2020 Semi-Annual Groundwater Monitoring and Corrective Action Report

Georgia Power Company – Plant Arkwright

Ash Pond 2 Dry Ash Stockpile
Project No.: 6122201429

Prepared for:

Georgia Power

Atlanta, Georgia

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CERTIFICATION STATEMENT

This *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Company Plant Arkwright - Ash Pond 2 Dry Ash Stockpile* has been prepared in compliance with Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 and 391-3-4-.14 under the supervision of a licensed professional engineer and a licensed professional geologist with Wood Environment & Infrastructure Solutions, Inc.

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SUMMARY

This summary of the *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report* provides the status of groundwater monitoring and corrective action program through December 2020 at Georgia Power Company's (Georgia Power's) Plant Arkwright Ash Pond 2 Dry Ash Stockpile (AP-2 DAS). This summary was prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood) on behalf of Georgia Power to meet the requirements listed in Georgia Environmental Protection Division Rules of Solid Waste Management 391-3-4-.10(6)(a)-(c) and 391-3-4-.14.

Plant Arkwright is located in Bibb County, Georgia approximately 6 miles northwest of the city of Macon. The physical address of the plant is Plant Arkwright Macon, GA 31211. When in operation, Plant Arkwright consisted of four 40-megawatt units. In years before retirement, the plant was used primarily to provide peaking power and operated approximately 40 to 60 days per year. The Plant Arkwright coal-fired power plant was retired in 2002 and decommissioned in 2003. The 11-acre AP-2 DAS is located between Arkwright Road to the north and Beaverdam Creek in the south and is shown on Figure 1. Georgia Power officially closed the AP-2 DAS in 2010 with EPD's approval and in accordance with the solid waste landfill regulations specified by GA EPD 391-3-4, in effect at the time of its closure.

Figure 1: Ash Pond 2 Dry Ash Stockpile at Plant Arkwright

The groundwater monitoring program for AP-2 DAS is managed in accordance with the landfill's Solid Waste Permit No. 011-031D(LI), as issued by the Georgia Environmental Protection Division (GA EPD), and in accordance with Georgia Solid Waste Management Rules for Groundwater Monitoring and Corrective Action of a municipal solid waste landfill, Rule 391-3-4.14. AP-2 DAS is also subject to the USEPA CCR rule and the GA EPD Rules for Solid Waste Management 391-3-4-.10. Groundwater at AP-2 DAS is monitored using a compliance well monitoring system comprised of 2 upgradient (ARGWA-19, ARGWA-20) and 3 downgradient wells (ARGWC-21, ARGWC-22, and ARGWC-23) installed between December 2008 and November 2019 that meet federal and state monitoring requirements. Routine sampling and reporting began after the background groundwater conditions were established between August 2016 and October 2018 for wells ARGWA-19, ARGWA-20, and ARGWC-21, and between December 2019 and September 2020 for wells ARGWC-22 and ARGWC-23. Based on groundwater conditions at AP-2 DAS, an assessment monitoring program and assessment of corrective measures were established on November 13, 2019 and July 9, 2020, respectively. During the 2020 reporting period, AP-2 DAS remained in assessment monitoring as corrective measures were evaluated.

During the 2020 semi-annual reporting period, Wood conducted two assessment groundwater sampling events in August and September/October. The August 2020 event was an annual assessment screening for Appendix IV constituents. Groundwater samples were submitted to TestAmerica Laboratories, Inc., for analysis. Per the CCR rule, groundwater results for the September/October 2020 data were evaluated in accordance with the certified statistical methods. That evaluation showed statistically significant values of Appendix III[1] and Appendix IV[2] parameters in wells provided in the table below.

Appendix III Parameters	**September/October 2020**
Boron	ARGWC-21, ARGWC-22, ARGWC-23
Calcium	ARGWC-21, ARGWC-22, ARGWC-23
Fluoride	ARGWC-23
pH	ARGWC-23
Sulfate	ARGWC-21, ARGWC-22, ARGWC-23
TDS	ARGWC-21, ARGWC-22, ARGWC-23
Appendix IV Parameters	**September/October 2020**
Cobalt	ARGWC-22
Lithium	ARGWC-23
Molybdenum	ARGWC-23

Based on review of the Appendix III and Appendix IV statistical results completed for the groundwater monitoring and corrective action program from July through December 2020, the Site will continue in assessment monitoring along with assessment of corrective measures. Georgia Power will continue routine groundwater monitoring and reporting at the Site. Reports will be provided to EPD semi-annually.

[1] Boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS)

[2] Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, and radium 226 + 228

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1.0 INTRODUCTION

In accordance with the Georgia Environmental Protection Division (GA EPD) Rules of Solid Waste Management 391-3-4-.10(6)(a)-(c) and 391-3-4-.14, this *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report* has been prepared to document groundwater monitoring activities conducted at Georgia Power Company's (GPC) former Plant Arkwright Ash Pond 2 Dry Ash Stockpile (AP-2DAS). To specify groundwater monitoring requirements, GA EPD Rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (US EPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D. For ease of reference, the US EPA CCR rules are cited within this report.

Groundwater monitoring and reporting for Plant Arkwright AP-2DAS are performed in accordance with the monitoring requirements of § 257.90 through § 257.95 and the Georgia EPD Rule 391-3-4-.10(6)(a)-(c) and in accordance with EPD Rule 391-3-4-.14. This semi-annual report documents the activities completed during the second half of 2020. Two monitoring events were conducted during this monitoring period: (1) an assessment monitoring constituent screening event was conducted in August 2020, and (2) the subsequent semi-annual assessment monitoring event was conducted in September/October 2020. The installation and sampling of two new delineation piezometers was conducted in November and December 2020.

Due to statistically significant levels (SSLs) of lithium in well ARGWC-21 (October 2019) and cobalt in well ARGWC-22 (April 2020) identified in the *2020 Annual Groundwater Monitoring and Corrective Action Report* (Wood, 2020a), Georgia Power initiated an assessment of corrective measures (ACM) for AP-2 DAS on July 9, 2020 pursuant to EPD Rule 391-3-4-.10(6). In accordance with § 257.96(b), an Assessment of Corrective Measures Report for the cobalt in well ARGWC-22 was prepared and submitted to Georgia EPD in December 2020 (Wood, 2020b). A risk assessment report was also submitted in December 2020 as an Appendix to the ACM report. The risk assessment report concluded that concentrations of cobalt detected in groundwater at AP-2 DAS are not expected to pose a risk to human health or the environment. Surface water samples collected from Beaverdam Creek during this reporting period show that cobalt is delineated horizontally to below GWPS at the Site.

1.1 Site Description and Background

Plant Arkwright is located in Bibb County, Georgia approximately 6 miles northwest of the city of Macon (**Figure 1: Site Location Map**). The physical address of the plant is Plant Arkwright Macon, GA 31211. When in operation, Plant Arkwright consisted of four 40-megawatt units. In years before retirement, the plant was used primarily to provide peaking power and operated approximately 40 to 60 days per year. The Plant Arkwright coal-fired power plant was retired in

2002 and decommissioned in 2003. The 11-acre AP-2 DAS is located between Arkwright Road to the north and Beaverdam Creek in the south.

AP-2 DAS was in operation in the 1950s. Soil was placed over AP-2 DAS as a closure measure and was estimated to be closed in-place in the late 1970s to early 1980s. GPC officially closed the AP-2 DAS in 2010 with GA EPD's approval and in accordance with the solid waste landfill regulations specified by GA EPD Rule 391-3-4, in effect at the time of its closure. A closure certificate was issued by GA EPD for AP-2 DAS on June 30, 2010. The Closure Certificate initiated the post-closure care period for the CCR unit. Post closure care has been performed in accordance with the GA EPD Permit No. 011-031D(LI) following closure. AP-2 DAS is subject to the requirements of relevant portions of GA EPD 391-3-4-.10. The CCR unit referred to as AP-2 DAS is defined as an inactive CCR Landfill per GA EPD Rule 391-3-4-.10(2)(a)(3).

AP-2 DAS is exempt from the requirements in 40 CFR Part 257 Subpart D – Standard for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments in accordance with §257.50 (d) and (e), which states that the subpart does not apply to CCR landfills that have ceased receiving CCR prior to October 19, 2015. These CCR units are, however, subject to the requirements of relevant portions of Georgia EPD 391-3-4-.10.

Semi-annual groundwater monitoring at AP-2 DAS is performed for an approved list of analytes in accordance with the post-closure care period requirements of GA EPD Permit #: 011-031D(LI). The Permit lists Appendix I constituents as arsenic, barium, cadmium, chloride, lead, selenium, silver, and sulfate and were analyzed during the September/October 2020 semi-annual event. A minor modification approved by GA EPD on August 9, 2017 added the Appendix III and IV constituents to the groundwater monitoring plan. The Appendix I constituents overlap with the Appendix III and IV constituents, with the exception of silver. To meet the new requirements of GA EPD rule 391-3-4-.10, a permit application package for the Site was submitted to GA EPD in November 2018 and is currently under review.

1.2 Regional Geology & Hydrogeologic Setting

The geology and hydrogeology of the Plant Arkwright AP-2 DAS are summarized below. The Plant Arkwright Site is located along the southern edge of the Washington Slope physiographic district within the Piedmont Physiographic Province (Clark and Zisa, 1976). The Washington Slope is characterized by a gently undulating surface which generally slopes to the south and southeast toward the Coastal Plain Physiographic Province located approximately 3.8 miles to the southeast of the Site.

Topography of the Washington Slope ranges from approximately 700 feet above sea level in the areas of southern Atlanta and Athens to approximately 300 feet above sea level at its southern

limit along the Georgia Fall Line. Streams follow the structure of underlying crystalline rocks eastward toward the Ocmulgee River. Relief throughout the district is between 50 and 100 feet with the greatest relief being along the Ocmulgee River with steep walled valleys with elevation changes between 150 – 200 feet (Clark and Zisa, 1976). Ultimately, the area surface water flow is directed toward the Ocmulgee River.

Bedrock in the region is composed of moderate- to high-grade metamorphic rocks, consisting of biotite-granite gneiss, schist, and amphibolite, and igneous rocks like granite. In the southernmost Piedmont, in the area of the Site, bedrock is predominantly composed of biotite gneiss. Major geologic structures in the region include the Ocmulgee fault, located approximately 7 miles to the northwest of the Site which strikes mostly northeast – southwest. The top of bedrock surface is highly weathered and where exposed is generally soft and friable (LeGrand, 1962).

1.2.1 Site Geology

The general geology beneath AP-2 DAS consists of clays, silty and sandy clays, silty sands, sandy silts, and minor gravel at depth, underlain by silty sand saprolite and bedrock. Historic borings indicate bedrock occurs at depths ranging from approximately 14 feet to 63 feet below ground surface, and consists of weathered quartzofeldspathic gneiss, hornblende gneiss, and schist. Boring logs also indicate a relatively thin zone of partially weathered rock (PWR) above bedrock which ranges in thickness from 1 to 4 feet in the southern and eastern portions of the Site, and up to 14 feet in the northeastern portion of the Site.

1.2.2 Site Hydrogeology

The uppermost aquifer at the Site consists of two hydrostratigraphic units: the water table hydrostratigraphic unit and the underlying bedrock hydrostratigraphic unit. The water table unit is composed of the unconsolidated silty sands and sandy silts with clays and variable thicknesses of PWR mantling the bedrock surface. The unconsolidated sands, silts, and PWR are also referred to as overburden. The bedrock unit is the zone of weathered and fractured bedrock. The water table unit is hydraulically connected to the underlying bedrock through fractures in the partially weathered and fractured bedrock (Southern Company Services, 2005). The monitoring well network for AP-2 DAS **(Figure 2: Monitoring Network Well Location Map)** monitors the water table aquifer and the shallow weathered and fractured bedrock.

Slug testing data from the Site reflect a range of hydraulic conductivities from 10^{-3} to 10^{-4} centimeters per second in the water table hydrostratigraphic unit. Groundwater level monitoring data from the Site show stable water level trends and the potentiometric maps reflect groundwater generally flowing to the south across AP-2 DAS.

1.3 Groundwater Monitoring System

Pursuant to § 257.91 and § 391-3-4-.10(6)(a), Georgia Power installed a groundwater monitoring system within the uppermost aquifer at AP-2 DAS. The monitoring system is designed to monitor groundwater passing the waste boundary of AP-2 DAS within the uppermost aquifer. Wells were located to serve as upgradient and downgradient monitoring points based on groundwater flow direction (**Table 1: Summary of Monitoring Network Well Construction and Groundwater Elevations**). The monitoring well locations are shown in **Figure 2.** The current monitoring well network at AP-2 DAS consists of 5 monitoring wells: upgradient wells ARGWA-19 and ARGWA-20, and downgradient wells ARGWC-21, ARGWC-22, and ARGWC-23. The original groundwater monitoring network included ARGWA-19, ARGWA-20, and ARGWC-21 which were installed in December 2008, and was included in the 2008 Design and Operation Plans approved by GA EPD in 2010. Wells ARGWC-22 and ARGWC-23 were added to the monitoring network in November 2019. Four delineation piezometers ARAMW-1, ARAMW-2, ARAMW-7, and ARAMW-8 have also been installed at the downgradient edge of AP-2 DAS (**Table 2: Summary of Piezometer Construction and Groundwater Elevations)**. ARAMW-1 and ARAMW-2 were installed in November 2019 to delineate the nature and extent of lithium at well ARGWC-21, and ARAMW-7 and ARAMW-8 were installed in November 2020 to delineate the nature and extent of cobalt at well ARGWC-22 and lithium and molybdenum at well ARGWC-23, respectively.

2.0 GROUNDWATER MONITORING ACTIVITIES

As required by § 257.90(e), the following describes monitoring-related activities performed during monitoring events conducted during the second half of 2020. The groundwater sampling was performed in accordance with § 257.93 and Georgia EPD Rule 391-3-4-.10(6). Samples were collected from each of the 9 wells in the monitoring system shown on **Figure 2**.

2.1 Monitoring Well Installation and Maintenance

Monitoring well-related activities conducted during the period included the following:

- Visual inspection of well conditions prior to sampling, recording the Site conditions, and performing exterior maintenance to perform sampling under safe and clean conditions.
- Installation of two new delineation piezometers (ARAMW-7 and ARAMW-8) for characterization of groundwater quality downgradient of AP-2 DAS. The well installations are documented in **Appendix A: Well Installation Report**.
- The Site monitoring network wells and additional wells were re-surveyed for top of casing elevations and horizontal location in June 2020 to confirm the top-of-casing elevations. The two new piezometers were surveyed in December 2020.

