005	0.0026 J	0.0023 J	0.021	0.23	0.0026 J
June 2018	0.0017 J	0.0021 J	0.002 J	0.022	0.19	0.0029 J
November 2018	0.0023 J	0.0024 J	0.0024 J	0.025	0.18	0.0027 J
February 2019	<0.005	<0.005	<0.005	0.0229	0.161	<0.005
April 2019	0.00229 J	0.00191 J	0.00197 J	0.0236	0.174	0.00238 J

Notes:

1. BAW-2A is a replacement well for BAW-2.
2. J indicates result was below the laboratory reporting limit and above the method detection limit.
3. < indicates the result was not detected.

Table 2
Plant Daniel Soil Sample Results

Sample Location	Sample Depth (ft BLS)	Description of Aquifer Materials	Lithium (mg/kg)
LOCATION A	23.5-25.0	Clayey Sand	3.59
LOCATION A	30.0-31.5	Sandy Lean Clay	3.07
LOCATION A	38.5-40.0	Silty Sand	0.854
LOCATION A	50.0-51.5	Poorly-graded Sand with Silt	0.828
LOCATION A	73.5-75.0	Sandy Fat Clay	2.57
LOCATION A	77.0-78.5	Silt	2.62
LOCATION C	18.5-20	Silt	5.77
LOCATION C	35.0-36.5	Fat Clay	5.17
LOCATION C	43.5-45.0	Silty Sand	1.15
LOCATION C	55.0-56.5	Poorly-graded Sand	0.908

1. ft BLS indicates feet below land surface.

Table 3
Summary of Analytical Results Collected June 6, 2019

Constituent	BAW-1	BAW-2A	BAW-5	PZ-1
Alkalinity Total as CaCO3	<5	<5	47.7	81.2
Bicarbonate Alkalinity as CaCO3	<5	<5	47.7	<5
Boron	0.0384	0.0418	0.154	2.31
Calcium	0.947	0.681	13.5	48.1
Carbonate Alkalinity as CaCO3	<5	<5	<5	74.7
Chloride	5.04	8	9.5	25.9
Dissolved Solids	17	13	60	311
Lithium	0.00395	<0.005	0.16	0.00814
Magnesium	0.674	0.846	0.91	0.477
pH	4.99	4.83	6.14	10.28
Phenolphthalein Alkalinity	<5	<5	<5	43.8
Potassium	0.551	0.572	1.6	2.36
Sodium	3.67	5.12	6.95	59.9
Sulfate	1.35	2.83	3.24	130

1. Concentrations are in mg/L.
2. < indicates the result was not detected.
3. pH was collected in the field.

FIGURES

Legend

- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 1,250 2,500 5,000 7,500 10,000 Feet

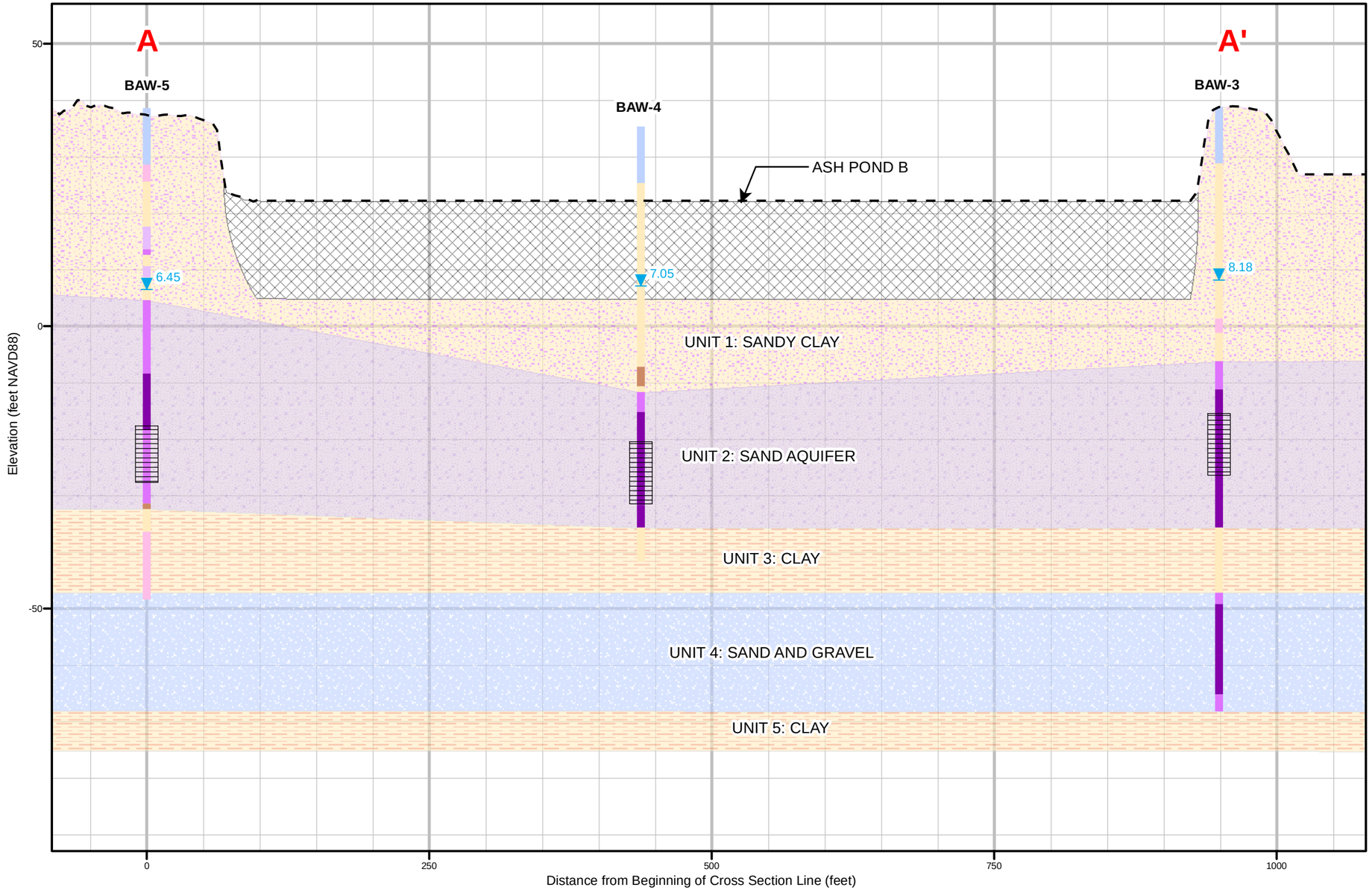
1 inch = 2,500 feet

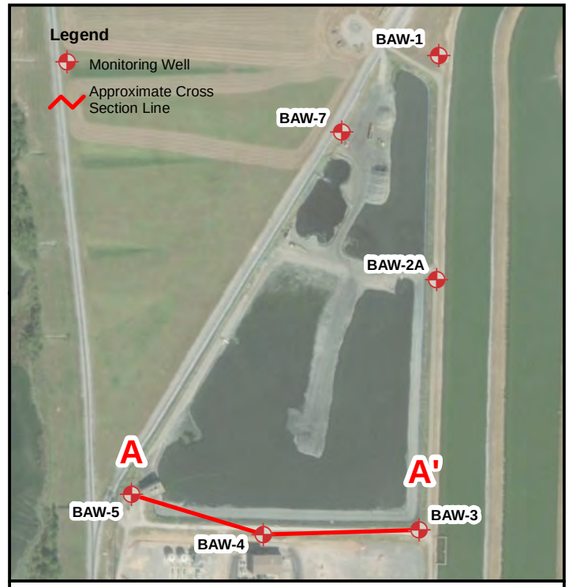
Southern Company Services
Earth Science and Environmental Engineering

FOR

FIGURE 1
SITE LOCATION MAP
PLANT DANIEL
ASH POND B

Mississippi Power Company





Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Vertical exaggeration = 5

Legend

- Water Level Measured in November 2018 (ft NAVD88)
- Ground Surface Elevation
- Screened Interval
- Hydroexcavation
- Organic Soil
- Clay
- Silt
- Clayey Sand
- Silty Sand
- Poorly-Graded Sand
- Ash Pond B with Fill
- Unit 1: Sandy Clay
- Unit 2: Sand Aquifer
- Unit 3: Clay
- Unit 4: Sand and Gravel
- Unit 5: Clay