2.2 Detection Monitoring Program

In accordance with § 257.94(b), the detection groundwater monitoring program was implemented by collecting 8 background groundwater samples. The initial detection monitoring event was performed in March 2019. Groundwater samples were collected from each monitoring well and analyzed for Appendix III constituents according to § 257.94(a) and EPD Rule 391-3-4-.10(6). The background study and the initial detection monitoring event were documented in the *2019 First Semiannual Groundwater Monitoring Report (August 2019)*. The 7th (August 20, 2020) and 8th background (September 22, 2020) sampling events for the new monitoring network wells ARGWC-22 and ARGWC-23 were completed during this monitoring period. Data reports for the last two background sampling events are included in **Appendix B**: **Field Sampling Logs and Analytical Data Reports**.

2.3 Assessment Monitoring

Statistically Significant Increases (SSI) of Appendix III constituents were identified in the initial detection monitoring event (March 2019). A notice of assessment monitoring was placed in the operation record on November 13, 2019. Pursuant to § 257.94(e)(1) and Georgia EPD Rule 391-3-4-.10(6), Georgia Power implemented assessment monitoring in accordance with § 257.95 and GA EPD Rule 391-3-4-.10(6). An assessment monitoring constituent screening event was conducted from August 19 to 21, 2020. Pursuant to § 257.95(b) and Georgia EPD Rule 391-3-4-

.10(6), the CCR monitoring wells were sampled for the full suite of Appendix IV constituents during the August 2020 assessment monitoring screening event. Following receipt of the Appendix IV screening results, a semi-annual assessment monitoring event was conducted September 29 to October 1, 2020. Pursuant to § 257.95(d)(1) and GA EPD Rule 391-3-4-.10(6), groundwater samples collected from the CCR monitoring network wells were analyzed for Appendix III constituents and those Appendix IV constituents detected during the August 2020 assessment monitoring screening event. The new delineation piezometers ARAMW-7 and ARAMW-8 were sampled on November 30, 2020 and December 1, 2020, respectively, and analyzed for Appendix III constituents, cobalt, lithium, molybdenum and major cation and anions. Data reports for the monitoring events are included in **Appendix B.**

3.0 SAMPLE METHODOLOGY & ANALYSES

The following sections describe the methods used to complete groundwater monitoring at Plant Arkwright AP-2 DAS.

3.1 Groundwater Elevation Measurements and Flow Direction

Prior to each sampling event, groundwater elevations were recorded from each well in the network for Plant Arkwright AP-2 DAS. Groundwater elevations recorded during the assessment screening and semi-annual monitoring events are summarized **in Tables 1 and 2:** The elevations of the top of well casings were re-surveyed in June 2020. The August and September 2020 groundwater elevations were calculated using the top of casing elevations from the June 2020 resurvey. Groundwater elevation data from the monitoring events were used to develop potentiometric surface elevation contour maps (**Figure 3: Potentiometric Surface – August 2020** and **Figure 4: Potentiometric Surface – September 2020)**. Groundwater flow in the uppermost aquifer **(Figures 3 and 4)** is to the south. The groundwater flow pattern observed during the August and September/October 2020 monitoring events are consistent with historical patterns with groundwater elevations at each of the wells maintaining a similar trend over time as can be seen in **Tables 1 and 2**.

3.2 Groundwater Gradient and Flow Velocity

The groundwater flow velocity at Plant Arkwright AP-2 DAS was calculated using a derivation of Darcy's Law. Specifically,

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

Where:

$V =$ Groundwater flow velocity $\left(\frac{feet}{day}\right)$

$K =$ Average hydraulic conductivity of the aquifer $\left(\frac{feet}{day}\right)$

$i =$ Horizontal hydraulic gradient $\left(\frac{feet}{feet}\right)$

$n_e =$ Effective porosity

The general groundwater flow velocity was calculated for the Site based on hydraulic gradients, average permeability based on previous slug test data, and an estimated effective porosity of 0.20 (based on a review of several sources, including Driscoll, 1986; US EPA, 1989; Freeze and Cherry, 1979). The general groundwater flow velocity calculation is presented in **Table 3: Groundwater Flow Velocity Calculations**. Results for groundwater flow velocities were 0.31 feet/day (111.9 feet/year) in August 2020 and 0.30 feet/day (110.6 feet/year) in September 2020.

3.3 Groundwater Sampling

Groundwater samples were collected for the August and September/October 2020 assessment monitoring events and in December 2020 for the two newly installed piezometers (ARAMW-7 and ARAMW-8) in accordance with § 257.95(b) and (d) and Georgia EPD Rule 391-3-4-.10(6). Each of the monitoring wells at the Site is equipped with a dedicated QED bladder pump except for wells installed in November 2019 (ARGWC-22, ARGWC-23) and the four piezometers, which were pumped with peristaltic or non-dedicated QED bladder pumps. The monitoring wells were purged and sampled using low-flow sampling procedures. Sampling equipment and pump intakes were placed at the midpoint of the well screen. Care was taken to maintain a water level above the top of screen and not draw the water level down below the pump during purging. Water level stabilization was achieved when three consecutive water level measurements vary by 0.3 foot or less at a pumping rate of no less than 100 milliliters per minute (mL/min). A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters (pH, conductivity, dissolved oxygen, temperature, and ORP) and a Hach 2100Q was used to measure turbidity during well purging to verify stabilization prior to sampling. Groundwater samples were collected when the following stabilization criteria were met:

- pH ± 0.1 Standard Units (S.U.);
- Specific conductance ± 5%;
- 10% for DO > 0.5 mg/l. No criterion applies if DO < 0.5 mg/L.
- Turbidity measurements less than 10 NTU
- Temperature – Record only, not used for stabilization criteria
- ORP – Record only, not used for stabilization criteria

Once stabilization was achieved, samples were collected into appropriately-preserved laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to Eurofins TestAmerica Laboratories, Inc. (Eurofins TestAmerica) of Pittsburgh, Pennsylvania, and St. Louis, Missouri following chain-of-custody protocol. Stabilization logs for each well during each monitoring event are included in **Appendix B**.

3.4 Laboratory Analyses

Groundwater samples collected in the September/October 2020 semi-annual monitoring event were analyzed for the full suite of the Appendix III constituents and the Appendix IV constituents detected in the August 2020 assessment constituent screening event. Antimony, cadmium, mercury, and thallium were not detected in the groundwater samples collected during the August 2020 assessment monitoring constituent screening event and were not analyzed during the subsequent semi-annual event (September/October 2020) in accordance with § 257.95(d)(1). Cadmium though not detected in the August assessment screening, was analyzed during the

semi-annual event because cadmium is an Appendix I metal. New delineation piezometers ARAMW-7 and ARAMW-8 were sampled in November/December 2020 for cobalt, lithium, and molybdenum along with major ions in support of corrective measures assessment activities. Analytical methods used for groundwater sample analysis are listed on the analytical laboratory reports included in **Appendix B**.

Laboratory analyses were performed by Eurofins TestAmerica. Eurofins TestAmerica is accredited by National Environmental Laboratory Accreditation Program (NELAP) and maintains a NELAP certification for the constituents analyzed for this project. In addition, Eurofins TestAmerica is certified to perform analysis by the State of Georgia.

3.5 Quality Assurance & Quality Control

The analytical results provided in **Table 4: Analytical Data Summary** provide concentrations from the August and September/October 2020 assessment sampling events and the November/December 2020 sampling of the new piezometers as reported by the laboratory. During each sampling event, quality assurance/quality control (QA/QC) samples are collected at a rate of one QA/QC sample per 10 groundwater assessment samples. Equipment blanks (where non-dedicated sampling equipment is used) and duplicated samples were collected during each sampling event. QA/QC sample data were evaluated during data validation and are included in **Appendix B.** The relative percent difference (RPD) values of the parent and duplicate sample data for anion and metals data was less than 20% indicating good sampling precision (**Appendix B**). The data quality evaluation showed the data is valid and appropriate to use for monitoring the Site's groundwater quality.

4.0 STATISTICAL ANALYSIS

The Site is currently conducting assessment monitoring and has entered into assessment of corrective measures. Statistical analysis of Appendix III groundwater monitoring data was performed on samples collected from the groundwater monitoring network pursuant to § 257.93(f) and Georgia Rule 391-3-4.-10(6) and following the statistical analysis plan. The statistical analysis method used at the Site was developed by Groundwater Stats Consulting, LLC (GSC) in accordance with § 257.93(f) and Georgia Rule 391-3-4.-10(6) using methodology presented in Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance, March 2009, EPA 530/R-09-007 (US EPA, 2009). To develop the statistical method, analytical data collected during the background period were evaluated and used to develop statistical limits for each Appendix III constituent. Subsequent detection monitoring results were compared to the statistical limits to determine if concentrations were statistically different from background.

Pursuant to § 257.95(d)(2) and Georgia Rule 391-3-4.-10(6), Georgia Power established groundwater protection standards for the Appendix IV monitoring constituents and conducted statistical analysis of the Appendix IV groundwater monitoring data obtained during the September/October 2020 semi-annual assessment monitoring event to evaluate if concentrations statistically exceeded the established state groundwater protection standards (GWPS). The following subsections provide an overview of the statistical methods used to evaluate Appendix III and IV parameters and statistical analyses results.

4.1 Statistical Method

Sanitas groundwater statistical software was used to perform the statistical analyses at the Site following the September/October 2020 semi-annual assessment monitoring event. Sanitas is a commercially available decision support software package that incorporates the statistical tests required of Subtitle C and D facilities by US EPA regulations and guidance as recommended in the Unified Guidance (US EPA, 2009) document. The Interwell method was used for the analysis of the Appendix III constituents. Appendix I constituents were statistically evaluated using the interwell prediction limits. Confidence intervals were also used to evaluate the six Appendix I metals (arsenic, barium, cadmium, lead, selenium, and silver). Confidence intervals were calculated for each of the detected Appendix IV parameters in each downgradient well. The following table provides a summary of the statistical methodology used at AP-2 DAS for the monitoring events conducted in September/October 2020 and will be used for routine monitoring in the future. Specific methodology information is described in **Table 5: Statistical Method Summary** and in the following paragraphs.

Table 5
Statistical Method Summary

Statistical Methodology	Data Screening on Proposed Background	Evaluate outliers, trends, and seasonality when sufficient data are available
	Statistical Limits	Interwell statistical limits will be applied on a parameter basis, depending on the appropriateness of the method as determined by the Analysis of Variance.
	Prediction Limits	Parametric when data follow a normal or transformed normal distribution and when less than 50% non-detects, utilizing Kaplan Meier non-detect adjustment when applicable. Nonparametric when data sets contain greater than 50% non-detects or when data are not normally or transformed-normally distributed.
	Management of Non-Detects	When data contain less than 15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the practical quantitation limit (PQL) as reported by the laboratory. When data contain between 15-50% non-detects the Kaplan-Meier non-detect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
	Confidence Intervals	Used in Assessment and Corrective Action monitoring.
	No Statistical Testing	Statistical testing is not required for parameters containing 100% non-detects (US EPA Unified Guidance, 2009, Chapter 6).
	Verification Resample Plan	Optional 1-of-2 with minimum of 8 samples per well for interwell testing.
	Optional	▪ Initial statistical exceedance warrants optional independent resampling within 90 days. ▪ If resample passes, well/parameter is not a confirmed statistically significant increase (SSI). ▪ If resample exceeds, well/parameter has a confirmed SSI. ▪ If no resample is collected, the original result is deemed verified.

4.1.1 Appendix III Statistical Method

When using the interwell method, upgradient well data are pooled to establish a background statistical limit for each constituent. Appendix III data from the September/October 2020 monitoring event were compared to the statistical limit to determine whether downgradient well concentrations exceed background statistical limits. The interwell statistical method uses an optional 1-of-2 verification resample plan. When an initial statistically significant increase (SSI) or questionable result occurs, a second sample may be collected to verify the initial result or determine if the result was an outlier. Interwell prediction limits (PL) were used for the following locations and constituents:

- AP-2 DAS: Interwell statistical methods were used for boron, calcium, chloride, fluoride, sulfate, Total Dissolved Solids (TDS), and pH.

Data from groundwater samples from downgradient wells collected in the September/October 2020 monitoring event were compared to the statistical limits to evaluate whether concentrations exceed background statistical limits.

If data from a sampling event initially exceeds the PL, an optional resampling strategy can be used to verify the result. In 1-of-2 resampling, one independent resample is collected and evaluated within 90 days to determine whether the initial exceedance is verified. If the resample exceeds the PL, the initial exceedance is verified, and an SSI is identified. When a resample result does not verify the initial result, and does not exceed the PL, there is no SSI. If resampling is not performed, the initial exceedance is a confirmed exceedance. If the initial finding is not verified by a resampling result, the resampled value will replace the initial finding. When the resample confirms the initial finding, the exceedance will be reported.

4.1.2 Appendix IV Statistical Method

The assessment monitoring program statistics for Appendix IV constituents at Plant Arkwright were conducted in two parts. The first part was the calculation of tolerance limits for site-specific background limits for Appendix IV constituents. The second part was the calculation of confidence limits for individual downgradient well/constituent pairs.

Interwell tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data for Appendix IV constituents. Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for radium. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR § 257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a).

As described in 40 CFR § 257.95(h) (1-3), the GWPS is:

- The maximum contaminant level (MCL) established under §141.62 and §141.66 of this title
- Where an MCL has not been established for a constituent, CCR-rule specified level (RSLs) have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), and molybdenum (0.100 mg/L)
- The respective background level for a constituent when the background level is higher than the MCL or Federal CCR Rule identified GWPS

On July 30, 2018, USEPA revised the Federal CCR rule updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR § 257.95(h)(2). Georgia EPD has not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above Georgia EPD Rule requirements, GWPS were established for statistical comparison of Appendix IV constituents for the September/October 2020 sampling events. **Table 6: Summary of Groundwater Protection Standards** summarizes the background limits established for each Appendix IV constituent and the GWPS established under Georgia EPD Rules.

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in each downgradient well. The Sanitas software was used to calculate the tolerance limits and the confidence intervals. Those confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a). Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, an SSL exceedance is identified.

4.2 Statistical Analyses Results – Appendix I and Appendix III

Analytical data for Appendix I and Appendix III constituents from the September/October 2020 semi-annual monitoring events were analyzed in accordance with the statistical analysis plan. The Appendix I constituent barium in well ARGWC-23 was identified as a statistical exceedance using the interwell method but was not confirmed as an exceedance using confidence intervals. **Table 7: Summary of Statistical Analysis Results Appendix III - September/October 2020** shows the

Appendix III SSIs for the September/October 2020 semi-annual event. The statistical analysis and comparison to prediction limits are included as **Appendix C: Statistical Analyses**.