FIGURE 2A
CONCEPTUAL SITE MODEL
PLANT DANIEL
ASH POND B

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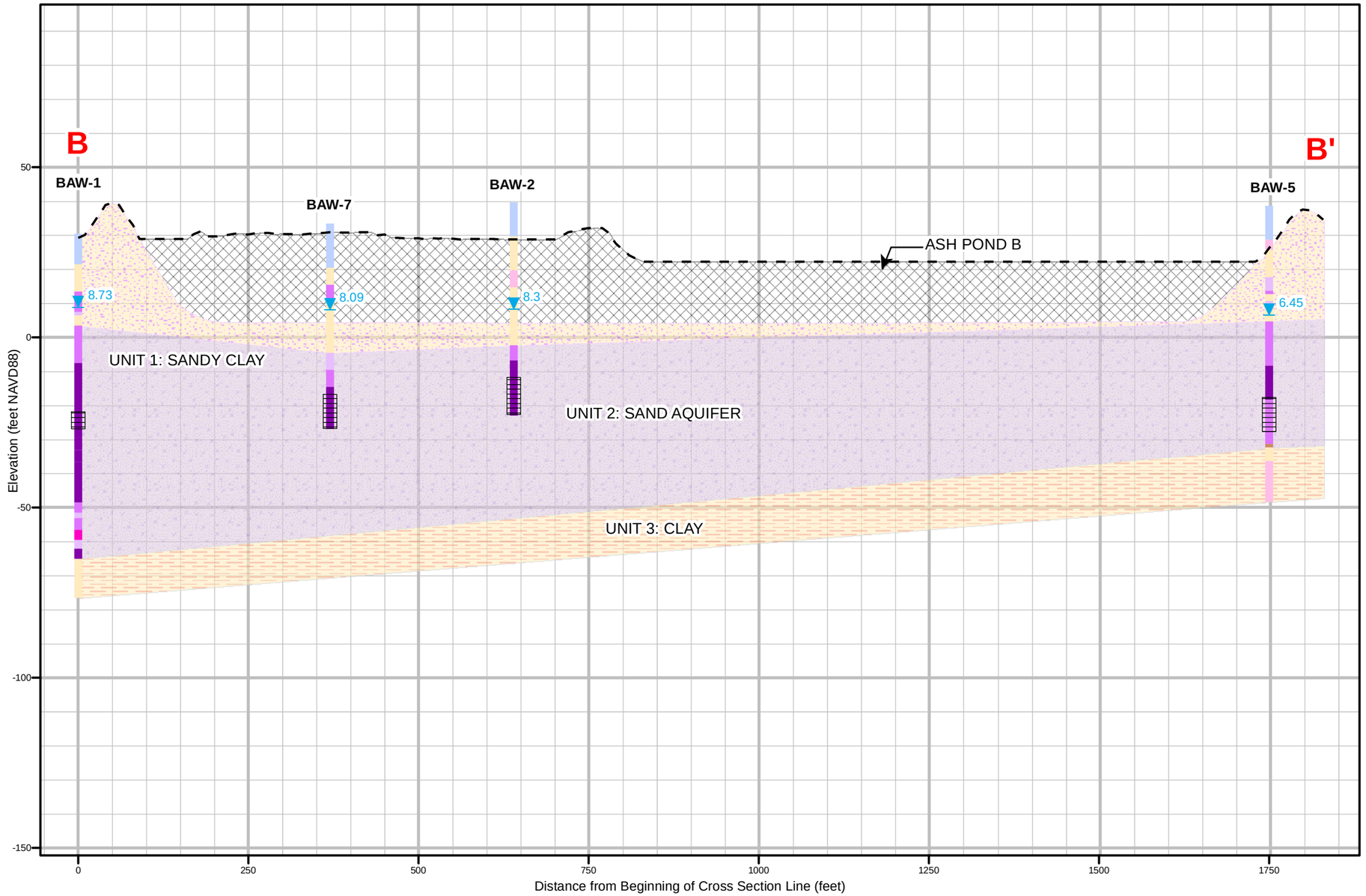
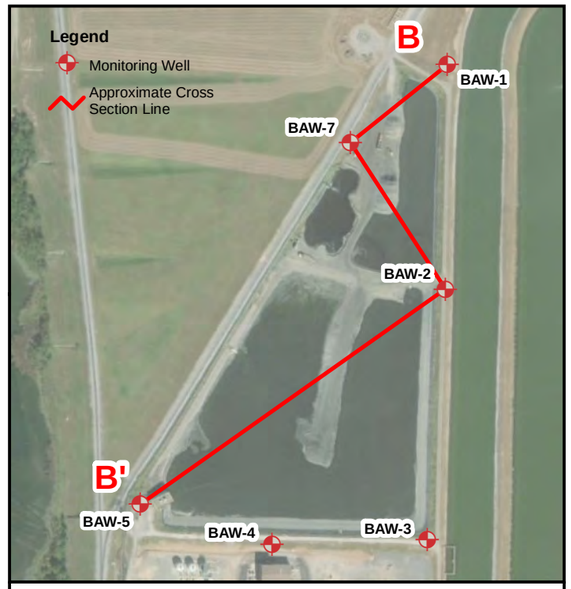
FOR

Mississippi Power Company

SCALE	PROJ I.D.	DRAWING NUMBER	SHEET	CONT'D	REV
		FIGURE 2A	1		





0 500 1,000 Feet

Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Vertical exaggeration = 5

Legend

- Water Level Measured in November 2018 (ft NAVD88)
- Ground Surface Elevation
- Screened Interval
- Hydroexcavation
- Organic Soil
- Clay
- Silt
- Clayey Sand
- Silty Sand
- Poorly-Graded Sand
- Well Graded Sand
- Ash Pond B with Fill
- Unit 1: Sandy Clay
- Unit 2: Sand Aquifer
- Unit 3: Clay
- Unit 4: Sand and Gravel
- Unit 5: Clay

FIGURE 2B
CONCEPTUAL SITE MODEL
PLANT DANIEL
ASH POND B

Southern Company Generation
Earth Science and Environmental Engineering

FOR

Mississippi Power Company

SCALE	PROJ I.D.	DRAWING NUMBER	SHEET	CONT'D	REV
		FIGURE 2B	1		

Legend

- Soil Sample Location
- Monitoring Well Location
- Pore Water Sampling Location
- Estimated Potentiometric Contour (ft NAVD88)
- Approximate Direction of Groundwater Flow
- Ash Pond B Boundary
- Property Boundary (Approximate)