Table 7
Summary of Statistical Analysis Results Appendix III - September/October 2020

Appendix III Constituent	Wells with Concentrations Above Prediction Limits (SSI)
Boron	ARGWC-21, ARGWC-22, ARGWC-23
Calcium	ARGWC-21, ARGWC-22, ARGWC-23
Fluoride	ARGWC-23
pH	ARGWC-23
Sulfate	ARGWC-21, ARGWC-22, ARGWC-23
Total Dissolved Solids	ARGWC-21, ARGWC-22, ARGWC-23

4.3 Statistical Analyses - Appendix IV

Appendix C: Statistical Analyses shows the individual well/constituent pairs with their respective confidence intervals in comparison to the respective constituent state derived site GWPS. Based on the statistical results presented in **Appendix C**, **Table 8: Statistical Analysis Results Summary Appendix IV September/October 2020** summarizes the SSLs identified during the September/October 2020 semi-annual monitoring event.

Table 8
Summary of Statistical Analysis Results Appendix IV - September/October 2020

Appendix IV Constituent	Wells with Confidence Intervals Above GWPS (SSLs)
Cobalt	ARGWC-22
Lithium	ARGWC-23
Molybdenum	ARGWC-23

5.0 MONITORING PROGRAM STATUS

5.1 Assessment Monitoring Status

Pursuant to 40 CFR 257.96(b) and Georgia EPD Rule 391-3-4.-10(6), Georgia Power will continue to monitor the groundwater at the Plant Arkwright AP-2 DAS in accordance with the assessment monitoring program regulations of 40 CFR 257.95. Georgia Power initiated an Assessment of Corrective Measures (ACM) on July 9, 2020. On December 4, 2020, the Assessment of Corrective Measures Report was submitted to GA EPD presenting an evaluation of potential remedies for the cobalt SSL in well ARGWC-22 identified in the April 2020 semi-annual groundwater data.

5.2 Assessment of Corrective Measures

The ACM efforts completed during the reporting period covered by this groundwater monitoring and corrective action report are presented in the *Semi-Annual Remedy Selection and Design Progress Report* provided in **Appendix D: Semi-Annual Remedy Selection and Design Progress Report**. The semi-annual progress report summarizes:

(i) Completion and submittal of the ACM Report (Wood, 2020) in December 2020.
(ii) The installation of two additional delineation piezometers (ARAMW-7 and ARAMW-8) screened in the bedrock hydrostratigraphic unit to delineate the vertical extent of the cobalt SSL in well ARGWC-22 and lithium and molybdenum SSLs in well ARGWC-23.
(iii) The SSLs for cobalt and molybdenum are horizontally delineated by surface water samples collected from Beaverdam Creek (**Table 4**), while the vertical delineation for cobalt and molybdenum are ongoing. The SSL for lithium is horizontally delineated by surface water samples from Beaverdam Creek and vertically delineated onsite by piezometer ARAMW-8.
(iv) The status of evaluating applicable corrective measures.
(v) The planned activities and anticipated schedule for the following semi-annual reporting period.

Georgia Power will include future Semi-Annual Remedy Selection and Design Progress Reports with each groundwater monitoring and corrective action report.

6.0 CONCLUSIONS & FUTURE ACTIONS

The *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report* was prepared to fulfill the requirements of GA EPD Rules for Solid Waste Management 391-3-4-.10. Statistical evaluations of the groundwater monitoring data for AP-2 DAS identified the presence of SSLs of cobalt in ARGWC-22 and lithium and molybdenum in ARGWC-23 above the state GWPS.

Georgia Power will continue to monitor AP-2 DAS under the assessment monitoring program pursuant to § 257.95 and GA EPD Rule 391-3-4-.10(6) and proceed with the evaluation of potential remedies presented in the ACM Report (Wood, 2020). During the next semi-annual reporting period of 2021, Georgia Power will update the groundwater protection standards for Appendix IV constituents and conduct statistical analysis according to the regulations. The next semi-annual sampling event is planned for February 2021.

7.0 REFERENCES

Clark, W.Z. and Zisa A.C., 1976, Physiographic Map of Georgia, Georgia Department of Natural Resources.

Driscoll, F.G. 1986, *Ground Water and Wells*, *2nd Edition*, Johnson Filtration Systems, Inc., St. Paul. Minnesota, 1089p.

Freeze, R.A. and Cherry, JA. 1979, Groundwater, Prentice-Hall, Englewood Cliffs, New Jersey, 604 pp.

LeGrand, H. E. 1962, Geology and Ground-water Resources of the Macon Area, Georgia. The Geological Survey Bulletin No. 72.

Southern Company Services, Inc., 2005, Plant Arkwright Ash Ponds 2 and 3 and Ash Monofill Site Acceptability Report, Revision 1.

Sanitas: Groundwater Statistical Software, Sanitas Technologies, Shawnee, KS, 2007. www.sanitastech.com

U.S. Environmental Protection Agency (US EPA), 1989. US EPA 530/SW-89-031 Interim Final RCRA Investigation (RFI) Guidance, Volume I and II.

US EPA, 1993. Subpart E, Groundwater Monitoring and Corrective Action, in Chapter 5, Solid Waste Disposal Facility Criteria Technical Manual. EA530-R-93-017.

US EPA, 2000. Guidance for Data Quality Assessment: Practical Methods for data analysis; US EPA QA/G-9, QA00 Update. Environmental Protection Agency report US EPA/600/R-96/084, Office of Environmental Information, Washington, D.C.

US EPA, March 2009. Unified Guidance, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Office of Solid Waste Management Division, U.S. Environmental Protection Agency, Washington, D. C.

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

US EPA. 2011. Data Validation Standard Operating Procedures. Science and Ecosystem Support Division. Region IV. Athens, GA. September.

US EPA. 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.

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

Wood Environment & Infrastructure Solutions, Inc., 2020a. 2020 Annual Groundwater Monitoring and Corrective Action Report – Georgia Power Company Plant Arkwright Ash Pond 2 Dry Ash Stockpile, July 31, 2020.

Wood Environment & Infrastructure Solutions, Inc., 2020b. Risk Evaluation Report – Georgia Power Company Plant Arkwright Ash Pond 2 Dry Ash Stockpile, December 2020.

TABLES & FIGURES

TABLE 1

SUMMARY OF MONITORING NETWORK WELL CONSTRUCTION AND GROUNDWATER ELEVATIONS

Well	Installation Date	Northing [1]	Easting [1]	Top of Casing Elevation (feet NAVD88) [2] (Prior to June 2020 Resurvey)	Top of Casing Elevation (feet NAVD88) [2] (June 2020 Resurvey) [3]	Ground Surface Elevation (feet NAVD88) [2] (June 2020 Resurvey) [3]	Top of Screen Elevation (feet NAVD88) [3]	Screen Bottom Elevation (feet NAVD88) [3]	Screen Length (feet)	Total Well Depth on Construction Log (feet below land surface)	Total Well Depth Measured September 2020 (feet below TOC) [4]	Groundwater Zone Screened	Location	Depth to Water (feet below TOC) 8/17/2020	Groundwater Elevation (feet NAVD88) 8/17/2020	Depth to Water (feet below TOC) 9/28/2020	Groundwater Elevation (feet NAVD88) 9/28/2020
ARGWA-19	12/16/2008	1063774.45	2439488.71	343.48	343.30	339.86	300.2	290.2	10.0	50.0	44.55	Bedrock	Upgradient	26.39	316.91	26.60	316.70
ARGWA-20	12/4/2008	1063732.73	2439088.01	331.48	331.28	327.73	303.2	293.2	10.0	34.9	29.44	Overburden	Upgradient	13.73	317.55	14.24	317.04
ARGWC-21	12/2/2008	1062941.24	2439112.52	309.40	309.15	305.97	291.7	281.7	10.0	24.6	18.71	Overburden	Downgradient	13.88	295.27	14.12	295.03
ARGWC-22	11/19/2019	1063039.36	2438925.04	310.18	309.95	307.01	292.0	282.0	10.0	25.0	27.74	Overburden	Downgradient	13.77	296.18	13.67	296.28
ARGWC-23	11/20/2019	1062884.38	2439202.38	307.79	307.70	304.29	289.3	279.3	10.0	25.0	28.08	Overburden	Downgradient	12.10	295.60	12.10	295.60

Notes:

1. Horizontal locations referenced to Georgia State Plane West, North American Datum of (NAD) 1983 surveyed in June 2020.
2. Vertical elevations are feet above mean sea level referenced to North American Vertical Datum of 1988 (NAVD88)
3. Elevations based on June 2020 survey.
4. TOC indicates top of casing.

TABLE 2

SUMMARY OF PIEZOMETER CONSTRUCTION AND GROUNDWATER ELEVATIONS

Well	Installation Date	Northing [1]	Easting [1]	Top of Casing Elevation (feet NAVD88) [2] (Prior to June 2020 Resurvey)	Top of Casing Elevation (feet NAVD88) [2] (June 2020 Resurvey)	Ground Surface Elevation (feet NAVD88) [3]	Top of Screen Elevation (feet NAVD88) [3]	Screen Bottom Elevation (feet NAVD88) [3]	Screen Length (feet)	Total Well Depth on Construction Log (feet below land surface)	Total Well Depth Measured December 2, 2019 (feet below TOC) [4]	Groundwater Zone Screened	Location	Depth to Water (feet below TOC) 8/17/2020	Groundwater Elevation (feet NAVD88) 8/17/2020	Depth to Water (feet below TOC) 9/28/2020	Groundwater Elevation (feet NAVD88) 9/28/2020
ARAMW-1	11/20/2019	1062938.38	2439120.01	308.67	308.51	305.07	271.1	261.1	10.0	44.0	45.32	Bedrock	Downgradient	13.13	295.38	13.39	295.12
ARAMW-2	11/20/2019	1062925.96	2439114.97	308.52	308.27	305.12	293.1	283.1	10.0	22.0	24.84	Overburden	Downgradient	13.31	294.96	13.58	294.69
ARAMW-7	11/14/2020	1063049.07	2438913.27	NA	309.81	307.13	272.1	262.1	10.0	48.0	50.82	Bedrock	Downgradient	Not installed		Not installed	
ARAMW-8	11/13/2020	1062895.98	2439197.40	NA	307.36	304.53	270.7	260.7	10.0	47.0	49.61	Bedrock	Downgradient	Not installed		Not installed	

Notes:

1. Horizontal locations referenced to Georgia State Plane West, North American Datum (NAD) of 1983 surveyed in June 2020.
2. Vertical elevations are feet above mean sea level referenced to North American Vertical Datum of 1988 (NAVD88)
3. Elevations based on June 2020 survey.
4. TOC indicates top of casing.
5. NA indicates not applicable

TABLE 3
GROUNDWATER FLOW VELOCITY CALCULATIONS

Potentiometric Map Date	Water-Bearing Zone	Location	Groundwater Elevations in Well Pairs (h_1, h_2) (feet)		Change in Elevation (Δh) (feet)	Distance Measured (L) (feet)	Hydraulic Gradient (i) (feet/feet)	Average Hydraulic Conductivity (K) (feet/day)	Estimated Effective Porosity (n_e)	Calculated Groundwater Flow Velocity (V) (feet/day)	Calculated Groundwater Flow Velocity (V) (feet/year)
August 2020	Water Table Aquifer	ARGWA-20 to ARGWC-21	317.55	295.27	22.28	792	0.028	2.18	0.2	0.31	111.9
September 2020	Water Table Aquifer	ARGWA-20 to ARGWC-21	317.04	295.03	22.01	792	0.028	2.18	0.2	0.30	110.6

TABLE 4
ANALYTICAL DATA SUMMARY

	Substance	Well ID								
		ARGWA-19	ARGWA-19	ARGWA-20	ARGWA-20	ARGWC-21	ARGWC-21	ARGWC-22	ARGWC-22	ARGWC-22
		8/19/2020	9/29/2020	8/19/2020	9/30/2020	8/21/2020	10/1/2020	8/19/2020	9/22/2020	9/30/2020
APPENDIX III	Boron	NA	<0.039	NA	0.083	NA	0.90	1.3	2.8	2.9
	Calcium	NA	12	NA	9.9	NA	79	220	190	200
	Chloride	NA	10	NA	5.6	NA	4.3	5.7	7.1	8.0
	Fluoride	<0.026	0.051 J	<0.026	0.032 J	0.084 J	0.098 J	<0.026	0.049 J	0.045 J
	Sulfate	NA	8.4	NA	15	NA	210	1000	720	650
	TDS	NA	110	NA	82	NA	500	1400	1300	1200
	pH	6.25	5.83	6.16	5.65	5.89	5.99	6.21	5.77	5.81
APPENDIX IV	Antimony	<0.00038	NA	<0.00038	NA	<0.00038	NA	<0.00038	<0.00038	NA
	Arsenic	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
	Barium	0.044	0.040	0.085	0.080	0.054	0.051	0.046	0.038	0.033
	Beryllium	<0.00018	<0.00018	0.00022 J	0.00019 J	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
	Cadmium	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022
	Chromium	<0.0015	<0.0015	0.0063	0.0057	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
	Cobalt	<0.00013	<0.00013	0.00064 J	0.00031 J	0.00066 J	0.00082 J	0.0032	0.0085	0.0055
	Lead	<0.00013	<0.00013	0.00039 J	0.00022 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
	Lithium	0.0038 J	0.0041 J	<0.0034	<0.0034	0.013	0.012	0.026	0.014	0.014
	Mercury	<0.00013	NA	<0.00013	NA	<0.00013	NA	<0.00013	<0.00013	NA
	Molybdenum	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061
	Radium	0.294 U	0.372 U	0.940	0.679	0.472	0.496 U	0.587 U	0.884	0.602
	Selenium	<0.0015	<0.0015	0.0015 J	0.0016 J	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
	Thallium	<0.00015	NA	<0.00015	NA	<0.00015	NA	<0.00015	<0.00015	NA
*	Silver	NA	<0.00018	NA	<0.00018	NA	<0.00018	NA	NA	<0.00018

Notes:

1. Results for constituents are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).

2. < indicates the constituent was not detected above the analytical method detection limit (MDL).

3. J indicates the substance was detected at such low levels that the precision of the laboratory instrument could not produce a reliable value.

Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.

4. TDS indicates total dissolved solids.

5. U indicates the constituent was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value.

Therefore, the value followed by U is qualified by the laboratory as estimated.

6. NA indicates constituent was not analyzed

7. * - Georgia Appendix I constituent that is not also included in Appendix IV.

TABLE 4
ANALYTICAL DATA SUMMARY

	Substance	Well ID								
		ARGWC-23	ARGWC-23	ARGWC-23	ARAMW-1	ARAMW-1	ARAMW-2	ARAMW-2	ARAMW-7	ARAMW-8
		8/20/2020	9/22/2020	10/1/2020	8/20/2020	9/30/2020	8/20/2020	10/1/2020	11/30/2020	12/1/2020
APPENDIX III	Boron	0.44	0.50	0.49	NA	0.98	NA	0.95	2.1	0.40
	Calcium	69	66	73	NA	100	NA	91	260	81
	Chloride	3.9	3.6	3.8	NA	5.2	NA	4.2	6.3	12
	Fluoride	0.19	0.33	0.32	0.23	0.20	<0.026	0.098 J	0.044 J	0.14
	Sulfate	69	68	64	NA	230	NA	270	990	120
	TDS	310	310	290	NA	520	NA	530	1600	420
	pH	6.33	6.29	6.38	6.09	6.16	5.99	5.96	6.00	7.05
APPENDIX IV	Antimony	<0.00038	<0.00038	NA	<0.00038	NA	<0.00038	NA	NA	NA
	Arsenic	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	0.084	0.0085	NA	NA
	Barium	0.16	0.16	0.17	0.055	0.052	0.14	0.075	NA	NA
	Beryllium	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	NA	NA
	Cadmium	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	<0.00022	NA	NA
	Chromium	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	NA	NA
	Cobalt	0.0023 J	0.0036	0.0052	0.0010 J	0.0010 J	0.0022 J	0.0036	0.028	0.0054
	Lead	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	NA	NA
	Lithium	0.036	0.039	0.040	0.0066	0.0091	0.036	0.019	0.061	0.0044 J
	Mercury	<0.00013	<0.00013	<0.00013	<0.00013	NA	<0.00013	NA	NA	NA
	Molybdenum	0.061	0.053	0.064	0.0076 J	0.0054 J	0.0013 J	<0.00061	0.0012 J	0.056
	Radium	0.242 U	0.0177 U	0.749	0.527	0.249 U	4.13	2.86	NA	NA
	Selenium	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	NA	NA
	Thallium	<0.00015	<0.00015	NA	<0.00015	NA	<0.00015	NA	NA	NA
*	Silver	NA	NA	<0.00018	NA	<0.00018	NA	<0.00018	NA	NA

Notes:

1. Results for constituents are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).

2. < indicates the constituent was not detected above the analytical method detection limit (MDL).

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Therefore, the value followed by U is qualified by the laboratory as estimated.

6. NA indicates constituent was not analyzed

7. * - Georgia Appendix I constituent that is not also included in Appendix IV.

TABLE 4
ANALYTICAL DATA SUMMARY

	Substance	Surface Water Sample Location									
		BC-0.8	BC-0.8	BC-0.5.7	BC-0.5.6	BC-0.5.5	BC-0.5.5	BC-BR	BC-BR	BC-0.3	BC-0.1
		11/3/2020	2/10/2021	2/10/2021	2/10/2021	11/3/2020	2/10/2021	11/3/2020	2/10/2021	2/10/2021	2/10/2021
APPENDIX III	Boron	NA	0.27	0.047 J	<0.039	NA	<0.039	NA	<0.039	<0.039	<0.039
	Calcium	NA	15	8.4	8.7	NA	8.1	NA	9.0	8.6	8.3
	Chloride	9.5	8.0	8.5	8.6	9.2	8.7	9.3	8.6	8.0	8.7
	Fluoride	0.066 J	0.050 J	0.055 J	0.055 J	0.050 J	0.062 J	<0.044	0.056 J	0.051 J	0.056 J
	Sulfate	3.8	32	6.4	6.7	6.1	6.8	6.2	6.7	6.5	6.9
	TDS	84	130	85	96	88	76	85	88	98	92
	pH	7.6	7.2	7.3	7.4	7.4	7.4	7.4	7.4	7.5	7.5
APPENDIX IV	Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	0.00042 J	0.0019 J	0.00056 J	0.00057 J	0.00047 J	0.00050 J	0.00048 J	0.00052 J	0.00050 J	0.00057 J
	Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lithium	NA	<0.0034	<0.0034	<0.0034	NA	<0.0034	NA	<0.0034	<0.0034	<0.0034
	Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Molybdenum	NA	<0.00061	<0.00061	<0.00061	NA	<0.00061	NA	<0.00061	<0.00061	<0.00061
	Radium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
*	Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1. Results for constituents are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).

2. < indicates the constituent was not detected above the analytical method detection limit (MDL).

3. J indicates the substance was detected at such low levels that the precision of the laboratory instrument could not produce a reliable value.

Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.

4. TDS indicates total dissolved solids.

5. U indicates the constituent was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value.

Therefore, the value followed by U is qualified by the laboratory as estimated.

6. NA indicates constituent was not analyzed

7. * - Georgia Appendix I constituent that is not also included in Appendix IV.

TABLE 6
SUMMARY OF GROUNDWATER PROTECTION STANDARDS

Constituent	Units	MCL	Federal CCR Rules Specified Limit	Site-Specific Background October 2020	State Derived Site GWPS [2] October 2020
Antimony	mg/L	0.006		0.002	0.006
Arsenic	mg/L	0.01		0.0015	0.01
Barium	mg/L	2.0		0.1	2.0
Beryllium	mg/L	0.004		0.0025	0.004
Cadmium	mg/L	0.005		0.0025	0.005
Chromium	mg/L	0.1		0.0078	0.1
Cobalt [1]	mg/L		0.006	0.0025	0.0025 [2]
Fluoride	mg/L	4.0		0.14	4.0
Lead [1] [3]	mg/L		0.015	0.001	0.001 [2]
Lithium [1]	mg/L		0.04	0.013	0.013 [2]
Mercury	mg/L	0.002		0.0002	0.002
Molybdenum [1]	mg/L		0.1	0.015	0.015 [2]
Combined Radium	piC/L	5.0		1.341	5.0
Selenium	mg/L	0.05		0.005	0.05
Silver [1]	mg/L			0.001	0.001 [2]
Thallium	mg/L	0.002		0.001	0.002

Notes:

mg/L - milligrams per liter

piC/L - picoCuries per liter

GWPS - Groundwater Protection Standard

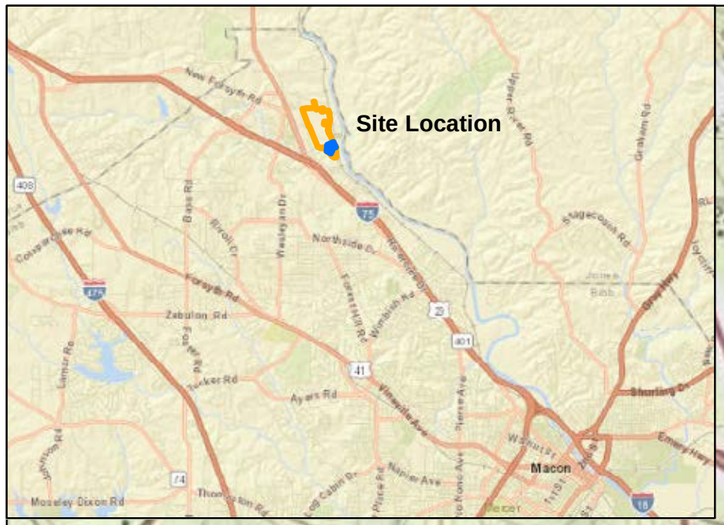
MCL - Maximum Contaminant Level: The MCL is the GWPS under the Federal CCR Rule unless background is greater.

Federal CCR Rule 40 CFR § 257.95 (h) Amendment July 30, 2018 lists levels for cobalt, lead, lithium, and molybdenum.

(1) Constituent without an established MCL. The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a).

(2) Under the existing Georgia EPD Rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents where the background level is higher than the MCL.

(3) Currently, there is no MCL established for lead. The value listed is the established USEPA Action Level for drinking water.



N

Pumping Sta
WT
Arkwright
Power Plant
INTERCHANGE 56
INTERCHANGE 55
BR 369
Substa
Sewage Disposal Pond
SHERATON
ARKWRIGHT
DRIVE
BM 338
BM 321

Legend

- Ash Pond 2 Dry Ash
- Ash Pond 3 Landfill and Monofill
- Approximate Property Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China

0 750 1,500 3,000 Feet

Plant Arkwright
Macon, Georgia

Site Location Map

Prepared By-Date: NJM - 2/1/2021	
Checked By-Date: RQ - 2/1/2021	wood.
Project Number: 6122201429	**Figure: 1**

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Plant Arkwright
Macon, Georgia

Monitoring Network Well Location Map

Prepared By-Date: NJM - 2/23/2021	wood.
Checked By-Date: RQ - 2/23/2021	**Figure: 2**
Project Number: 6122201429	

Notes:
1. Well PZ-2S is screened in the Overburden and its groundwater elevation was not used for contouring

2. The top of the well casings were resurveyed in June 2020. The August 2020 groundwater elevations were calculated using the resurveyed elevations.

N

PZ-31 143.13
PZ-1D 143.46
PZ-32 142.27
PZ-2S 142.40
PZ-2D 142.41
PZ-3D 142.09
ASH POND A
PZ-21 140.75
PZ-22 140.91
MW-102 140.62
PZ-25 140.57
PZ-01R 140.70
PZ-20 139.70
PZ-29 140.14
MW-116 139.56
PZ-12S 139.87
PZ-19 139.49
ASH POND 1
PZ-23A 141.58
PZ-4D 140.69
PZ-18 140.07
PZ-11S 139.08
PZ-24A 140.23
PZ-28 138.98
MW-115 140.13
PZ-02R 139.97
PZ-10S 139.02
PZ-17 140.84
PZ-27 138.90
MW-113 138.95
ASH POND 2
PZ-33 139.98
PZ-16 138.90
PZ-9D 139.49
MW-111 139.83
PZ-03R 139.32
PZ-26 139.67
PZ-15 139.85
MW-108 139.12
PZ-8D 140.03
PZ-7D 139.80
PZ-14 139.23

142 Groundwater Elevation (ft NAVD88)

0 600 1,200 Feet

Legend

- Groundwater Elevation Well (Piezometer)
- Groundwater Quality Monitoring Well in Monitoring Network
- Interpreted Groundwater Flow Direction
- Potentiometric Surface Contour (ft NAVD88)
- Approximate Property Boundary
- Approximate CCR Permit Boundary
- Approximate Ash Pond A Location

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Document Path: G:\Plant Mitchell\mxds\Event13_GWE.mxd

Plant Mitchell
Putney, Georgia

Potentiometric Surface
Upper Bedrock - August 2020

Prepared By-Date: JCD - 2/12/2021	wood.
Checked By-Date: NJM - 2/12/2021	Figure: 3
Project Number: 6122160170	

Notes:
1. Well PZ-2S is screened in the Overburden and its groundwater elevation was not used for contouring

2. * - Well not used in contouring

3. October 2020 groundwater elevations calculated using top of well casing elevations from June 2020 resurveying.

N

PZ-31
145.81

PZ-1D
145.98

PZ-32
144.92

PZ-2D
144.66

PZ-2S
144.71

PZ-3D
144.32

ASH
POND A

ASH
POND 1

ASH
POND 2

MW-102
141.43

PZ-21
142.64

PZ-22
143.63

PZ-25
141.40

PZ-01R
141.69

PZ-4D
143.63

PZ-23A
143.62

PZ-29
140.17

PZ-12S
140.34

PZ-20
141.09

PZ-19
141.13

MW-116
140.82

PZ-24A
142.55

PZ-11S
140.91

PZ-18
141.33

PZ-28
140.99

MW-115
137.77*

PZ-02R
141.62

PZ-10S
141.30

PZ-17
141.39

PZ-27
140.77

MW-113
141.24

PZ-33
141.94

PZ-16
140.94

PZ-9D
140.15

MW-111
139.88

PZ-03R
140.99

PZ-26
140.02

PZ-15
140.20

MW-108
141.56

PZ-8D
140.13

PZ-7D
140.80

PZ-14
141.46

145 144 143 142 141 140

0 600 1,200 Feet

Legend

138.06 Groundwater Elevation (ft NAVD88)

Groundwater Elevation Well (Piezometer)

Groundwater Quality Monitoring Well in Monitoring Network

Interpreted Groundwater Flow Direction

Potentiometric Surface Contour (ft amsl)

Approximate Property Boundary

Approximate CCR Permit Boundary

Approximate Ash Pond A Location

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Document Path: G:\Plant Mitchell\mxds\Event14_GWE.mxd

Plant Mitchell
Putney, Georgia

Potentiometric Surface
Upper Bedrock - October 2020

Prepared By-Date: THP - 2/12/2021	wood.
Checked By-Date: JMQ - 2/12/2021	
Project Number: 6122160170	

Figure: 4

APPENDIX A

WELL INSTALLATION REPORT

Groundwater Monitoring Well Installation Report

Georgia Power Company – Plant Arkwright

Ash Pond 2 Dry Ash Stockpile
Project No.: 6122201429

Prepared for:

Georgia Power

Atlanta, Georgia

2/15/2021

Professional Groundwater Scientist Certification

I certify that I am a qualified ground-water scientist who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by myself or by a subordinate working under my direction. We certify that the information included is to the best of our knowledge and belief, true, accurate and complete. In preparing this report, we have relied on information provided by Southern Company Services and Georgia Power.

Gregory J. Wrenn, P.E.
Registered Professional Engineer
Professional Engineer No. 025565

Date: Feb. 15, 2021

Nicholas J. McMillan, P.G.
Registered Professional Geologist
Georgia Registration No. 2308

Date: Feb. 15, 2021

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1.0 INTRODUCTION

The Georgia Power Company (GPC) former Plant Arkwright is located in Bibb County, Georgia approximately 6 miles northwest of the city of Macon. The former coal-fired power plant was retired in 2002 and decommissioned in 2003. The Ash Pond 2 Dry Ash Stockpile (AP-2 DAS) area is comprised of approximately 11 acres, located between Arkwright Road to the north and Beaverdam Creek in the south.

AP-2 DAS was in operation in the 1950s and was estimated to be closed in-place in the late 1970s to early 1980s. In 2010, GPC officially closed the AP-2 DAS with the Georgia Environmental Protection Division's (GA EPD) approval. Post-closure groundwater monitoring for AP-2 DAS is performed on a semi-annual basis in accordance with the GA EPD monitoring requirements.

Pursuant to regulations, GPC implemented a groundwater monitoring system within the uppermost aquifer at AP-2 DAS. The monitoring system is designed to monitor groundwater passing the waste boundary of AP-2 DAS within the uppermost aquifer. Wells are positioned to serve as upgradient and downgradient monitoring points based on groundwater flow direction.

In order to supplement the groundwater monitoring system, two additional delineation piezometers (ARAMW-7 and ARAMW-8) were installed to delineate SSLs of constituents observed at compliance well monitoring locations ARGWC-22 and ARGWC-23. The current monitoring well network at AP-2 DAS now consists of two upgradient monitoring wells (ARGWA-19 and ARGWA-20) and three downgradient monitoring wells (ARGWC-21, ARGWC-22, and ARGWC-23). Additionally, four delineation piezometers (ARAMW-1, ARAMW-2, ARAMW-7, and ARAMW-8) have been installed at the downgradient edge of AP-2 DAS.