N

0 125 250 500 750 1,000 Feet

1 inch = 250 feet

Southern Company Services
Earth Science and Environmental Engineering

FOR

FIGURE 3
MONITORING WELL NETWORK AND
POTENTIOMETRIC SURFACE CONTOUR MAP
NOVEMBER 2018
PLANT DANIEL
ASH POND B

Mississippi Power Company

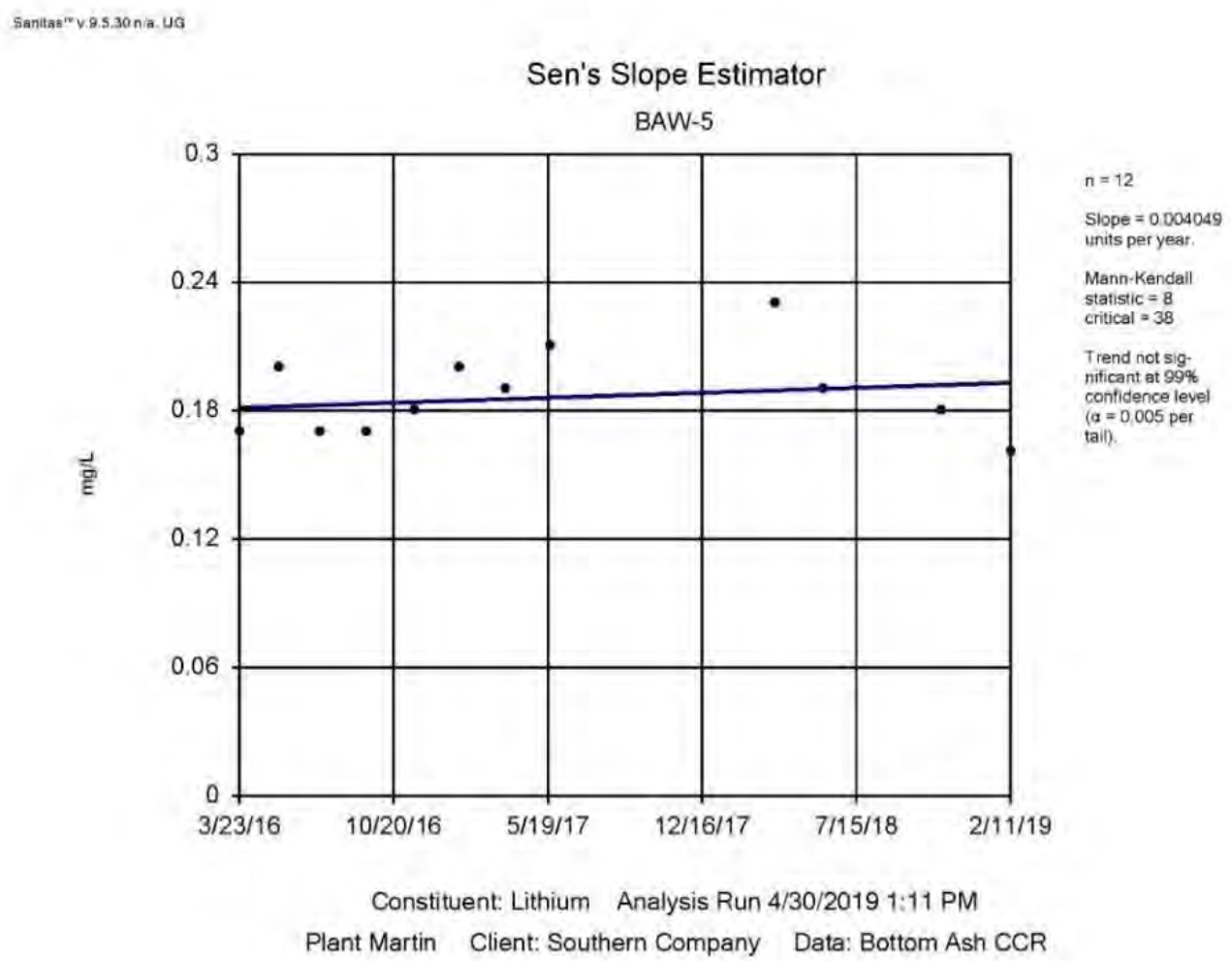


Figure 4 Lithium Trend in BAW-5

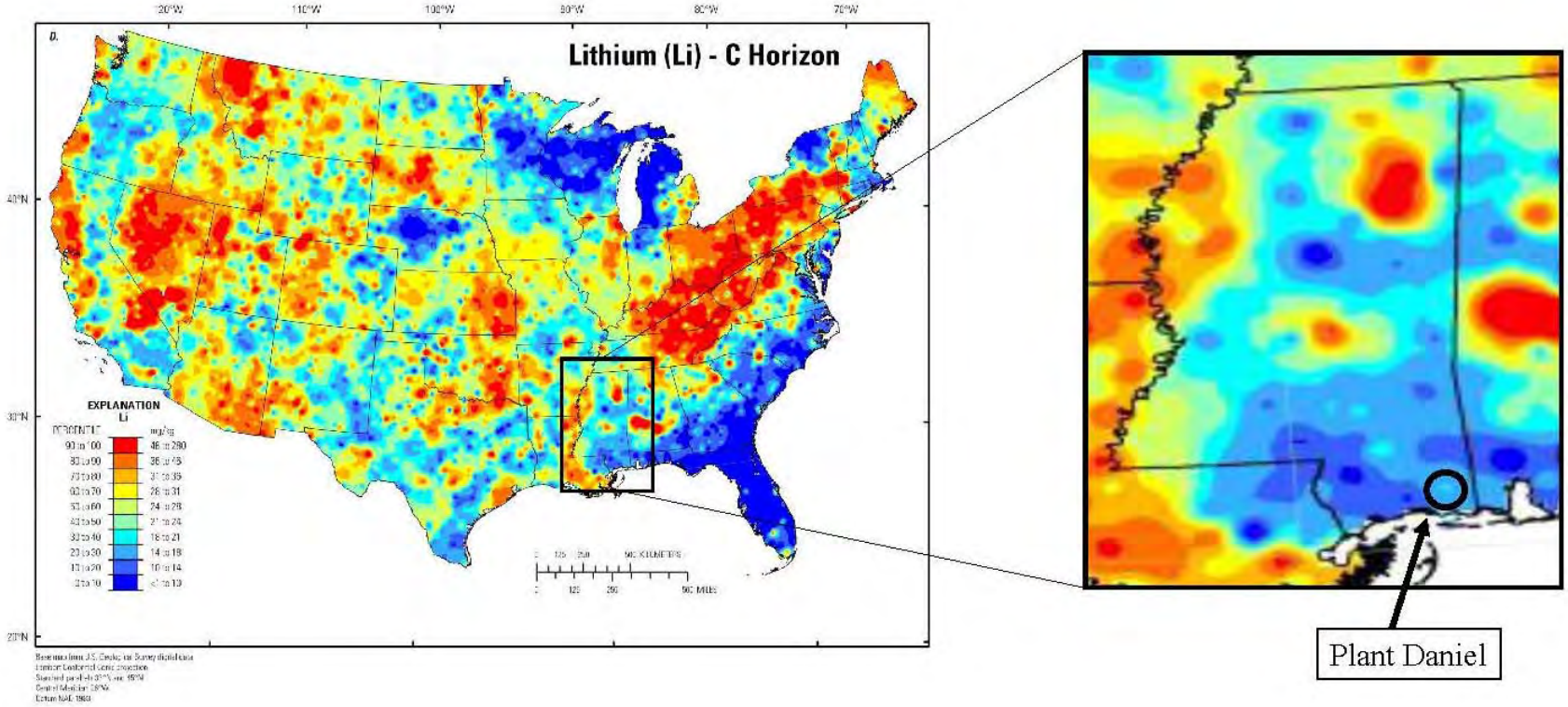


Figure 5. Distribution of Lithium in the Soil C Horizon and Plant Daniel

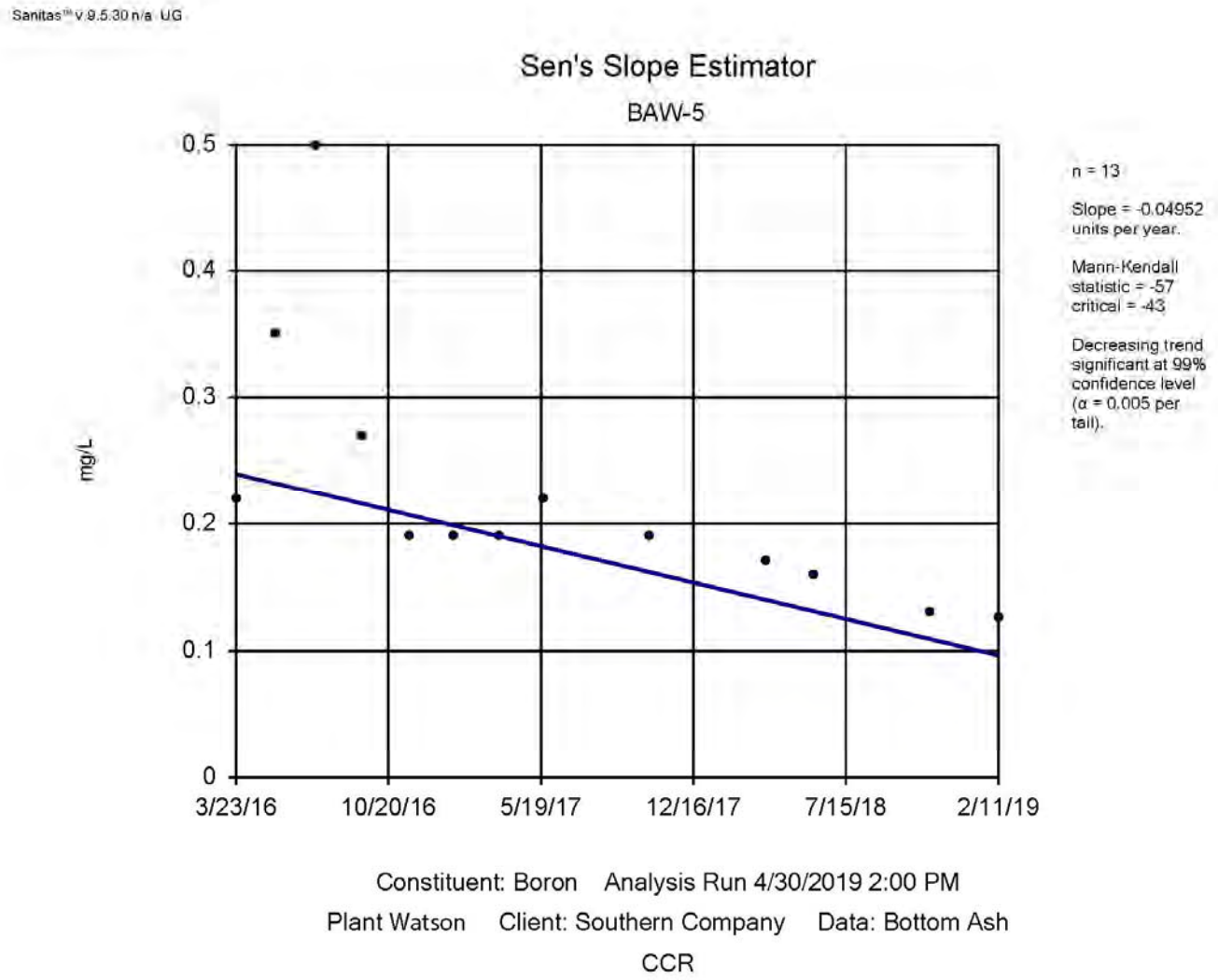


Figure 6A. Boron Trend Plot for BAW-5

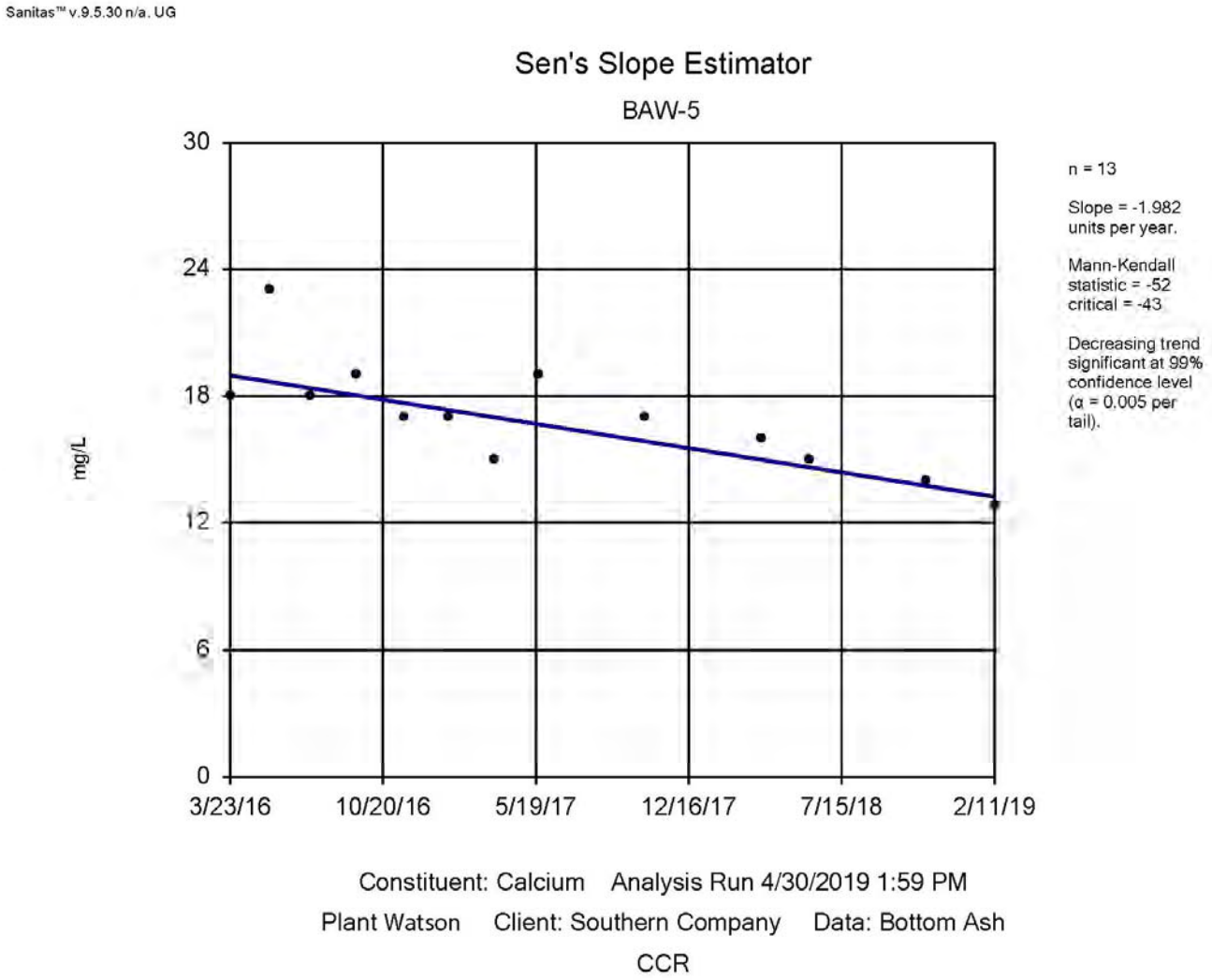


Figure 6b. Calcium Trend Plot for BAW-5

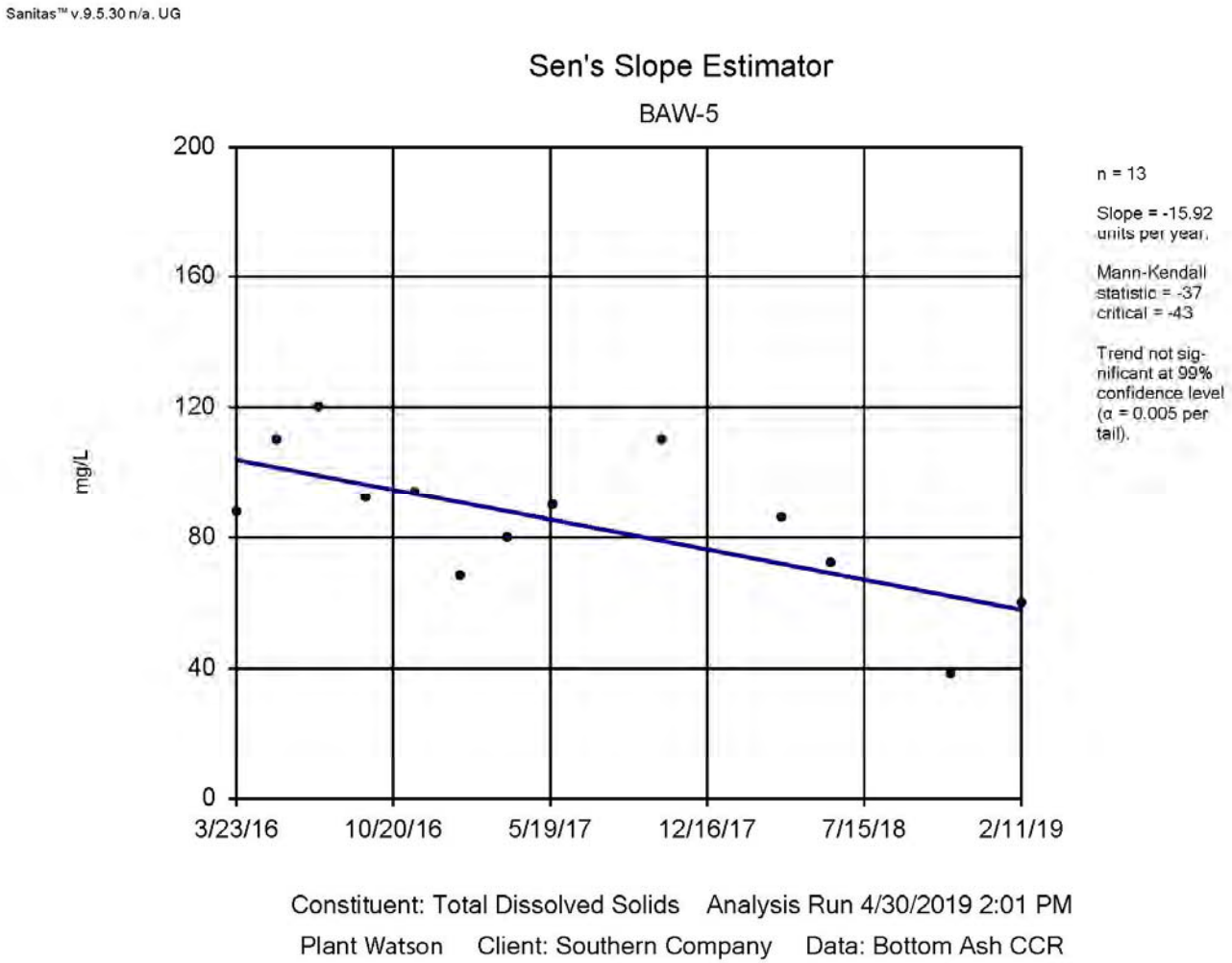


Figure 6c. TDS Trend Plot for BAW-5

Appendix A
Soil Boring Logs

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DATE STARTED 6/23/2015 **COMPLETED** 7/23/2015 **SURF. ELEV.** 30.4 **COORDINATES:** N:378,974.78 E:1,071,575.78
CONTRACTOR Cascade Drilling **EQUIPMENT** **METHOD** Hydroexcavation; Sonic
DRILLED BY T. Ardito **LOGGED BY** B. Smelser **CHECKED BY** B. Coates **ANGLE** **BEARING**
BORING DEPTH 107 ft. **GROUND WATER DEPTH: DURING** 17 ft. **COMP.** 19.5 ft. **DELAYED** 23.44 ft. after 100 hrs.
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 – 110 – 165)
		Utility Clearance (HYDROEXCAVATION)			Hydrovac 0-9' for utilities clearance	
5						
10		**Fat Clay (CH)** - mottled gray (10YR 6/1) and brownish yellow / dark yellowish orange (10YR 6/6) residuum moist, medium stiff, high plastic, very fine, zone of soft sandy lean clay @ approx. 12-13'				
15						
		Silty Sand (SM) - mottled white (10YR 8/1) and yellow (10YR 7/6) residuum wet, medium dense, non plastic, very fine to fine				
20						
		Clayey Sand (SC) - mottled white (10YR 8/1) and yellow (10YR 7/6) residuum wet, medium dense, non plastic, very fine to fine, cohesive				
25		**Fat Clay (CH)**				

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 / 110 / 165)
		- mottled gray (10YR 6/1) and strong brown (7.5YR 5/8) residuum moist, medium stiff to stiff, high plastic, very fine **Fat Clay (CH)** *(Con't)*				
		Silty Sand (SM) - mottled light gray (10YR 7/1) and brownish yellow / dark yellowish orange (10YR 6/6) residuum wet, medium dense, non plastic, very fine to fine, subangular to subrounded grains, trace zones of interbedded SC clayey sand				
30						
35		- light gray (10YR 7/1) residuum wet, medium dense, non plastic, very fine to medium				
		Poorly-graded Sand (SP) - trace mottling reddish yellow (7.5YR 6/8) and yellow (10YR 7/8) residuum wet, loose, non plastic, fine to medium, trace coarse to fine gravel sized grains, subangular to rounded grains				
40						
45						
		Poorly-graded Sand with Silt (SP-SM) - white (10YR 8/1) and light gray (10YR 7/1) residuum wet, loose, non plastic, very fine to medium, trace coarse grains, subangular to rounded grains				
50						
55						

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LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 / 110 / 165)
		Poorly-graded Sand with Silt (SP-SM) *(Con't)*				
60		- mottled white (10YR 8/1), light gray (10YR 7/1) and reddish yellow (7.5YR 6/8) residuum wet, loose, non plastic, very fine to medium, trace coarse grains				
65		- white (7.5YR 8/1) residuum wet, loose, non plastic, very fine to medium, slight increase in pinkish to orangish/coarse to fine gravel sized grains, subangular to rounded grains				
70		- white (7.5YR 8/1) residuum wet, loose, non plastic, very fine to medium, subangular to subrounded grains				
75						
80		**Silty Sand (SM)** - white (7.5YR 8/1) and pinkish gray (7.5YR 7/2) residuum wet, medium dense, non plastic, very fine to medium, subangular to subrounded grains				
		Clayey Sand (SC) - pinkish gray (7.5YR 7/2) and pink (7.5YR 7/4) residuum wet, medium dense, non plastic, very fine to fine				
85		**Well-graded Sand with Silt (SW-SM)** - white (7.5YR 8/1) residuum wet, loose, non plastic, very fine to				

(Continued Next Page)

LOG OF TEST BORING

SOUTHERN COMPANY

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 / 110 / 165)
		coarse, subangular to rounded grains **Well-graded Sand with Silt (SW-SM)** *(Con't)*				
		Well-graded Gravelly Sand (SW) - white (10YR 8/1) and yellow (10YR 7/6) residuum wet, loose, non plastic, medium to fine gravel, subangular to rounded grains				
90		**Clayey Sand (SC)** - gray (7.5YR 6/1) residuum wet, medium dense, non plastic, very fine to fine, subangular to subrounded, some organics/black wood fragments				
		Poorly-graded Sand with Silt (SP-SM) - reddish yellow (7.5YR 6/8) and pink (7.5YR 7/4) residuum wet, loose, non plastic, medium to coarse, subangular to subrounded, trace fine gravel				
95						
		Fat Clay (CH) - greenish gray (10Y 5/1) residuum wet, medium stiff to stiff, medium to high plastic, very fine, some interbedded lenses of CHS fat clay with sand to CLS lean clay with sand				
100						
105						
		Bottom of borehole at 107.0 feet.				
110						
115						

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DATE STARTED 7/13/2015 **COMPLETED** 7/23/2015 **SURF. ELEV.** 38.6 **COORDINATES:** N:377,498.29 E:1,070,602.68
CONTRACTOR Cascade Drilling **EQUIPMENT** **METHOD** Hydroexcavation; Sonic
DRILLED BY T. Ardito **LOGGED BY** B. Smelser **CHECKED BY** B. Coates **ANGLE** **BEARING**
BORING DEPTH 87 ft. **GROUND WATER DEPTH: DURING** 28 ft. **COMP.** 30 ft. **DELAYED** 33.68 ft. after 100 hrs.
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 – 110 – 165)
		Utility Clearance (HYDROEXCAVATION)			Hydrovac 0-10' for utilities clearance	
5						
10		**Sandy Silt (ML)** - brown (7.5YR 4/2) and strong brown (7.5YR 4/6) fill dry, medium stiff to stiff, non plastic, very fine to fine, trace clay				
15		**Sandy Lean Clay (CL)** - mottled light brown (7.5YR 6/4), gray (7.5YR 6/1) and reddish yellow (7.5YR 6/8) fill moist, stiff, low to medium plastic, very fine to fine, some silt, interbedded lenses of light gray SM silty sand				
20		- mottled light gray (7.5YR 7/1) and reddish yellow (7.5YR 6/8) fill moist, stiff, medium plastic, very fine, interbedded lenses of SM silty sand				
25		**Clayey Sand (SC)** - reddish yellow (7.5YR 7/6) and light gray (7.5YR 7/1) residuum moist, medium dense, non plastic, very fine to fine, interbedded lenses of SM silty sand, trace organics/wood fragments				
		Silty Sand (SM) - light brown (7.5YR 6/3) residuum moist, medium dense, non plastic, very fine to fine				
		Sandy Lean Clay (CL) ▽ - mottled reddish yellow (7.5YR 7/6) and light gray (7.5YR 7/1) residuum wet, stiff, low to medium plastic, very fine to fine				
30		**Clayey Sand (SC)** ▼ - brown (7.5YR 5/4) residuum wet, medium dense, non plastic, very				

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 / 110 / 165)
		fine to fine **Sandy Lean Clay (CL)** - mottled gray (7.5YR 6/1) and strong brown (7.5YR 4/6) residuum wet, stiff, low plastic, very fine to fine, trace interbedded lenses of SC clayey sand				
35		**Silty Sand (SM)** - light brownish gray / pale yellowish brown (10YR 6/2) and light gray (7.5YR 7/1) residuum wet, medium dense to loose, non plastic, very fine to fine, subangular to subrounded grains - reddish yellow (7.5YR 7/8) and pink (7.5YR 7/4) residuum wet, loose, non plastic, very fine to fine				
40						
45						
50		**Poorly-graded Sand with Silt (SP-SM)** - light gray (7.5YR 7/1) and gray (7.5YR 5/1) residuum wet, loose, non plastic, very fine to medium, subangular to subrounded grains, trace rounded coarse grains				
55						
60		**Silty Sand (SM)** - gray (7.5YR 6/1) and gray (7.5YR 5/1) residuum wet, loose, non plastic, fine to medium, subangular to subrounded grains, trace coarse/subrounded to rounded grains, abundant organics/wood fragments in zones, interbedded lenses of SP-SM and SC sand				
65						

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SOUTHERN COMPANY

LOG OF TEST BORING

BORING BAW-5
PAGE 3 OF 3
ECS41483, ECS41484, ECS41485

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Daniel CCR Drilling Logs
LOCATION Moss Point, MS

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	HCL REACTION (Weak / Moderate / Strong)	COMMENTS	Natural Gamma (55 / 110 / 165)
70		**Silty Sand (SM)** *(Con't)*				
		Low Plastic Organic Silt or Clay (OL)				
		- organics, minimal soil, layer of dark brown wood fragments				
		Sandy Fat Clay (CH)				
75		- gray (5Y 5/1) and olive gray / light olive gray (5Y 5/2) residuum wet, medium stiff, high plastic, very fine				
		Silt (ML)				
		- gray (5Y 5/1) and olive gray / light olive gray (5Y 5/2) residuum wet, medium stiff, non plastic, very fine to fine, interbedded lenses of SC clayey sand and CL sandy lean clay				
80						
85						
		Bottom of borehole at 87.0 feet.				
90						
95						
100						

GEOLOGY LOG COLOR GAMMA - ESEE DATABASE.GDT - 8/4/15 23:37 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\PLANT DANIEL CCR DRILLING LOGS.GPJ

Appendix B

Laboratory Analytical Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-90513-1
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Authorized for release by:
5/31/2019 4:02:43 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Job ID: 180-90513-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-90513-1

Comments
No additional comments.