This report provides details for the drilling and installation of vertical delineation piezometers ARAMW-7 and ARAMW-8 in November 2020. The delineation piezometer details are included in **Table 1: Summary of Piezometer Construction** and the locations are shown in **Figure 1: Monitoring Network Well Location Map.**

2.0 DRILLING AND WELL INSTALLATION

The following sections provide details and description of drilling methodology, materials, and installation procedures used in constructing the vertical delineation piezometers ARAMW-7 and ARAMW-8. Monitoring piezometer installation details are summarized in **Table 1**.

2.1 Drilling Method

Wood provided oversight and documented drilling and installation of the two vertical delineation piezometers by Cascade Drilling, under contract with Southern Company, on November 13 and November 14, 2020. The drilling was performed using sonic technology with a Terra Sonic, compact, track-mounted drill rig. To provide clearance of any potential underground utilities, the first 10 feet of ARAMW-7 was completed by hand auger, and the first 10 feet of ARAMW-8 was completed by air knife.

Following subsurface clearance, a 4-inch diameter sampling core barrel and tooling, followed by a 6-inch override (outer) casing, was advanced via sonic methodology to depths of 48 feet and 47 feet at the ARAMW-7 and ARAMW-8 locations, respectively, for the purpose of collecting soil and rock for characterization and subsequent piezometer installation. Soil and/or rock were collected continuously, in core runs up to 10 feet, from the ground surface to the boring termination depth. Upon completion of a core run, prior to retracting the core barrel, 6-inch override (outer) casing was advanced over the 4-inch core barrel and tooling to maintain borehole integrity. Once the override casing was in place, the core barrel was retracted from the borehole and the soil and/or rock sample was extruded into a plastic sleeve and provided to the Wood field geologist for characterization and documentation. After sample retrieval, the core barrel was advanced and another core run was completed. This process was continued until the target depth was reached.

Upon reaching the target depth, the 6-inch override casing was used to flush/clean-out the borehole and left in place for piezometer construction. The piezometer was installed directly through the override casing. The screen and casing (riser) were placed in the override casing and the annular space was filled (i.e., emplacement of the filter pack, bentonite, and grout) as the override casing was retracted.

2.2 Screened Interval

The vertical delineation piezometers are screened in the bedrock and are constructed with 10 feet of slotted screen as shown in the boring logs provided in **Appendix A: Well Construction and Boring Logs**. The screen interval of each piezometer is set at a depth that establishes vertical separation from the screened zone of a nearby shallower monitoring well screened in the overburden. Specifically, there is approximately nine to nine and a half feet of vertical

separation between the bottom of the nearest overburden monitoring well (ARGWC-22 and ARGWC-23) and the top of the filter pack of the delineation piezometer set in bedrock.

2.3 Well Casing and Screens

The piezometers are constructed of 2-inch inside diameter Schedule 40 polyvinyl chloride (PVC) casing (riser) and pre-packed Number 10 slot (0.010-inch aperture) screen. The pre-pack screens are comprised of a 5-foot section of slotted PVC screen covered with a stainless-steel mesh (outer screen) to contain filter pack material situated between the outer stainless-steel mesh and the slotted PVC. Two pre-packed screens were used in the construction of each piezometer. Well construction materials are designed to be sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. The casing and screen sections were flush-threaded and did not require the use of solvent or adhesive to construct the piezometers. The pre-packed well screens generally combine a centralized inner well screen (slotted PVC), a void filled with filter pack (sand) appropriately sized for the screen aperture, and an outer conductor screen (stainless steel mesh) in one integrated unit.

The piezometers were designed and constructed to:

1) allow sufficient groundwater flow to the piezometer for sampling;
2) minimize the passage of formation materials (turbidity) into the piezometers; and,
3) ensure sufficient structural integrity to prevent collapse of the piezometer.

2.4 Filter Pack

The filter pack material is designed to be chemically inert, clean, well-graded, well-rounded, dimensionally stable, silica (quartz) sand of which the 80 to 90 percent retained size is 0.010-inch diameter (the screen aperture). The filter pack sand used for the construction of the piezometers was the #1 well gravel from Southern Products & Silica Co. The filter pack material was emplaced in the annular space between the outside of the pre-pack screen and borehole wall to ensure an adequate thickness of filter pack material between the well and the formation. The filter pack was extended approximately two to three feet above the top of the screen. Potable water was mixed with the filter pack material to generate a slurry in order to prevent bridging from occurring during filter pack emplacement. After installing the filter pack, the wells were pumped to ensure settlement of the filter pack material, prior to installing the annular seal. The filter pack depth/interval is documented in well construction logs provided in **Appendix A**.

2.5 Annular Seal

After installing the filter pack, approximately three to three and a half feet of bentonite pellets were emplaced in the annular space directly above the filter pack to seal the annulus and

prevent vertical flow of water along the well casing. The bentonite used for the construction of the piezometers were 3/8-inch, non-coated pellets (PDS Pel-Plug). The bentonite pellets were allowed to hydrate and settle in accordance with the manufacturer's recommendations prior to grouting the well.

After the bentonite was adequately hydrated, the remaining annular space was sealed using AQUAGUARD by Baroid Industrial Drilling Products, a sodium bentonite blended grout. The grout was prepared in accordance with manufacturer's instructions and emplaced from the bentonite seal to the near ground surface via tremie method. The grout was injected at a low velocity as to not displace the bentonite seal and the tremie pipe was raised as grout filled the annular space. A concrete seal extends from approximately two feet below ground surface to grade and was formed into a slightly mounded cement apron extending outward to help direct rainwater run-off away from the piezometer.

2.6 Cap and Protective Casing

Each piezometer was fitted with a sealable cap and a lockable, 4-inch square, steel, above-grade (stick-up) protective casing was installed over the piezometer to protect the PVC riser from damage and secure the well from unauthorized access. The annular space between the piezometer riser and protective casing was filled with pea-size gravel, and a small weep-hole was drilled near the base to allow for drainage from inside the protective casing. Additionally, bollards were installed at the corners of the concrete pad to protect the piezometer. Prior to leaving the site, each piezometer was secured with a padlock, keyed specific to the site (Master, 2246 key). Piezometer construction details are documented in Well Construction Logs provided in **Appendix A**.

3.0 WELL DEVELOPMENT

Each piezometer was developed using an electric submersible pump to restore the natural hydraulic conductivity of the formation and to remove fine-grained sediment to help ensure low-turbidity groundwater samples. Wells were alternately surged and purged until visually clear of particulates. Groundwater quality parameters, including turbidity, pH, and specific conductivity were monitored for stabilization during development to verify that each piezometer was adequately developed.

Development of the piezometers continued until criteria indicating adequate development was achieved. Development is generally recognized as being complete when the well/piezometer yields water with a turbidity less than 10 Nephelometric Turbidity Units (NTU) and the pH and specific conductivity have stabilized (i.e., pH within 0.1 standard unit and specific conductivity within 5% over three consecutive measurements). The development forms are included in **Appendix B: Well Development Forms**.

Prior to deploying the development pump in each piezometer, the pump was decontaminated and fitted with new disposable tubing. New, disposable, nitrile gloves were worn throughout the development process, including when initially deploying the pump, handling the pump and tubing while surging, and during decontamination activities.

4.0 SURVEY

Piezometer locations, top of casing (TOC) elevations, and ground surface elevations were surveyed by Donaldson Garrett & Associates, Inc. Northings and easting are in feet relative to Georgia State Plane, West Zone, North America Datum of 1983 (NAD 83). TOC and ground surface elevations are in feet above mean sea level relative to North American Vertical Datum of 1988 (NAVD 88). Survey data are included in **Table 1**. A certified well survey report is provided in **Appendix C: Well Survey Document**.

5.0 GENERAL REFERENCES

Southern Company Services, Inc., 2016, Draft Monitoring Well Development Procedures, Birmingham, Alabama, March 2016.

USEPA, 2018. Science and Ecosystem Support Division, Guidance: SESDGUID-101-R2 Design and Installation of Monitoring Wells, US Environmental Protection Agency, Region 4, Athens, Georgia, January 16, 2018.

USEPA, 2020. Laboratory Services and Applied Science and Division, Operating Procedure: LSASDPROC-205-R4 Field Equipment Cleaning and Decontamination, US Environmental Protection Agency, Region 4, Athens, Georgia, June 22, 2020.

TABLE

TABLE 1
SUMMARY OF PIEZOMETER CONSTRUCTION

Well	Installation Date	Northing [1]	Easting [1]	Top of Casing Elevation (ft msl)[2]	Ground Surface Elevation (ft msl)[3]	Top of Screen Elevation (ft msl)[3]	Screen Bottom Elevation (ft msl)[3]	Screen Length (feet)	Total Boring Depth on Construction Log (ft below land surface)	Total Well Depth Measured (ft below TOC)[4]	Groundwater Zone Screened	Location
ARAMW-7	11/14/2020	1063049.07	2438913.27	309.81	307.13	269.3	259.3	10.0	48.0	50.82	Bedrock	Downgradient
ARAMW-8	11/13/2020	1062895.98	2439197.40	307.36	304.53	268.1	258.1	10.0	47.0	49.61	Bedrock	Downgradient

Notes:

1. Horizontal locations referenced to Georgia State Plane West, North American Datum of 1983 (NAD 83)
2. ft msl indicates feet above mean sea level
3. Elevations referenced to North American Vertical Datum of 1988 (NAVD 88)
4. TOC indicates top of casing

Prepared by: KN 1/11/2021
Checked by: NJM 1/25/2021

FIGURE

N

ARGWA-19

ARGWA-20

ARAMW-7

ARGWC-22

ARGWC-21

ARAMW-1

ARAMW-2

ARAMW-8

ARGWC-23

Legend

- Vertical Delineation Piezometer Installed November 2020
- Groundwater Monitoring Network Well
- Piezometer Installed November 2019
- Approximate Limits of AP-2DAS Waste
- Approximate Property Boundary

0 50 100 200 Feet

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Plant Arkwright
Macon, Georgia

Monitoring Network Well Location Map

Prepared By-Date: NJM - 1/25/2021	
Checked By-Date: RQ - 1/25/2021	wood.
Project Number: 6122201429	**Figure: 1**

Document Path: Z:\Arkwright\1_MXDs\Report_Figs\Nov_2020_Well_Install\AP2_Well_Loc.mxd

APPENDIX A

WELL CONSTRUCTION AND BORING LOGS

BORING ARAMW-7

wood.

CLIENT Georgia Power
PROJECT NAME Plant Arkwright
PROJECT NUMBER 6122201429
PROJECT LOCATION Bibb County, Georgia
DATE STARTED 11/14/20 **COMPLETED** 11/14/20
GROUND ELEVATION 307.13 ft **HOLE SIZE** 6-in
DRILLING CONTRACTOR Cascade
GROUND WATER LEVELS:
DRILLING METHOD Sonic
AT TIME OF DRILLING ---
LOGGED BY KN **CHECKED BY** NJM
AT END OF DRILLING ---
COORDINATES N:1063049.07, E: 2438913.27
AFTER DRILLING 12.81ft (11/18/2020)

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Top Elev: 309.81 (ft) Casing Type: 2 in SCH 40 PVC
					-SILTY SAND (SM), reddish brown, loose, moist, with some clay.	
10					10.0 / 297.1	
					-POORLY GRADED GRAVELLY SAND (SG), gray, loose, moist, with organics.	
					13.5 / 293.6	
15					-SAND (SP), gray-brown, medium dense, moist, with some silt and clay.	
					15.5 / 291.6	Grout
					16.5 / 290.6 -CLAYEY SAND (SC), gray-brown, dense with some silt and trace cobbles.	
20					-SILTY SAND (SM), yellow-brown to brown, medium dense, saprolitic, wet, with plagioclase/quartz rich areas.	2 in SCH 40 PVC
25						
30					(Same as above) small schist fragments.	
					32.0 / 275.1	Top of Bentonite Seal 276.1
					-PARTIALLY WEATHERED GNEISS, brown-gray, highly fractured.	Bentonite seal
35						Top of Filter Pack 272.6
						Top of Screen 269.3
40					-GNEISS, competent with some fractures.	Gravel Pack #1-Southern Product and Silica Co.
						10 feet of 0.01-inch slotted 2" OD PVC (SCH 40)
45						Bottom of Screen 259.3
					48.0 (Same as above) weathered. 259.1	Sump and cap (0.3 ft)

Boring terminated at 48 feet.

BORING ARAMW-8

CLIENT Georgia Power
PROJECT NAME Plant Arkwright
PROJECT NUMBER 6122201429
PROJECT LOCATION Bibb County, Georgia
DATE STARTED 11/13/20 **COMPLETED** 11/13/20
GROUND ELEVATION 304.53 ft **HOLE SIZE** 6-in
DRILLING CONTRACTOR Cascade
GROUND WATER LEVELS:
DRILLING METHOD Sonic
AT TIME OF DRILLING ---
LOGGED BY KN **CHECKED BY** NJM
AT END OF DRILLING ---
COORDINATES N:1062895.98, E: 2439197.40
AFTER DRILLING 11.97ft (11/17/2020)

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Top Elev: 307.36 (ft) Casing Type: 2 in SCH 40 PVC
					-CLAYEY SAND (SC), brownish orange, loose to medium dense, moist	
12.5					292.0	
					-SILTY SAND (SM), grayish brown, saprolitic, medium dense, wet, with quartz and plagioclase grain rich areas.	Grout
						2 in SCH 40 PVC
					trace clay and mica.	
					(Same as above) poor recovery from 30-35 feet, saprolite and PWR.	Top of Bentonite Seal 273.5
						Bentonite seal
35.0					269.5	Top of Filter Pack 270.5
					-GNEISS, fractured, slightly weathered.	Top of Screen 268.1
						Gravel Pack #1-Southern Product and Silica Co.
					micaceous seam.	10 feet of 0.01-inch slotted 2" OD PVC (SCH 40)
						Bottom of Screen 258.1
47.0					257.5	Sump and cap (0.3 ft)

Boring terminated at 47 feet.

APPENDIX B

WELL DEVELOPMENT FORMS

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location:

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: ARAMW-7

Field Sampling Personnel:
DEVELOPMENT K.NYE

Depth to Screen below MP: 40.52 of screen (Top) 50.52 of screen (Bottom)

Pump Intake at (ft. below MP): VARIED

Purging Device (Pump Type): ELECTRIC SUBMERSIBLE
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Well Depth, (Ft.) 50.82
Depth To Water (Ft.) 12.81
Water Column (Ft.) 38.01
Well Volume (gal) ~6.20

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate GPM ~~mL/min~~	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
11/18/20	1051	12.81	2.0			OL				—	N/A	N/A	STARTED ~ 2.0 GPM
	1104	33.34	—			16.3				25.0			RATE ↓ ~1.5 GPM, STOP - SURGE
	1122	14.78	2.0			579				—			RESTART ~2.0 GPM
	1137	37.18	1.5			10.6				50.0			GPM ↓ ~1.5 DURING PURGE
	1139	—	—			—				—			STOPPED - SURGED
	1154	13.51	2.0			338				—			RESTART ~ 2.0 GPM
	1209	32.04	1.5			4.62				75.0			RATE ↓ ~1.5 GPM DURING PURGE
	1215	—	—			—				—			STOPPED - SURGED
	1226	15.23	2.0			324				—			RESTART ~2.0 GPM
	1241	32.10	1.5			4.32				100.0			RATE ↓ ~1.5 GPM
	1256	32.22	1.5			0.93				122.5			PUMPING ACROSS SCREEN IN
	1311	32.29	1.5			0.88				145.0			PUMPING MID-SCREEN
	1321	32.28	1.5			1.89				160.0			
	1331	32.28	1.5			0.74				175.0			SCALED RATE TO ~1.0 GPM
	1346	30.92	1.0	6.15	1.741	1.35	0.51	18.06	75.7	190.0			STARTED LOGGING - YSI556
	1351	30.41	1.0	6.13	1.742	1.01	0.50	18.07	46.2	195.0			
	1356	30.36	1.0	6.12	1.743	1.24	0.39	18.07	32.4	200.0			
	1401	30.36	1.0	6.12	1.744	0.96	0.34	18.07	19.6	205.0			
	1406	30.36	1.0	6.12	1.745	1.33	0.32	18.06	11.4	210.0			
	1411	30.36	1.0	6.11	1.746	0.94	0.25	18.06	0.5	215.0			

Notes:
Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings) ±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Well Casing Volume (Gal):
2" diameter well: Water column (ft.) x 0.163
4" diameter well: Water column x 0.653

040002.03

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location:

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: ARAMW-8

Field Sampling Personnel:
DEVELOPMENT K.NYE

Depth to Screen below MP: 39.31 of screen (Top) 49.31 of screen (Bottom)

Pump Intake at (ft. below MP): VARIED

Purging Device (Pump Type): ELECTRIC SUBMERSIBLE
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Well Depth, (Ft.) 49.61
Depth To Water (Ft.) 11.97
Water Column (Ft.) 37.64
Well Volume (gal) ~ 6.14

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
11/17/20	1317	11.97	7500			OL				—			START ~ 2.0 GPM
	1322	DRY	—			187				8.0			RATE ↓ DURING PUMPING
	1359	35.00	—			—				—			CONTINUING TO RECHARGE
	1430	37.00	—			—				—			SURGING
	1441	32.82	5700			OL				—			RESTARTED ~ 1.5 GPM
	1444	DRY	—			—				12.5			
	1523	38.50	—			—				—			SURGING
	1532	38.35	5700			OL				—			RESTART ~ 1.5 GPM
	1534	DRY	—			—				15.5			
	1614	38.00	—			—				—			SURGING
	1615	37.50	800			—				—			RESTARTED LOWER RATE
	1622	41.35	900			OL				16.2			
	1625	43.30	400			473				16.9			↓ RATE
	1630	44.03	400			485				17.4			
	1635	44.89	400			257				17.9			
	1641	45.86	400			106				18.5			
	1646	46.79	400			134				19.0			
	1651	47.64	400			252				19.5			
	1656	(PUMP)	350			236				20.0			
	1701	DRY	—			—				20.4			
	1709	46.90	—			—				—			SURGES
	1719	45.57	7500			843				21.0			PUMPED DRY

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings)±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Well Casing Volume (Gal):
2" diameter well: Water column (ft.) x 0.163
4" diameter well: Water column x 0.653

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location:

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: ARAMW-8

Field Sampling Personnel: DEVELOPMENT R. NYE

Depth to Screen below MP: 39.31 of screen (Top) 49.31 of screen (Bottom)

Pump Intake at (ft. below MP): VARIES

Purging Device (Pump Type): ELECTRIC SUBMERSIBLE
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Well Depth, (Ft.) 49.61
Depth To Water (Ft.) 11.97
Water Column (Ft.) 37.64
Well Volume (gal) ~ 6.14

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
11/18/20	0835	11.98	—			—				21.0			FULL RECOVERY OVERNIGHT - SURGING
	0848	11.98	7500			658				—			STARTED PURGE ~ 2.0 GPM
	0853	DRY	—			457				28.0			RATE ↓ AS PUMPED
	0935	37.50	—			—				—			SURGING
	0944	37.32	5700			702				—			RESTARTED ~ 1.5 GPM
	0946	DRY	—			338				31.0			STOPPED - PULLED PUMP
11/18/20	1440	14.73	—			—				—			SURGING
	1454	~~14.77~~	7500			576				—			STARTED ~ 2.0 GPM
	1458	DRY	—			181				38.0			TURBIDITY ↓
	1536	38.84	—			—				—			RECHARGING - SURGING
	1543	38.60	7500			743				—			RESTART
	1545	DRY	—			224				40.0			
	1644	36.63	—			—				—			SURGING
	1648	36.58	7500			1182				—			RESTART
	1650	DRY	—			117				42.5			
	1716	40.79	—			—				—			RECHARGE - SURGE
	1722	40.50	1000			269				—			STARTED PURGE ↓ RATE
	1724	41.63	700			185				43.0			↓ RATE
	1727	42.52	300	7.37	0.608	112	6.85	19.13	41.2	43.2			STARTED LOGGER - YSI 556
	1732	43.60	300	7.27	0.637	73.2	7.38	19.67	54.6	43.5			
	1737	44.18	300	7.25	0.641	41.4	7.33	19.54	60.3	43.8			
	1742	45.76	300	7.34	0.626	20.3	7.10	20.07	61.6	44.1			

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings) ±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Well Casing Volume (Gal):
2" diameter well: Water column (ft.) x 0.163
4" diameter well: Water column x 0.653

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location:

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: ARAMW-8

Field Sampling Personnel:
DEVELOPMENT R.NYE

Depth to Screen below MP: 39.31 of screen (Top) 49.31 of screen (Bottom)

Pump Intake at (ft. below MP): VARIED

Purging Device (Pump Type): ELECTRIC SUBMERSIBLE
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Well Depth, (Ft.) 49.61
Depth To Water (Ft.) 11.97
Water Column (Ft.) 37.64
Well Volume (gal) ~6.14

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
11/12/20	1748	46.84	300	7.40	0.580	11.5	6.81	20.14	61.8	44.4			
	1753	47.92	300	7.47	0.546	8.6	6.76	20.15	62.1	44.7			
	1758	(P.no)	300	7.54	0.523	6.4	4.78	20.12	57.8	45.0			
	1801	DRY	—	—	—	—	—	—	—	45.1			

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings) ±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Well Casing Volume (Gal):
2" diameter well: Water column (ft.) x 0.163
4" diameter well: Water column x 0.653

APPENDIX C

WELL SURVEY DOCUMENT

GEORGIA POWER
PLANT ARKWRIGHT
MONITORING WELL SURVEY DATA
December 18, 2020
DGA JOB # 6620-002-D1, C1335

WELL ID	NORTHING	EASTING	ELEVATIONS			
			GROUND	NAIL	TOP OF	TOP OF
			ELEVATION	IN CONCRETE	WELL PAD	CASING
AP3PZ-1	1066652.20	2436953.26	361.53		NO PAD	364.22
AP3PZ-1A	1066656.17	2436950.62	361.37		NO PAD	364.36
AP3PZ-2	1065960.86	2437314.65	361.69		NO PAD	364.93
AP3PZ-2A	1065955.86	2437317.22	361.55		NO PAD	364.74
AP3PZ-3	1065501.28	2437527.97	360.11		NO PAD	362.69
AP3PZ-3A	1065495.58	2437530.17	360.25		NO PAD	363.23
AP3PZ-4	1065047.94	2437729.54	358.54		NO PAD	361.32
AP3PZ-4A	1065042.69	2437732.09	358.56		NO PAD	361.57
AP3PZ-5A	1064633.46	2437909.87	357.02		NO PAD	360.14
ARAMW-1	1062938.38	2439120.01	305.07		305.49	308.51
ARAMW-2	1062925.96	2439114.97	305.12		305.23	308.27
ARAMW-3	1064530.73	2437569.81	352.20		352.41	355.39
ARAMW-4	1065463.83	2438004.43	364.56	364.83		367.86
ARAMW-6	1064439.35	2437606.99	334.23		334.56	337.46
ARAMW-7	1063049.07	2438913.27	307.13	307.13		309.81
ARAMW-8	1062895.98	2439197.40	304.53	304.94		307.36
ARGWA-12	1067003.79	2436788.45	369.27		369.56	372.72
ARGWA-13	1065951.25	2438129.93	368.10		368.72	371.57
ARGWA-14	1066023.70	2438384.80	384.94		385.46	388.25
ARGWA-19	1063774.45	2439488.71	339.86		340.38	343.30
ARGWA-20	1063732.73	2439088.01	327.73		328.37	331.28
ARGWA-24	1066895.28	2437012.63	370.85	371.08		373.75
ARGWA-3	1066899.39	2437431.05	386.53		386.94	388.33
ARGWA-5	1066885.12	2437209.22	373.51		373.69	376.15
ARGWC-10	1065419.44	2437192.51	367.56		367.77	370.67
ARGWC-15	1065475.43	2438360.90	371.76		372.51	375.64
ARGWC-16	1065263.69	2438174.15	361.52		361.98	364.90
ARGWC-17	1065458.82	2438009.52	365.04		365.31	368.24
ARGWC-18	1064482.45	2437961.15	351.92		352.42	355.20
ARGWC-21	1062941.24	2439112.52	305.97		306.34	309.15
ARGWC-22	1063039.36	2438925.04	307.01		307.08	309.95
ARGWC-23	1062884.38	2439202.38	304.29		304.67	307.70
ARGWC-7	1064410.59	2438355.19	348.97		349.13	352.42
ARGWC-8	1064521.98	2437572.92	352.19		352.26	355.53
ARGWC-9	1065139.64	2437297.96	363.44		363.87	367.07
CCRLF-1	1065801.62	2437806.69	354.06	354.39		357.51
CCRLF-2	1066565.98	2437457.04	367.27	367.64		370.67
CCRLF-3	1066338.44	2437920.60	372.06	372.37		375.19
CCRLF-4	1066801.77	2437509.61	370.11	370.47		373.35
CCRLF-5	1066251.06	2438257.93	385.88	386.16		388.73
INV. 24" PIPE	1064401.47	2437857.62	318.50			
WET WELL	1064422.09	2437710.35			330.81	329.20 (TOP OF WELL PIPE)

COORDINATES ARE GA STATE PLANE, WEST ZONE, NAD 83.
ELEVATIONS ARE BASED ON MEAN SEA LEVEL, NAVD 88.

Survey data shown below has a horizontal positional tolerance of +/-0.5 feet and a vertical positional tolerance of +/- 0.01 feet at the 95% level of confidence.
Equipment used to obtain horizontal and vertical coordinates was a LEICA SYSTEM 1200 GPS RECEIVER WITH A LEICA RX1200 DATA COLLECTOR.
Benchmark used to establish horizontal and vertical positions was established from LEICA SMARTNET REAL TIME NETWORK.

APPENDIX B

FIELD SAMPLING LOGS AND ANALYTICAL DATA REPORTS

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-109846-1
Client Project/Site: CCR - Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
9/24/2020 4:40:14 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-109846-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-109846-1

Comments
No additional comments.

Receipt
The samples were received on 8/20/2020 9:30 AM, 8/21/2020 9:45 AM and 8/22/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 9 coolers at receipt time were 1.1° C, 1.2° C, 1.5° C, 1.6° C, 2.1° C, 2.4° C, 2.6° C, 2.7° C and 3.6° C.

Receipt Exceptions
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWC-10 (180-109848-1). The container labels list an id of GWC-10 while the COC lists ARGWC10.
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWC-9 (180-109848-3). The container labels list an id of GWC-9 while the COC lists ARGWC-9. The id's on the Coc were used.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWA-5 (180-109850-1). The container labels list an id of GWA-5 while the COC lists ARGWA-5.
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWA-3 (180-109850-2). The container labels list an id of GWA-3 while the COC lists ARGWA-3.
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWC-7 (180-109850-3). The container labels list an id of GWC-7 while the COC lists ARGWC-7. The id's on the Coc were used.

GC Semi VOA
Method 300.0: The matrix spike and matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 180-326478 were outside control limits for Fluoride: (180-109846-B-2 MS) and (180-109846-B-2 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

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

Metals
Methods 6020A, 6020B: The ICVL failed high for tin. Another (ICVL 180-330300/6) made from a separate stock solution was run and passes for 6020B method with 103% recovery ; therefore, the data has been reported.

Method 6020B: The method blank for preparation batch 180-327642 contained boron above the reporting limit (RL). None of the samples associated with this method blank contained the target compound above the RL; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 6020B: The method blank for preparation batch 180-327640 contained zinc above the reporting limit (RL). None of the samples associated with this method blank contained the target compound above the RL; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 7470A: The continuing calibration verification (CCV) associated with batch 180-328261 recovered above the upper control limit for mercury. The samples associated with this CCV were non-detects for the affected analytes or were below the reporting limit (RL); therefore, the data have been reported.