Receipt
The samples were received on 5/24/2019 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 23.4º C.

Receipt Exceptions

The following sample was listed on the Chain of Custody (COC); however, no sample was received: LOCATION A 70.0-71.5 (180-90513-9).

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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Laboratory: Eurofins 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	06-27-19
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
South Carolina	State Program	4	89014	04-30-19 *
Texas	NELAP	6	T104704528-15-2	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-90513-1	LOCATION C 18.5-20'	Solid	05/21/19 13:30	05/24/19 08:40	
180-90513-2	LOCATION C 35.0-36.5'	Solid	05/21/19 13:35	05/24/19 08:40	
180-90513-3	LOCATION C 43.5-45.0	Solid	05/21/19 13:40	05/24/19 08:40	
180-90513-4	LOCATION C 55.0-56.5	Solid	05/21/19 14:10	05/24/19 08:40	
180-90513-5	LOCATION A 23.5-25.0	Solid	05/21/19 15:45	05/24/19 08:40	
180-90513-6	LOCATION A 30.0-31.5	Solid	05/21/19 15:55	05/24/19 08:40	
180-90513-7	LOCATION A 38.5-40.0	Solid	05/21/19 16:00	05/24/19 08:40	
180-90513-8	LOCATION A 50.0-51.5	Solid	05/21/19 16:15	05/24/19 08:40	
180-90513-10	LOCATION A 73.5-75.0	Solid	05/21/19 17:10	05/24/19 08:40	
180-90513-11	LOCATION A 77.0-78.5	Solid	05/21/19 17:20	05/24/19 08:40	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Method	Method Description	Protocol	Laboratory
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
2540G	SM 2540G	SM22	TAL PIT
3050B	Preparation, Metals	SW846	TAL PIT

Protocol References:

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

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

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Client Sample ID: LOCATION C 18.5-20'
Lab Sample ID: 180-90513-1
Date Collected: 05/21/19 13:30
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION C 18.5-20'
Lab Sample ID: 180-90513-1
Date Collected: 05/21/19 13:30
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 76.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.97 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 21:47	WTR	TAL PIT
	Instrument ID: M									

Client Sample ID: LOCATION C 35.0-36.5'
Lab Sample ID: 180-90513-2
Date Collected: 05/21/19 13:35
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION C 35.0-36.5'
Lab Sample ID: 180-90513-2
Date Collected: 05/21/19 13:35
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 76.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.96 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 21:51	WTR	TAL PIT
	Instrument ID: M									

Client Sample ID: LOCATION C 43.5-45.0
Lab Sample ID: 180-90513-3
Date Collected: 05/21/19 13:40
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION C 43.5-45.0
Lab Sample ID: 180-90513-3
Date Collected: 05/21/19 13:40
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 21:56	WTR	TAL PIT
	Instrument ID: M									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Client Sample ID: LOCATION C 55.0-56.5
Lab Sample ID: 180-90513-4
Date Collected: 05/21/19 14:10
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION C 55.0-56.5
Lab Sample ID: 180-90513-4
Date Collected: 05/21/19 14:10
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.98 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:01	WTR	TAL PIT
	Instrument ID: M									

Client Sample ID: LOCATION A 23.5-25.0
Lab Sample ID: 180-90513-5
Date Collected: 05/21/19 15:45
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION A 23.5-25.0
Lab Sample ID: 180-90513-5
Date Collected: 05/21/19 15:45
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 81.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:06	WTR	TAL PIT
	Instrument ID: M									

Client Sample ID: LOCATION A 30.0-31.5
Lab Sample ID: 180-90513-6
Date Collected: 05/21/19 15:55
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION A 30.0-31.5
Lab Sample ID: 180-90513-6
Date Collected: 05/21/19 15:55
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.99 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:10	WTR	TAL PIT
	Instrument ID: M									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Client Sample ID: LOCATION A 38.5-40.0
Lab Sample ID: 180-90513-7
Date Collected: 05/21/19 16:00
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION A 38.5-40.0
Lab Sample ID: 180-90513-7
Date Collected: 05/21/19 16:00
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.99 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:15	WTR	TAL PIT
	Instrument ID: M									

Client Sample ID: LOCATION A 50.0-51.5
Lab Sample ID: 180-90513-8
Date Collected: 05/21/19 16:15
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION A 50.0-51.5
Lab Sample ID: 180-90513-8
Date Collected: 05/21/19 16:15
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.99 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:38	WTR	TAL PIT
	Instrument ID: M									

Client Sample ID: LOCATION A 73.5-75.0
Lab Sample ID: 180-90513-10
Date Collected: 05/21/19 17:10
Matrix: Solid
Date Received: 05/24/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION A 73.5-75.0
Lab Sample ID: 180-90513-10
Date Collected: 05/21/19 17:10
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:20	WTR	TAL PIT
	Instrument ID: M									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Client Sample ID: LOCATION A 77.0-78.5
Date Collected: 05/21/19 17:20
Date Received: 05/24/19 08:40

Lab Sample ID: 180-90513-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			279868	05/28/19 09:50	RJP	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: LOCATION A 77.0-78.5
Date Collected: 05/21/19 17:20
Date Received: 05/24/19 08:40

Lab Sample ID: 180-90513-11
Matrix: Solid
Percent Solids: 78.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	100 mL	279942	05/28/19 20:13	NAM	TAL PIT
Total/NA	Analysis	EPA 6020		1	1.0 mL	1.0 mL	280342	05/30/19 22:57	WTR	TAL PIT
	Instrument ID: M									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

NAM = Nicole Marfisi

Batch Type: Analysis

RJP = Rockwell Pokrant

WTR = Bill Reinheimer

Client Sample ID: LOCATION C 18.5-20'
Lab Sample ID: 180-90513-1
Date Collected: 05/21/19 13:30
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.7		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	76.3		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION C 18.5-20'
Lab Sample ID: 180-90513-1
Date Collected: 05/21/19 13:30
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 76.3

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	5.77		0.675	0.373	mg/Kg	☼	05/28/19 20:13	05/30/19 21:47	1

Client Sample ID: LOCATION C 35.0-36.5'
Lab Sample ID: 180-90513-2
Date Collected: 05/21/19 13:35
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.4		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	76.6		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION C 35.0-36.5'
Lab Sample ID: 180-90513-2
Date Collected: 05/21/19 13:35
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 76.6

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	5.17		0.680	0.375	mg/Kg	☼	05/28/19 20:13	05/30/19 21:51	1

Client Sample ID: LOCATION C 43.5-45.0
Lab Sample ID: 180-90513-3
Date Collected: 05/21/19 13:40
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.7		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	83.3		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION C 43.5-45.0
Lab Sample ID: 180-90513-3
Date Collected: 05/21/19 13:40
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 83.3

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.15		0.600	0.331	mg/Kg	☼	05/28/19 20:13	05/30/19 21:56	1

Client Sample ID: LOCATION C 55.0-56.5
Lab Sample ID: 180-90513-4
Date Collected: 05/21/19 14:10
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.4		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION C 55.0-56.5
Lab Sample ID: 180-90513-4
Date Collected: 05/21/19 14:10
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	86.6		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION C 55.0-56.5
Lab Sample ID: 180-90513-4
Date Collected: 05/21/19 14:10
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 86.6

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.908		0.589	0.325	mg/Kg	☼	05/28/19 20:13	05/30/19 22:01	1

Client Sample ID: LOCATION A 23.5-25.0
Lab Sample ID: 180-90513-5
Date Collected: 05/21/19 15:45
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.4		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	81.6		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION A 23.5-25.0
Lab Sample ID: 180-90513-5
Date Collected: 05/21/19 15:45
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 81.6

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	3.59		0.607	0.335	mg/Kg	☼	05/28/19 20:13	05/30/19 22:06	1

Client Sample ID: LOCATION A 30.0-31.5
Lab Sample ID: 180-90513-6
Date Collected: 05/21/19 15:55
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.9		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	84.1		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION A 30.0-31.5
Lab Sample ID: 180-90513-6
Date Collected: 05/21/19 15:55
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 84.1

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	3.07		0.600	0.331	mg/Kg	☼	05/28/19 20:13	05/30/19 22:10	1

Client Sample ID: LOCATION A 38.5-40.0
Lab Sample ID: 180-90513-7
Date Collected: 05/21/19 16:00
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.1		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	82.9		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION A 38.5-40.0

Lab Sample ID: 180-90513-7
Date Collected: 05/21/19 16:00
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 82.9

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.854		0.609	0.336	mg/Kg	☼	05/28/19 20:13	05/30/19 22:15	1

Client Sample ID: LOCATION A 50.0-51.5

Lab Sample ID: 180-90513-8
Date Collected: 05/21/19 16:15
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.4		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	79.6		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION A 50.0-51.5

Lab Sample ID: 180-90513-8
Date Collected: 05/21/19 16:15
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 79.6

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.828		0.634	0.350	mg/Kg	☼	05/28/19 20:13	05/30/19 22:38	1

Client Sample ID: LOCATION A 73.5-75.0

Lab Sample ID: 180-90513-10
Date Collected: 05/21/19 17:10
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.8		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	82.2		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION A 73.5-75.0

Lab Sample ID: 180-90513-10
Date Collected: 05/21/19 17:10
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 82.2

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	2.57		0.608	0.336	mg/Kg	☼	05/28/19 20:13	05/30/19 22:20	1

Client Sample ID: LOCATION A 77.0-78.5

Lab Sample ID: 180-90513-11
Date Collected: 05/21/19 17:20
Matrix: Solid
Date Received: 05/24/19 08:40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.3		0.1	0.1	%			05/28/19 09:50	1
Percent Solids	78.7		0.1	0.1	%			05/28/19 09:50	1

Client Sample ID: LOCATION A 77.0-78.5

Lab Sample ID: 180-90513-11
Date Collected: 05/21/19 17:20
Matrix: Solid
Date Received: 05/24/19 08:40
Percent Solids: 78.7