Method 7470A: The low level continuing calibration verification (CCVL) associated with batch 180-328261 recovered above the upper control limit for mercury. The samples associated with this CCVL were non-detects for the affected analytes or below the reporting limit (RL); 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.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 180-109846-1 (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 Arkwright

Job ID: 180-109846-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-109846-1

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21

Sample Summary

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

Job ID: 180-109846-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-109846-1	ARGWA-14	Water	08/19/20 13:55	08/20/20 09:30	
180-109846-2	ARGWC-15	Water	08/19/20 10:05	08/20/20 09:30	
180-109846-3	ARGWC-16	Water	08/19/20 12:05	08/20/20 09:30	
180-109847-1	FB#1	Water	08/18/20 11:00	08/20/20 09:30	
180-109847-2	ARGWA-12	Water	08/18/20 13:00	08/20/20 09:30	
180-109847-3	ARGWA-13	Water	08/18/20 14:50	08/20/20 09:30	
180-109847-4	ARGWC-17	Water	08/18/20 14:45	08/20/20 09:30	
180-109848-1	ARGWC-10	Water	08/19/20 11:35	08/20/20 09:30	
180-109848-2	DUP-1	Water	08/19/20 00:00	08/20/20 09:30	
180-109848-3	ARGWC-9	Water	08/19/20 14:25	08/20/20 09:30	
180-109850-1	ARGWA-5	Water	08/18/20 11:35	08/20/20 09:30	
180-109850-2	ARGWA-3	Water	08/18/20 13:20	08/20/20 09:30	
180-109850-3	ARGWC-7	Water	08/18/20 15:25	08/20/20 09:30	
180-109851-1	EB#2	Water	08/19/20 09:15	08/20/20 09:30	
180-109851-2	ARGWA-19	Water	08/19/20 10:56	08/20/20 09:30	
180-109851-3	ARGWA-20	Water	08/19/20 13:44	08/20/20 09:30	
180-109851-4	ARGWC-22	Water	08/19/20 15:32	08/20/20 09:30	
180-109918-1	FB#2	Water	08/20/20 10:45	08/21/20 09:45	
180-109918-2	ARGWC-23	Water	08/20/20 12:15	08/21/20 09:45	
180-109918-3	DUP-2	Water	08/20/20 00:00	08/21/20 09:45	
180-109918-4	ARAMW-1	Water	08/20/20 14:36	08/21/20 09:45	
180-109918-5	ARAMW-2	Water	08/20/20 16:35	08/21/20 09:45	
180-109929-1	ARGWC-8	Water	08/20/20 10:35	08/21/20 09:45	
180-109929-2	ARGWC-18	Water	08/20/20 17:05	08/21/20 09:45	
180-109930-1	EB#1	Water	08/20/20 09:30	08/21/20 09:45	
180-109930-2	ARAMW-3	Water	08/20/20 14:45	08/21/20 09:45	
180-109930-3	ARAMW-4	Water	08/20/20 11:45	08/21/20 09:45	
180-109970-1	ARAMW-6	Water	08/21/20 09:45	08/22/20 10:00	
180-109970-2	ARGWC-21	Water	08/21/20 10:36	08/22/20 10:00	

Method Summary

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

Job ID: 180-109846-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	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
Filtration	Sample Filtration	None	TAL PIT

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.

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 Arkwright

Job ID: 180-109846-1

Client Sample ID: ARGWA-14

Lab Sample ID: 180-109846-1
Date Collected: 08/19/20 13:55
Matrix: Water
Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326785	08/24/20 08:46	EPS	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:08	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:09	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 13:55	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-15

Lab Sample ID: 180-109846-2
Date Collected: 08/19/20 10:05
Matrix: Water
Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326478	08/21/20 13:28	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:11	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:13	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 10:05	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-16

Lab Sample ID: 180-109846-3
Date Collected: 08/19/20 12:05
Matrix: Water
Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326785	08/24/20 09:01	EPS	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:36	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:14	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 12:05	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: FB#1

Lab Sample ID: 180-109847-1

Date Collected: 08/18/20 11:00

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326917	08/25/20 11:35	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:40	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:15	RJR	TAL PIT
	Instrument ID: HGY									

Client Sample ID: ARGWA-12

Lab Sample ID: 180-109847-2

Date Collected: 08/18/20 13:00

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326917	08/25/20 11:50	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:43	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:16	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/18/20 13:00	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-13

Lab Sample ID: 180-109847-3

Date Collected: 08/18/20 14:50

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 14:31	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:47	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:17	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/18/20 14:50	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-17

Lab Sample ID: 180-109847-4

Date Collected: 08/18/20 14:45

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 14:47	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:50	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:21	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/18/20 14:45	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-10

Lab Sample ID: 180-109848-1

Date Collected: 08/19/20 11:35

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 05:59	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 21:54	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:22	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 11:35	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-1

Lab Sample ID: 180-109848-2

Date Collected: 08/19/20 00:00

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 06:46	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 22:06	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:23	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 00:00	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-9

Lab Sample ID: 180-109848-3

Date Collected: 08/19/20 14:25

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 07:02	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327640	08/28/20 15:02	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 22:10	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:24	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 14:25	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-5

Lab Sample ID: 180-109850-1

Date Collected: 08/18/20 11:35

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 07:50	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 17:56	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:25	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/18/20 11:35	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-3

Lab Sample ID: 180-109850-2

Date Collected: 08/18/20 13:20

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 08:06	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 18:14	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:26	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/18/20 13:20	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-7

Lab Sample ID: 180-109850-3

Date Collected: 08/18/20 15:25

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 08:21	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 18:18	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:27	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/18/20 15:25	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: EB#2

Lab Sample ID: 180-109851-1

Date Collected: 08/19/20 09:15

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 10:19	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 18:21	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:28	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326608	08/21/20 11:11	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-19

Lab Sample ID: 180-109851-2

Date Collected: 08/19/20 10:56

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 11:50	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 18:25	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:29	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 10:56	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-20

Lab Sample ID: 180-109851-3

Date Collected: 08/19/20 13:44

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 12:06	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 18:36	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:30	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 13:44	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-22

Lab Sample ID: 180-109851-4

Date Collected: 08/19/20 15:32

Matrix: Water

Date Received: 08/20/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			326890	08/25/20 10:35	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		10			326890	08/25/20 11:31	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330300	09/17/20 18:39	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	327642	08/28/20 15:10	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330464	09/18/20 13:03	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	328121	09/02/20 05:45	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328261	09/02/20 15:34	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326608	08/21/20 11:11	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			326626	08/19/20 15:32	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FB#2

Lab Sample ID: 180-109918-1

Date Collected: 08/20/20 10:45

Matrix: Water

Date Received: 08/21/20 09:45

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			326777	08/24/20 14:46	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:16	DSH	TAL PIT
	Instrument ID: DORY									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: FB#2

Lab Sample ID: 180-109918-1
Date Collected: 08/20/20 10:45
Matrix: Water
Date Received: 08/21/20 09:45

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	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 09:53	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326682	08/22/20 08:53	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-23

Lab Sample ID: 180-109918-2
Date Collected: 08/20/20 12:15
Matrix: Water
Date Received: 08/21/20 09:45

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			326777	08/24/20 13:43	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:19	DSH	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329474	09/11/20 22:34	DSH	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 09:54	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326682	08/22/20 08:53	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 12:15	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-2

Lab Sample ID: 180-109918-3
Date Collected: 08/20/20 00:00
Matrix: Water
Date Received: 08/21/20 09:45

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			326777	08/24/20 13:59	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:23	DSH	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			330720	09/21/20 15:00	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 09:57	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	326682	08/22/20 08:53	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: DUP-2
Date Collected: 08/20/20 00:00
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-3
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	Field Sampling		1			327279	08/20/20 00:00	FDS	TAL PIT

Client Sample ID: ARAMW-1
Date Collected: 08/20/20 14:36
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-4
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			326785	08/24/20 10:29	EPS	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:26	DSH	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 09:58	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 14:36	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-2
Date Collected: 08/20/20 16:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-5
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			326777	08/24/20 12:32	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:30	DSH	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 09:59	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 16:35	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-8
Date Collected: 08/20/20 10:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-1
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			327077	08/26/20 06:26	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:33	DSH	TAL PIT
	Instrument ID: DORY									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-8

Lab Sample ID: 180-109929-1

Date Collected: 08/20/20 10:35

Matrix: Water

Date Received: 08/21/20 09:45

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	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 10:00	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 10:35	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-18

Lab Sample ID: 180-109929-2

Date Collected: 08/20/20 17:05

Matrix: Water

Date Received: 08/21/20 09:45

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			327077	08/26/20 11:27	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Dissolved	Filtration	Filtration			250 mL	250 mL	326831	08/24/20 09:48	TJO	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			329135	09/10/20 01:40	DSH	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:37	DSH	TAL PIT
	Instrument ID: DORY									
Dissolved	Filtration	Filtration			250 mL	250 mL	326831	08/24/20 09:48	TJO	TAL PIT
Dissolved	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Dissolved	Analysis	EPA 7470A		1			328649	09/05/20 10:03	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 10:01	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 17:05	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: EB#1

Lab Sample ID: 180-109930-1

Date Collected: 08/20/20 09:30

Matrix: Water

Date Received: 08/21/20 09:45

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			327077	08/26/20 11:59	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:00	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:44	DSH	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 10:04	RJR	TAL PIT
	Instrument ID: HGZ									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARAMW-3

Date Collected: 08/20/20 14:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-2

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			327077	08/26/20 13:02	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:01	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 01:55	DSH	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328516	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 10:05	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 14:45	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-4

Date Collected: 08/20/20 11:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-3

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			327077	08/26/20 11:11	EPS	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	328062	09/01/20 16:04	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			329135	09/10/20 02:12	DSH	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328515	09/04/20 08:35	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328649	09/05/20 09:50	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/20/20 11:45	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-6

Date Collected: 08/21/20 09:45
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-1

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			327578	08/28/20 15:07	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	328065	09/01/20 16:08	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			328773	09/04/20 22:07	RJR	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328636	09/05/20 06:15	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328684	09/07/20 08:48	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/21/20 09:45	FDS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-21

Date Collected: 08/21/20 10:36
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-2

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			327578	08/28/20 15:21	MJH	TAL PIT
	Instrument ID: CHICS2000									
Total Recoverable	Prep	3005A			50 mL	50 mL	328065	09/01/20 16:08	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			328773	09/04/20 22:10	RJR	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	328636	09/05/20 06:15	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			328684	09/07/20 08:49	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	Field Sampling		1			327279	08/21/20 10:36	FDS	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: Filtration
- TJO = Tyler Oliver

Batch Type: Prep
- RJR = Ron Rosenbaum
- TJO = Tyler Oliver

Batch Type: Analysis
- AVS = Abbey Smith
- DSH = David Heakin
- EPS = Evan Scheuer
- FDS = Sampler Field
- MJH = Matthew Hartman
- RJR = Ron Rosenbaum
- RSK = Robert Kurtz

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-14

Date Collected: 08/19/20 13:55
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.12**		0.10	0.026	mg/L			08/24/20 08:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:08	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:08	1
Barium	**0.041**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:08	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:08	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:08	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:08	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:08	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:08	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:08	1
Molybdenum	**0.00065**	**J**	0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:08	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:08	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:08	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:09	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.62**				SU			08/19/20 13:55	1

Client Sample Results

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-15

Date Collected: 08/19/20 10:05
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.081**	**J F1**	0.10	0.026	mg/L			08/21/20 13:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:11	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:11	1
Barium	**0.028**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:11	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:11	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:11	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:11	1
Cobalt	**0.00040**	**J**	0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:11	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:11	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:11	1
Molybdenum	**0.0016**	**J**	0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:11	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:11	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:11	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:13	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.47**				SU			08/19/20 10:05	1

Client Sample Results

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-16

Date Collected: 08/19/20 12:05
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/24/20 09:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:36	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:36	1
Barium	**0.045**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:36	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:36	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:36	1
Chromium	**0.0021**		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:36	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:36	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:36	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:36	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:36	1
Selenium	**0.0029**	**J**	0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:36	1
Thallium	**0.00027**	**J**	0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:36	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:14	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.24**				SU			08/19/20 12:05	1

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

Job ID: 180-109846-1

Client Sample ID: FB#1

Date Collected: 08/18/20 11:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 11:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:40	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:40	1
Barium	<0.0016		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:40	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:40	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:40	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:40	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:40	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:40	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:40	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:40	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:40	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:40	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:15	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-12

Date Collected: 08/18/20 13:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.041**	**J**	0.10	0.026	mg/L			08/25/20 11:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:43	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:43	1
Barium	**0.079**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:43	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:43	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:43	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:43	1
Cobalt	**0.00019**	**J**	0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:43	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:43	1
Lithium	**0.0039**	**J**	0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:43	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:43	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:43	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:43	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:16	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.48**				SU			08/18/20 13:00	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-13

Date Collected: 08/18/20 14:50
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 14:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:47	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:47	1
Barium	**0.025**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:47	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:47	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:47	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:47	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:47	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:47	1
Lithium	**0.0042**	**J**	0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:47	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:47	1
Selenium	**0.019**		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:47	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:47	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:17	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.15**				SU			08/18/20 14:50	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-17

Date Collected: 08/18/20 14:45
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 14:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:50	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:50	1
Barium	**0.062**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:50	1
Beryllium	**0.00039**	**J**	0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:50	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:50	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:50	1
Cobalt	**0.030**		0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:50	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:50	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:50	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:50	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:50	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:50	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:21	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.07**				SU			08/18/20 14:45	1

Client Sample Results

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-10

Date Collected: 08/19/20 11:35
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 05:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 21:54	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 21:54	1
Barium	**0.034**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 21:54	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 21:54	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 21:54	1
Chromium	**0.0049**		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 21:54	1
Cobalt	**0.00015**	**J**	0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 21:54	1
Lead	**0.00013**	**J**	0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 21:54	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 21:54	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 21:54	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 21:54	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 21:54	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:22	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.06**				SU			08/19/20 11:35	1

Client Sample ID: DUP-1

Date Collected: 08/19/20 00:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 06:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 22:06	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 22:06	1
Barium	**0.034**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 22:06	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 22:06	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 22:06	1
Chromium	**0.0051**		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 22:06	1
Cobalt	**0.00020**	**J**	0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 22:06	1
Lead	**0.00016**	**J**	0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 22:06	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 22:06	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 22:06	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 22:06	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 22:06	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:23	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.06**				SU			08/19/20 00:00	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-9

Date Collected: 08/19/20 14:25
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 07:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 22:10	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 22:10	1
Barium	**0.046**		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 22:10	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 22:10	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 22:10	1
Chromium	**0.0080**		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 22:10	1
Cobalt	**0.00013**	**J**	0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 22:10	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 22:10	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 22:10	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 22:10	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 22:10	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 22:10	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:24	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.21**				SU			08/19/20 14:25	1

Client Sample Results

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-5

Date Collected: 08/18/20 11:35
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 07:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 17:56	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 17:56	1
Barium	**0.031**		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 17:56	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 17:56	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 17:56	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 17:56	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 17:56	1
Lead	**0.00013**	**J**	0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 17:56	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 17:56	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 17:56	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 17:56	1
Thallium	**0.00021**	**J**	0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 17:56	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:25	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.18**				SU			08/18/20 11:35	1

Client Sample Results

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-3

Date Collected: 08/18/20 13:20
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 08:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 18:14	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 18:14	1
Barium	**0.021**		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 18:14	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 18:14	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 18:14	1
Chromium	**0.0027**		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 18:14	1
Cobalt	**0.00022**	**J**	0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 18:14	1
Lead	**0.00019**	**J**	0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 18:14	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 18:14	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 18:14	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 18:14	1
Thallium	**0.00036**	**J**	0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 18:14	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:26	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.47**				SU			08/18/20 13:20	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-7

Date Collected: 08/18/20 15:25
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 08:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 18:18	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 18:18	1
Barium	**0.044**		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 18:18	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 18:18	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 18:18	1
Chromium	**0.0031**		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 18:18	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 18:18	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 18:18	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 18:18	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 18:18	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 18:18	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 18:18	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:27	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.70**				SU			08/18/20 15:25	1