Method: EPA 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	2.62		0.629	0.347	mg/Kg	☼	05/28/19 20:13	05/30/19 22:57	1

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-279942/1-A
Matrix: Solid
Analysis Batch: 280342

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 279942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.276		0.500	0.276	mg/Kg		05/28/19 20:13	05/30/19 21:37	1

Lab Sample ID: LCS 180-279942/2-A
Matrix: Solid
Analysis Batch: 280342

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 279942

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium			50.0	56.85		mg/Kg		114	80 - 120		

Lab Sample ID: 180-90513-8 MS
Matrix: Solid
Analysis Batch: 280342

Client Sample ID: LOCATION A 50.0-51.5
Prep Type: Total/NA
Prep Batch: 279942

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium	0.828		62.8	67.54		mg/Kg	☼	106	75 - 125		

Lab Sample ID: 180-90513-8 MSD
Matrix: Solid
Analysis Batch: 280342

Client Sample ID: LOCATION A 50.0-51.5
Prep Type: Total/NA
Prep Batch: 279942

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.828		63.4	69.14		mg/Kg	☼	108	75 - 125	2	20

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-90513-1

Metals

Prep Batch: 279942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90513-1	LOCATION C 18.5-20'	Total/NA	Solid	3050B	
180-90513-2	LOCATION C 35.0-36.5'	Total/NA	Solid	3050B	
180-90513-3	LOCATION C 43.5-45.0	Total/NA	Solid	3050B	
180-90513-4	LOCATION C 55.0-56.5	Total/NA	Solid	3050B	
180-90513-5	LOCATION A 23.5-25.0	Total/NA	Solid	3050B	
180-90513-6	LOCATION A 30.0-31.5	Total/NA	Solid	3050B	
180-90513-7	LOCATION A 38.5-40.0	Total/NA	Solid	3050B	
180-90513-8	LOCATION A 50.0-51.5	Total/NA	Solid	3050B	
180-90513-10	LOCATION A 73.5-75.0	Total/NA	Solid	3050B	
180-90513-11	LOCATION A 77.0-78.5	Total/NA	Solid	3050B	
MB 180-279942/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 180-279942/2-A	Lab Control Sample	Total/NA	Solid	3050B	
180-90513-8 MS	LOCATION A 50.0-51.5	Total/NA	Solid	3050B	
180-90513-8 MSD	LOCATION A 50.0-51.5	Total/NA	Solid	3050B	

Analysis Batch: 280342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90513-1	LOCATION C 18.5-20'	Total/NA	Solid	EPA 6020	279942
180-90513-2	LOCATION C 35.0-36.5'	Total/NA	Solid	EPA 6020	279942
180-90513-3	LOCATION C 43.5-45.0	Total/NA	Solid	EPA 6020	279942
180-90513-4	LOCATION C 55.0-56.5	Total/NA	Solid	EPA 6020	279942
180-90513-5	LOCATION A 23.5-25.0	Total/NA	Solid	EPA 6020	279942
180-90513-6	LOCATION A 30.0-31.5	Total/NA	Solid	EPA 6020	279942
180-90513-7	LOCATION A 38.5-40.0	Total/NA	Solid	EPA 6020	279942
180-90513-8	LOCATION A 50.0-51.5	Total/NA	Solid	EPA 6020	279942
180-90513-10	LOCATION A 73.5-75.0	Total/NA	Solid	EPA 6020	279942
180-90513-11	LOCATION A 77.0-78.5	Total/NA	Solid	EPA 6020	279942
MB 180-279942/1-A	Method Blank	Total/NA	Solid	EPA 6020	279942
LCS 180-279942/2-A	Lab Control Sample	Total/NA	Solid	EPA 6020	279942
180-90513-8 MS	LOCATION A 50.0-51.5	Total/NA	Solid	EPA 6020	279942
180-90513-8 MSD	LOCATION A 50.0-51.5	Total/NA	Solid	EPA 6020	279942

General Chemistry

Analysis Batch: 279868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90513-1	LOCATION C 18.5-20'	Total/NA	Solid	2540G	
180-90513-2	LOCATION C 35.0-36.5'	Total/NA	Solid	2540G	
180-90513-3	LOCATION C 43.5-45.0	Total/NA	Solid	2540G	
180-90513-4	LOCATION C 55.0-56.5	Total/NA	Solid	2540G	
180-90513-5	LOCATION A 23.5-25.0	Total/NA	Solid	2540G	
180-90513-6	LOCATION A 30.0-31.5	Total/NA	Solid	2540G	
180-90513-7	LOCATION A 38.5-40.0	Total/NA	Solid	2540G	
180-90513-8	LOCATION A 50.0-51.5	Total/NA	Solid	2540G	
180-90513-10	LOCATION A 73.5-75.0	Total/NA	Solid	2540G	
180-90513-11	LOCATION A 77.0-78.5	Total/NA	Solid	2540G	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Scott Baxter	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-51797-10856.1
Client Contact: Ms. Lauren Petty	Phone: 205-438-3572	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Southern Company				Job #:
Address: PO BOX 2641 GSC8	Due Date Requested:			
City: Birmingham	TAT Requested (days): 2 DAY TAT			
State, Zip: AL, 35291				
Phone: 205-992-5417(Tel)	PO #: SCS10382606			
Email: lmpetty@southernco.com	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site: Plant Daniel Ash Pond	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:

180-90513 Chain of Custody

Sample Identification	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)	6020 - Lithium ; Percent Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
LOCATION C 18.5-20'	5/21/2019	1330	G	Solid			X		
LOCATION C 35.0-36.5'	5/21/2019	1335	G	Solid			X		
LOCATION C 43.5-45.0	5/21/2019	1340	G	Solid			X		
LOCATION C 55.0-56.5'	5/21/2019	1410	G	Solid			X		
LOCATION A 23.5-25.0	5/21/2019	1545	G	Solid			X		
LOCATION A 30.0-31.5	5/21/2019	1555	G	Solid			X		
LOCATION A 38.5-40.0	5/21/2019	1600	G	Solid			X		
LOCATION A 50.0-51.5	5/21/2019	1615	G	Solid			X		
LOCATION A 70.0-71.5	5/21/2019	1700	G	Solid			X		
LOCATION A 73.5-75.0	5/21/2019	1710	G	Solid			X		
LOCATION A 77.0-78.5	5/21/2019	1720	G	Solid			X		

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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)

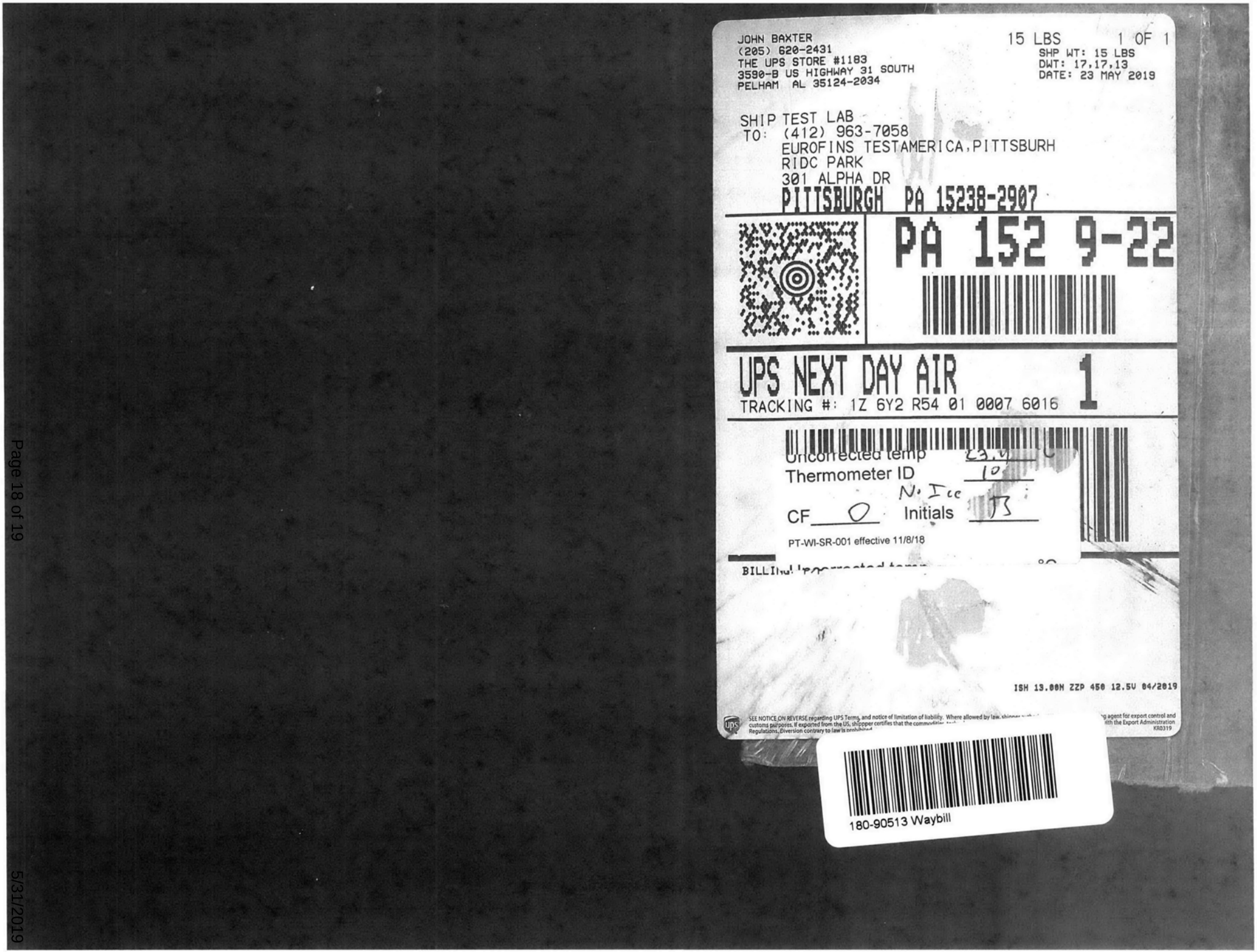
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/23/2019 1145			5/24/19 840	DAI
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:

Ver: 01/16/2019


JOHN BAXTER
(205) 620-2431
THE UPS STORE #1183
3590-B US HIGHWAY 31 SOUTH
PELHAM AL 35124-2034
15 LBS 1 OF 1
SHP WT: 15 LBS
DWT: 17,17,13
DATE: 23 MAY 2019
SHIP TEST LAB
TO: (412) 963-7058
EUROFINS TESTAMERICA,PITTSBURH
RIDC PARK
301 ALPHA DR
PITTSBURGH PA 15238-2907
PA 152 9-22
UPS NEXT DAY AIR
1
TRACKING #: 1Z 6Y2 R54 01 0007 6016
Uncorrected temp
Thermometer ID
CF
Initials
PT-WI-SR-001 effective 11/8/18
ISH 13.00M ZZP 450 12.5U 04/2019
180-90513 Waybill

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-90513-1

Login Number: 90513
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

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	

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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-91066-1
Laboratory Sample Delivery Group: 1
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Veronica Bortot

Authorized for release by:
6/17/2019 9:59:40 AM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

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Case Narrative

Client: Southern Company
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Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-91066-1

Comments
No additional comments.

Receipt
The samples were received on 6/7/2019 3:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

Anions
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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

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Qualifiers

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
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Laboratory: Eurofins 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	06-27-19
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Kentucky (DW)	Kentucky UST	4	162013	04-30-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
South Carolina	State Program	4	89014	04-30-20
Texas	NELAP	6	T104704528-15-2	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-91066-1	BAW-1	Water	06/06/19 09:42	06/07/19 15:45	
180-91066-2	BAW-2A	Water	06/06/19 10:40	06/07/19 15:45	
180-91066-3	BAW-5	Water	06/06/19 12:00	06/07/19 15:45	
180-91066-4	DUP-01	Water	06/06/19 08:42	06/07/19 15:45	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

Protocol References:

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Client Sample ID: BAW-1
Date Collected: 06/06/19 09:42
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-1
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	EPA 9056A		1			281171	06/10/19 12:46	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	281262	06/10/19 12:53	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			281393	06/11/19 12:42	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	281415	06/11/19 15:26	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			281622	06/12/19 00:05	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-2A
Date Collected: 06/06/19 10:40
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-2
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	EPA 9056A		1			281171	06/10/19 13:01	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	281262	06/10/19 12:53	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			281393	06/11/19 12:45	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	281415	06/11/19 15:26	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			281622	06/12/19 00:16	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: BAW-5
Date Collected: 06/06/19 12:00
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-3
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	EPA 9056A		1			281171	06/10/19 13:17	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	281262	06/10/19 12:53	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			281393	06/11/19 12:48	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	281415	06/11/19 15:26	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			281622	06/12/19 00:21	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Client Sample ID: DUP-01
Date Collected: 06/06/19 08:42
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-4
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	EPA 9056A		1			281171	06/10/19 13:33	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	281262	06/10/19 12:54	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			281393	06/11/19 12:51	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	281415	06/11/19 15:26	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			281622	06/12/19 00:27	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

NAM = Nicole Marfisi

Batch Type: Analysis

AVS = Abbey Smith

MJH = Matthew Hartman

RSK = Robert Kurtz

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Client Sample ID: BAW-1

Date Collected: 06/06/19 09:42
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-1

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.04		1.00	0.715	mg/L			06/10/19 12:46	1
Sulfate	1.35		1.00	0.380	mg/L			06/10/19 12:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0384	J B	0.0800	0.0303	mg/L		06/10/19 12:53	06/11/19 12:42	1
Calcium	0.947	B	0.500	0.116	mg/L		06/10/19 12:53	06/11/19 12:42	1
Potassium	0.551		0.500	0.147	mg/L		06/10/19 12:53	06/11/19 12:42	1
Magnesium	0.674		0.500	0.0827	mg/L		06/10/19 12:53	06/11/19 12:42	1
Sodium	3.67		0.500	0.251	mg/L		06/10/19 12:53	06/11/19 12:42	1
Lithium	0.00395	J	0.00500	0.00314	mg/L		06/10/19 12:53	06/11/19 12:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	17.0		10.0	10.0	mg/L			06/11/19 15:26	1
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/12/19 00:05	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:05	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:05	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/12/19 00:05	1

Client Sample ID: BAW-2A

Date Collected: 06/06/19 10:40
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-2

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.00		1.00	0.715	mg/L			06/10/19 13:01	1
Sulfate	2.83		1.00	0.380	mg/L			06/10/19 13:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0418	J B	0.0800	0.0303	mg/L		06/10/19 12:53	06/11/19 12:45	1
Calcium	0.681	B	0.500	0.116	mg/L		06/10/19 12:53	06/11/19 12:45	1
Potassium	0.572		0.500	0.147	mg/L		06/10/19 12:53	06/11/19 12:45	1
Magnesium	0.846		0.500	0.0827	mg/L		06/10/19 12:53	06/11/19 12:45	1
Sodium	5.12		0.500	0.251	mg/L		06/10/19 12:53	06/11/19 12:45	1
Lithium	<0.00314		0.00500	0.00314	mg/L		06/10/19 12:53	06/11/19 12:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	13.0		10.0	10.0	mg/L			06/11/19 15:26	1
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/12/19 00:16	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:16	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:16	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/12/19 00:16	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Client Sample ID: BAW-5

Date Collected: 06/06/19 12:00
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-3

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.50**		1.00	0.715	mg/L			06/10/19 13:17	1
Sulfate	**3.24**		1.00	0.380	mg/L			06/10/19 13:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.154**	**B**	0.0800	0.0303	mg/L		06/10/19 12:53	06/11/19 12:48	1
Calcium	**13.5**	**B**	0.500	0.116	mg/L		06/10/19 12:53	06/11/19 12:48	1
Potassium	**1.60**		0.500	0.147	mg/L		06/10/19 12:53	06/11/19 12:48	1
Magnesium	**0.910**		0.500	0.0827	mg/L		06/10/19 12:53	06/11/19 12:48	1
Sodium	**6.95**		0.500	0.251	mg/L		06/10/19 12:53	06/11/19 12:48	1
Lithium	**0.160**		0.00500	0.00314	mg/L		06/10/19 12:53	06/11/19 12:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**60.0**		10.0	10.0	mg/L			06/11/19 15:26	1
Total Alkalinity as CaCO3 to pH 4.	**47.7**		5.00	5.00	mg/L			06/12/19 00:21	1
Bicarbonate Alkalinity as CaCO3	**47.7**		5.00	5.00	mg/L			06/12/19 00:21	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:21	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/12/19 00:21	1

Client Sample ID: DUP-01

Date Collected: 06/06/19 08:42
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91066-4

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.08**		1.00	0.715	mg/L			06/10/19 13:33	1
Sulfate	**1.45**		1.00	0.380	mg/L			06/10/19 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.0303		0.0800	0.0303	mg/L		06/10/19 12:54	06/11/19 12:51	1
Calcium	**0.993**	**B**	0.500	0.116	mg/L		06/10/19 12:54	06/11/19 12:51	1
Potassium	**0.533**		0.500	0.147	mg/L		06/10/19 12:54	06/11/19 12:51	1
Magnesium	**0.668**		0.500	0.0827	mg/L		06/10/19 12:54	06/11/19 12:51	1
Sodium	**3.66**		0.500	0.251	mg/L		06/10/19 12:54	06/11/19 12:51	1
Lithium	**0.00316**	**J**	0.00500	0.00314	mg/L		06/10/19 12:54	06/11/19 12:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**20.0**		10.0	10.0	mg/L			06/11/19 15:26	1
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/12/19 00:27	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:27	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:27	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/12/19 00:27	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-281171/6
Matrix: Water
Analysis Batch: 281171

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			06/10/19 06:26	1
Sulfate	<0.380		1.00	0.380	mg/L			06/10/19 06:26	1

Lab Sample ID: LCS 180-281171/5
Matrix: Water
Analysis Batch: 281171

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.50		mg/L		102	80 - 120
Sulfate	25.0	25.59		mg/L		102	80 - 120

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-281262/1-A
Matrix: Water
Analysis Batch: 281393

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 281262

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.04770	J	0.0800	0.0303	mg/L		06/10/19 12:53	06/11/19 10:40	1
Calcium	0.1367	J	0.500	0.116	mg/L		06/10/19 12:53	06/11/19 10:40	1
Potassium	<0.147		0.500	0.147	mg/L		06/10/19 12:53	06/11/19 10:40	1
Magnesium	<0.0827		0.500	0.0827	mg/L		06/10/19 12:53	06/11/19 10:40	1
Sodium	<0.251		0.500	0.251	mg/L		06/10/19 12:53	06/11/19 10:40	1
Lithium	<0.00314		0.00500	0.00314	mg/L		06/10/19 12:53	06/11/19 10:40	1

Lab Sample ID: LCS 180-281262/2-A
Matrix: Water
Analysis Batch: 281393

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 281262

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.275		mg/L		102	80 - 120
Calcium	25.0	25.02		mg/L		100	80 - 120
Potassium	25.0	24.03		mg/L		96	80 - 120
Magnesium	25.0	24.22		mg/L		97	80 - 120
Sodium	25.0	24.89		mg/L		100	80 - 120
Lithium	0.500	0.4680		mg/L		94	80 - 120

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

Lab Sample ID: MB 180-281415/2
Matrix: Water
Analysis Batch: 281415

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	<10.0		10.0	10.0	mg/L			06/11/19 15:26	1

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

Lab Sample ID: LCS 180-281415/1
Matrix: Water
Analysis Batch: 281415

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	201	178.0		mg/L		89	80 - 120

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-281622/141
Matrix: Water
Analysis Batch: 281622

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1

Lab Sample ID: MB 180-281622/85
Matrix: Water
Analysis Batch: 281622

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1

Lab Sample ID: LCS 180-281622/140
Matrix: Water
Analysis Batch: 281622

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	251.2		mg/L		100	90 - 110

Lab Sample ID: LCS 180-281622/84
Matrix: Water
Analysis Batch: 281622

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	244.7		mg/L		98	90 - 110

Lab Sample ID: 180-91066-1 DU
Matrix: Water
Analysis Batch: 281622

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	<5.00		<5.00		mg/L		NC	20
Bicarbonate Alkalinity as CaCO3	<5.00		<5.00		mg/L		NC	20
Carbonate Alkalinity as CaCO3	<5.00		<5.00		mg/L		NC	20
Phenolphthalein Alkalinity	<5.00		<5.00		mg/L		NC	20

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

Method: SM2320 B - Alkalinity, Total (Continued)

Lab Sample ID: 180-91066-1 DU
Matrix: Water
Analysis Batch: 281622

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	<5.00			<5.00		mg/L				NC	20
Bicarbonate Alkalinity as CaCO3	<5.00			<5.00		mg/L				NC	20
Carbonate Alkalinity as CaCO3	<5.00			<5.00		mg/L				NC	20
Phenolphthalein Alkalinity	<5.00			<5.00		mg/L				NC	20

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91066-1
SDG: 1

HPLC/IC

Analysis Batch: 281171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91066-1	BAW-1	Total/NA	Water	EPA 9056A	
180-91066-2	BAW-2A	Total/NA	Water	EPA 9056A	
180-91066-3	BAW-5	Total/NA	Water	EPA 9056A	
180-91066-4	DUP-01	Total/NA	Water	EPA 9056A	
MB 180-281171/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-281171/5	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 281262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91066-1	BAW-1	Total Recoverable	Water	3005A	
180-91066-2	BAW-2A	Total Recoverable	Water	3005A	
180-91066-3	BAW-5	Total Recoverable	Water	3005A	
180-91066-4	DUP-01	Total Recoverable	Water	3005A	
MB 180-281262/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-281262/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 281393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91066-1	BAW-1	Total Recoverable	Water	EPA 6020	281262
180-91066-2	BAW-2A	Total Recoverable	Water	EPA 6020	281262
180-91066-3	BAW-5	Total Recoverable	Water	EPA 6020	281262
180-91066-4	DUP-01	Total Recoverable	Water	EPA 6020	281262
MB 180-281262/1-A	Method Blank	Total Recoverable	Water	EPA 6020	281262
LCS 180-281262/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	281262

General Chemistry

Analysis Batch: 281415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91066-1	BAW-1	Total/NA	Water	SM 2540C	
180-91066-2	BAW-2A	Total/NA	Water	SM 2540C	
180-91066-3	BAW-5	Total/NA	Water	SM 2540C	
180-91066-4	DUP-01	Total/NA	Water	SM 2540C	
MB 180-281415/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-281415/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 281622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91066-1	BAW-1	Total/NA	Water	SM2320 B	
180-91066-2	BAW-2A	Total/NA	Water	SM2320 B	
180-91066-3	BAW-5	Total/NA	Water	SM2320 B	
180-91066-4	DUP-01	Total/NA	Water	SM2320 B	
MB 180-281622/141	Method Blank	Total/NA	Water	SM2320 B	
MB 180-281622/85	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-281622/140	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-281622/84	Lab Control Sample	Total/NA	Water	SM2320 B	
180-91066-1 DU	BAW-1	Total/NA	Water	SM2320 B	
180-91066-1 DU	BAW-1	Total/NA	Water	SM2320 B	

301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

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Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-52125-10911.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc		Analysis Requested		Job #:
Address: 5720 Dove Drive	Due Date 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)
City: Pace	TAT Requested (days): 2 Day Rush			
State, Zip: FL, 32571				
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested			Other:
Email: rickhagendorfer@gmail.com	WO #:			
Project Name: CCR - Plant Daniel	Project #: 18020047			
Site:	SSOW#:			

Sample Identification	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)	2320B, 9056A_ORGFM_28D, SM4500_H+	6020 - B,Ca,,Li,K, Mg, Na	2540C_Calcd - TDS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N		
BAW-1	6/6/19	0942	G	Water			X	X	X		
BAW-2A	↓	1040	↓	Water			↓	↓	↓		
BAW-3	↓	1200	↓	Water			↓	↓	↓		
DUP-01	6/6/19	0842	G	Water			X	X	X		
				Water							
				Water							

180-91066 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	6/6/19 1500	RDH		6/7/19 1545	
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:

2.1 CF=0.0 2.1 M...

Ver: 01/16/2019

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6/17/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-91066-1
SDG Number: 1

Login Number: 91066
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

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	

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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-91067-1
Laboratory Sample Delivery Group: 1
Client Project/Site: CCR - Plant Daniel

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Veronica Bortot

Authorized for release by:
6/17/2019 9:59:14 AM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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.

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Job ID: 180-91067-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-91067-1

Comments
No additional comments.

Receipt
The sample was received on 6/7/2019 3:45 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

Anions
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.

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Qualifiers

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)

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Laboratory: Eurofins 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	06-27-19
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Kentucky (DW)	Kentucky UST	4	162013	04-30-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
South Carolina	State Program	4	89014	04-30-20
Texas	NELAP	6	T104704528-15-2	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-91067-1	PZ-1	Water	06/06/19 08:40	06/07/19 15:45	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

Protocol References:

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Client Sample ID: PZ-1
Date Collected: 06/06/19 08:40
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91067-1
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	EPA 9056A		1			281171	06/10/19 13:49	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	281262	06/10/19 12:53	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			281393	06/11/19 12:32	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	281415	06/11/19 15:26	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			281622	06/12/19 00:33	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

NAM = Nicole Marfisi

Batch Type: Analysis

AVS = Abbey Smith

MJH = Matthew Hartman

RSK = Robert Kurtz

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

Client Sample ID: PZ-1

Date Collected: 06/06/19 08:40
Date Received: 06/07/19 15:45

Lab Sample ID: 180-91067-1

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.9		1.00	0.715	mg/L			06/10/19 13:49	1
Sulfate	130		1.00	0.380	mg/L			06/10/19 13:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.31	B	0.0800	0.0303	mg/L		06/10/19 12:53	06/11/19 12:32	1
Calcium	48.1	B	0.500	0.116	mg/L		06/10/19 12:53	06/11/19 12:32	1
Potassium	2.36		0.500	0.147	mg/L		06/10/19 12:53	06/11/19 12:32	1
Magnesium	0.477	J	0.500	0.0827	mg/L		06/10/19 12:53	06/11/19 12:32	1
Sodium	59.9		0.500	0.251	mg/L		06/10/19 12:53	06/11/19 12:32	1
Lithium	0.00814		0.00500	0.00314	mg/L		06/10/19 12:53	06/11/19 12:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	311		10.0	10.0	mg/L			06/11/19 15:26	1
Total Alkalinity as CaCO3 to pH 4.5	81.2		5.00	5.00	mg/L			06/12/19 00:33	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 00:33	1
Carbonate Alkalinity as CaCO3	74.7		5.00	5.00	mg/L			06/12/19 00:33	1
Phenolphthalein Alkalinity	43.8		5.00	5.00	mg/L			06/12/19 00:33	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-281171/6
Matrix: Water
Analysis Batch: 281171

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.715		1.00	0.715	mg/L			06/10/19 06:26	1
Sulfate	<0.380		1.00	0.380	mg/L			06/10/19 06:26	1

Lab Sample ID: LCS 180-281171/5
Matrix: Water
Analysis Batch: 281171

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.50		mg/L		102	80 - 120
Sulfate	25.0	25.59		mg/L		102	80 - 120

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-281262/1-A
Matrix: Water
Analysis Batch: 281393

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 281262

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.04770	J	0.0800	0.0303	mg/L		06/10/19 12:53	06/11/19 10:40	1
Calcium	0.1367	J	0.500	0.116	mg/L		06/10/19 12:53	06/11/19 10:40	1
Potassium	<0.147		0.500	0.147	mg/L		06/10/19 12:53	06/11/19 10:40	1
Magnesium	<0.0827		0.500	0.0827	mg/L		06/10/19 12:53	06/11/19 10:40	1
Sodium	<0.251		0.500	0.251	mg/L		06/10/19 12:53	06/11/19 10:40	1
Lithium	<0.00314		0.00500	0.00314	mg/L		06/10/19 12:53	06/11/19 10:40	1

Lab Sample ID: LCS 180-281262/2-A
Matrix: Water
Analysis Batch: 281393

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 281262

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.275		mg/L		102	80 - 120
Calcium	25.0	25.02		mg/L		100	80 - 120
Potassium	25.0	24.03		mg/L		96	80 - 120
Magnesium	25.0	24.22		mg/L		97	80 - 120
Sodium	25.0	24.89		mg/L		100	80 - 120
Lithium	0.500	0.4680		mg/L		94	80 - 120

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

Lab Sample ID: MB 180-281415/2
Matrix: Water
Analysis Batch: 281415

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	<10.0		10.0	10.0	mg/L			06/11/19 15:26	1

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

Lab Sample ID: LCS 180-281415/1
Matrix: Water
Analysis Batch: 281415

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	201	178.0		mg/L		89	80 - 120

Lab Sample ID: 180-91067-1 DU
Matrix: Water
Analysis Batch: 281415

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	311		308.0		mg/L		1	10

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-281622/141
Matrix: Water
Analysis Batch: 281622

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/12/19 05:20	1

Lab Sample ID: MB 180-281622/85
Matrix: Water
Analysis Batch: 281622

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1
Carbonate Alkalinity as CaCO3	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1
Phenolphthalein Alkalinity	<5.00		5.00	5.00	mg/L			06/11/19 23:59	1

Lab Sample ID: LCS 180-281622/140
Matrix: Water
Analysis Batch: 281622

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	251.2		mg/L		100	90 - 110

Lab Sample ID: LCS 180-281622/84
Matrix: Water
Analysis Batch: 281622

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	244.7		mg/L		98	90 - 110

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Daniel

Job ID: 180-91067-1
SDG: 1

HPLC/IC

Analysis Batch: 281171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91067-1	PZ-1	Total/NA	Water	EPA 9056A	
MB 180-281171/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-281171/5	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 281262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91067-1	PZ-1	Total Recoverable	Water	3005A	
MB 180-281262/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-281262/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 281393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91067-1	PZ-1	Total Recoverable	Water	EPA 6020	281262
MB 180-281262/1-A	Method Blank	Total Recoverable	Water	EPA 6020	281262
LCS 180-281262/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	281262

General Chemistry

Analysis Batch: 281415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91067-1	PZ-1	Total/NA	Water	SM 2540C	
MB 180-281415/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-281415/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-91067-1 DU	PZ-1	Total/NA	Water	SM 2540C	

Analysis Batch: 281622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-91067-1	PZ-1	Total/NA	Water	SM2320 B	
MB 180-281622/141	Method Blank	Total/NA	Water	SM2320 B	
MB 180-281622/85	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-281622/140	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-281622/84	Lab Control Sample	Total/NA	Water	SM2320 B	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Philip Evans	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-52125-10911.1
Client Contact: Rick Hagendorfer	Phone: 850-336-0192	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: RDH Environmental Services Inc				Job #:

Address: 5720 Dove Drive	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Pace	TAT Requested (days): 2 day Rush		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: FL, 32571			
Phone: 205-992-5417(Tel)	PO #: Purchase Order Requested		Other:
Email: rickhagendorfer@gmail.com	WO #:		
Project Name: CCR - Plant Daniel	Project #: 18020047		
Site:	SSOW#:		

Sample Identification	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)	2320B, 9056A_ORGFM_28D, SM4500_H+	6020 - B,Ca,,Li,K, Mg, Na	2540C_Calcd - TDS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N		
PZ-1	6/6/19	0840	G	Water			X	X	X		
				Water							
				Water							
				Water							
				Water							
				Water							

180-91067 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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
	6/6/19 1500	RDH		6/7/19 1545	TMATBT
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: 2.1°C CF:0.0 Therm ID: CF:0

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-91067-1
SDG Number: 1

Login Number: 91067
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

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	