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

Job ID: 180-109846-1

Client Sample ID: EB#2

Date Collected: 08/19/20 09:15
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			08/25/20 10:19	1
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 10:19	1
Sulfate	<0.38		1.0	0.38	mg/L			08/25/20 10:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 18:21	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 18:21	1
Barium	<0.0016		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 18:21	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 18:21	1
Boron	<0.039	^	0.080	0.039	mg/L		08/28/20 15:10	09/17/20 18:21	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 18:21	1
Calcium	<0.13		0.50	0.13	mg/L		08/28/20 15:10	09/17/20 18:21	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 18:21	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 18:21	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 18:21	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 18:21	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 18:21	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 18:21	1
Thallium	**0.00015**	**J**	0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 18:21	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			08/21/20 11:11	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-19

Date Collected: 08/19/20 10:56
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 11:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 18:25	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 18:25	1
Barium	**0.044**		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 18:25	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 18:25	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 18:25	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 18:25	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 18:25	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 18:25	1
Lithium	**0.0038**	**J**	0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 18:25	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 18:25	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 18:25	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 18:25	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:29	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.25**				SU			08/19/20 10:56	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWA-20

Date Collected: 08/19/20 13:44
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 12:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 18:36	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 18:36	1
Barium	**0.085**		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 18:36	1
Beryllium	**0.00022**	**J**	0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 18:36	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 18:36	1
Chromium	**0.0063**		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 18:36	1
Cobalt	**0.00064**	**J**	0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 18:36	1
Lead	**0.00039**	**J**	0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 18:36	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 18:36	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 18:36	1
Selenium	**0.0015**	**J**	0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 18:36	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 18:36	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:30	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.16**				SU			08/19/20 13:44	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-22

Date Collected: 08/19/20 15:32
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.7**		1.0	0.32	mg/L			08/25/20 10:35	1
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 10:35	1
Sulfate	**1000**		10	3.8	mg/L			08/25/20 11:31	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 18:39	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 18:39	1
Barium	**0.046**		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 18:39	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 18:39	1
Boron	**1.3**		0.080	0.039	mg/L		08/28/20 15:10	09/18/20 13:03	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 18:39	1
Calcium	**220**	**B**	0.50	0.13	mg/L		08/28/20 15:10	09/17/20 18:39	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 18:39	1
Cobalt	**0.0032**		0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 18:39	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 18:39	1
Lithium	**0.026**		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 18:39	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 18:39	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 18:39	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 18:39	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1400**		10	10	mg/L			08/21/20 11:11	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.21**				SU			08/19/20 15:32	1

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

Job ID: 180-109846-1

Client Sample ID: FB#2

Date Collected: 08/20/20 10:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			08/24/20 14:46	1
Fluoride	<0.026		0.10	0.026	mg/L			08/24/20 14:46	1
Sulfate	<0.38		1.0	0.38	mg/L			08/24/20 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:16	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:16	1
Barium	<0.0016		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:16	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:16	1
Boron	**0.056**	**J ^**	0.080	0.039	mg/L		09/01/20 16:00	09/10/20 01:16	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:16	1
Calcium	<0.13		0.50	0.13	mg/L		09/01/20 16:00	09/10/20 01:16	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:16	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:16	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:16	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:16	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:16	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:16	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:16	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			08/22/20 08:53	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-23

Date Collected: 08/20/20 12:15
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.9**		1.0	0.32	mg/L			08/24/20 13:43	1
Fluoride	**0.19**		0.10	0.026	mg/L			08/24/20 13:43	1
Sulfate	**69**		1.0	0.38	mg/L			08/24/20 13:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:19	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:19	1
Barium	**0.16**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:19	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:19	1
Boron	**0.44**		0.080	0.039	mg/L		09/01/20 16:00	09/11/20 22:34	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:19	1
Calcium	**69**		0.50	0.13	mg/L		09/01/20 16:00	09/10/20 01:19	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:19	1
Cobalt	**0.0023**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:19	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:19	1
Lithium	**0.036**		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:19	1
Molybdenum	**0.061**		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:19	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:19	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:19	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**310**		10	10	mg/L			08/22/20 08:53	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.33**				SU			08/20/20 12:15	1

Client Sample ID: DUP-2

Date Collected: 08/20/20 00:00
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.9**		1.0	0.32	mg/L			08/24/20 13:59	1
Fluoride	**0.19**		0.10	0.026	mg/L			08/24/20 13:59	1
Sulfate	**70**		1.0	0.38	mg/L			08/24/20 13:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:23	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:23	1
Barium	**0.16**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:23	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:23	1
Boron	**0.40**		0.080	0.039	mg/L		09/01/20 16:00	09/21/20 15:00	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:23	1
Calcium	**68**		0.50	0.13	mg/L		09/01/20 16:00	09/10/20 01:23	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:23	1
Cobalt	**0.0022**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:23	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:23	1
Lithium	**0.035**		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:23	1
Molybdenum	**0.061**		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:23	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:23	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:23	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**310**		10	10	mg/L			08/22/20 08:53	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.33**				SU			08/20/20 00:00	1

Client Sample Results

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

Job ID: 180-109846-1

Client Sample ID: ARAMW-1

Date Collected: 08/20/20 14:36
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.23**		0.10	0.026	mg/L			08/24/20 10:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:26	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:26	1
Barium	**0.055**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:26	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:26	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:26	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:26	1
Cobalt	**0.0010**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:26	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:26	1
Lithium	**0.0066**		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:26	1
Molybdenum	**0.0076**	**J**	0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:26	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:26	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:26	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:58	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.09**				SU			08/20/20 14:36	1

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

Job ID: 180-109846-1

Client Sample ID: ARAMW-2

Date Collected: 08/20/20 16:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/24/20 12:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:30	1
Arsenic	**0.084**		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:30	1
Barium	**0.14**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:30	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:30	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:30	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:30	1
Cobalt	**0.0022**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:30	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:30	1
Lithium	**0.036**		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:30	1
Molybdenum	**0.0013**	**J**	0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:30	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:30	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:30	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:59	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.99**				SU			08/20/20 16:35	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-8

Date Collected: 08/20/20 10:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.054**	**J**	0.10	0.026	mg/L			08/26/20 06:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:33	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:33	1
Barium	**0.053**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:33	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:33	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:33	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:33	1
Cobalt	**0.00023**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:33	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:33	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:33	1
Molybdenum	**0.042**		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:33	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:33	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:33	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 10:00	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.34**				SU			08/20/20 10:35	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-18

Date Collected: 08/20/20 17:05
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/26/20 11:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:37	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:37	1
Barium	**0.041**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:37	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:37	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:37	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:37	1
Cobalt	**0.0015**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:37	1
Lead	**0.00028**	**J**	0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:37	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:37	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:37	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:37	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:37	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:40	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:40	1
Barium	**0.037**		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:40	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:40	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:40	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:40	1
Cobalt	**0.0013**	**J**	0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:40	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:40	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:40	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:40	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:40	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:40	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 10:01	1

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 10:03	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.43**				SU			08/20/20 17:05	1

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

Job ID: 180-109846-1

Client Sample ID: EB#1

Date Collected: 08/20/20 09:30
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/26/20 11:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 01:44	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 01:44	1
Barium	<0.0016		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 01:44	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 01:44	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 01:44	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 01:44	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 01:44	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 01:44	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 01:44	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 01:44	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 01:44	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 01:44	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 10:04	1

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

Job ID: 180-109846-1

Client Sample ID: ARAMW-3

Date Collected: 08/20/20 14:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/26/20 13:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:01	09/10/20 01:55	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:01	09/10/20 01:55	1
Barium	**0.093**		0.010	0.0016	mg/L		09/01/20 16:01	09/10/20 01:55	1
Beryllium	<0.00018	^	0.0025	0.00018	mg/L		09/01/20 16:01	09/10/20 01:55	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:01	09/10/20 01:55	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:01	09/10/20 01:55	1
Cobalt	**0.00056**	**J**	0.0025	0.00013	mg/L		09/01/20 16:01	09/10/20 01:55	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:01	09/10/20 01:55	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:01	09/10/20 01:55	1
Molybdenum	**0.0029**	**J**	0.015	0.00061	mg/L		09/01/20 16:01	09/10/20 01:55	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:01	09/10/20 01:55	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:01	09/10/20 01:55	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 10:05	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.24**				SU			08/20/20 14:45	1

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

Job ID: 180-109846-1

Client Sample ID: ARAMW-4

Date Collected: 08/20/20 11:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/26/20 11:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:04	09/10/20 02:12	1
Arsenic	**0.00034**	**J**	0.0010	0.00031	mg/L		09/01/20 16:04	09/10/20 02:12	1
Barium	**0.053**		0.010	0.0016	mg/L		09/01/20 16:04	09/10/20 02:12	1
Beryllium	<0.00018	^	0.0025	0.00018	mg/L		09/01/20 16:04	09/10/20 02:12	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:04	09/10/20 02:12	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:04	09/10/20 02:12	1
Cobalt	**0.0050**		0.0025	0.00013	mg/L		09/01/20 16:04	09/10/20 02:12	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:04	09/10/20 02:12	1
Lithium	**0.012**		0.0050	0.0034	mg/L		09/01/20 16:04	09/10/20 02:12	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:04	09/10/20 02:12	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:04	09/10/20 02:12	1
Thallium	**0.00022**	**J**	0.0010	0.00015	mg/L		09/01/20 16:04	09/10/20 02:12	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:50	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.77**				SU			08/20/20 11:45	1

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

Job ID: 180-109846-1

Client Sample ID: ARAMW-6

Date Collected: 08/21/20 09:45
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.051**	**J**	0.10	0.026	mg/L			08/28/20 15:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:08	09/04/20 22:07	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:08	09/04/20 22:07	1
Barium	**0.049**		0.010	0.0016	mg/L		09/01/20 16:08	09/04/20 22:07	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:08	09/04/20 22:07	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:08	09/04/20 22:07	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:08	09/04/20 22:07	1
Cobalt	**0.0018**	**J**	0.0025	0.00013	mg/L		09/01/20 16:08	09/04/20 22:07	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:08	09/04/20 22:07	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:08	09/04/20 22:07	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:08	09/04/20 22:07	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:08	09/04/20 22:07	1
Thallium	**0.00018**	**J**	0.0010	0.00015	mg/L		09/01/20 16:08	09/04/20 22:07	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/05/20 06:15	09/07/20 08:48	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.32**				SU			08/21/20 09:45	1

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

Job ID: 180-109846-1

Client Sample ID: ARGWC-21

Date Collected: 08/21/20 10:36
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.084**	**J**	0.10	0.026	mg/L			08/28/20 15:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:08	09/04/20 22:10	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:08	09/04/20 22:10	1
Barium	**0.054**		0.010	0.0016	mg/L		09/01/20 16:08	09/04/20 22:10	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:08	09/04/20 22:10	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:08	09/04/20 22:10	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:08	09/04/20 22:10	1
Cobalt	**0.00066**	**J**	0.0025	0.00013	mg/L		09/01/20 16:08	09/04/20 22:10	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:08	09/04/20 22:10	1
Lithium	**0.013**		0.0050	0.0034	mg/L		09/01/20 16:08	09/04/20 22:10	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:08	09/04/20 22:10	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:08	09/04/20 22:10	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:08	09/04/20 22:10	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/05/20 06:15	09/07/20 08:49	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.89**				SU			08/21/20 10:36	1

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

Lab Sample ID: MB 180-326478/18
Matrix: Water
Analysis Batch: 326478

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/21/20 11:35	1

Lab Sample ID: LCS 180-326478/17
Matrix: Water
Analysis Batch: 326478

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.50	2.73		mg/L		109	90 - 110

Lab Sample ID: 180-109846-2 MS
Matrix: Water
Analysis Batch: 326478

Client Sample ID: ARGWC-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.081	J F1	2.50	2.22	F1	mg/L		85	90 - 110

Lab Sample ID: 180-109846-2 MSD
Matrix: Water
Analysis Batch: 326478

Client Sample ID: ARGWC-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.081	J F1	2.50	2.21	F1	mg/L		85	90 - 110	1	20

Lab Sample ID: MB 180-326777/6
Matrix: Water
Analysis Batch: 326777

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			08/24/20 06:29	1
Fluoride	<0.026		0.10	0.026	mg/L			08/24/20 06:29	1
Sulfate	<0.38		1.0	0.38	mg/L			08/24/20 06:29	1

Lab Sample ID: LCS 180-326777/5
Matrix: Water
Analysis Batch: 326777

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	53.8		mg/L		108	90 - 110
Fluoride	2.50	2.57		mg/L		103	90 - 110
Sulfate	50.0	52.7		mg/L		105	90 - 110

Lab Sample ID: MB 180-326785/6
Matrix: Water
Analysis Batch: 326785

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/24/20 08:17	1

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

Lab Sample ID: LCS 180-326785/5
Matrix: Water
Analysis Batch: 326785

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.50	2.38		mg/L		95	90 - 110

Lab Sample ID: MB 180-326890/6
Matrix: Water
Analysis Batch: 326890

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 05:13	1

Lab Sample ID: LCS 180-326890/5
Matrix: Water
Analysis Batch: 326890

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.50	2.52		mg/L		101	90 - 110

Lab Sample ID: 180-109847-4 MS
Matrix: Water
Analysis Batch: 326890

Client Sample ID: ARGWC-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.026		2.50	2.48		mg/L		99	90 - 110

Lab Sample ID: 180-109847-4 MSD
Matrix: Water
Analysis Batch: 326890

Client Sample ID: ARGWC-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.026		2.50	2.52		mg/L		101	90 - 110	1	20

Lab Sample ID: 180-109848-1 MS
Matrix: Water
Analysis Batch: 326890

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.026		2.50	2.48		mg/L		99	90 - 110

Lab Sample ID: 180-109848-1 MSD
Matrix: Water
Analysis Batch: 326890

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.026		2.50	2.41		mg/L		97	90 - 110	3	20

Lab Sample ID: MB 180-326917/18
Matrix: Water
Analysis Batch: 326917

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/25/20 10:20	1

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

Lab Sample ID: LCS 180-326917/17
Matrix: Water
Analysis Batch: 326917

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			2.50	2.40		mg/L		96	90 - 110		

Lab Sample ID: 180-109847-2 MS
Matrix: Water
Analysis Batch: 326917

Client Sample ID: ARGWA-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	0.041	J	2.50	2.52		mg/L		99	90 - 110		

Lab Sample ID: 180-109847-2 MSD
Matrix: Water
Analysis Batch: 326917

Client Sample ID: ARGWA-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.041	J	2.50	2.52		mg/L		99	90 - 110	0	20

Lab Sample ID: MB 180-327077/6
Matrix: Water
Analysis Batch: 327077

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/26/20 05:39	1

Lab Sample ID: LCS 180-327077/5
Matrix: Water
Analysis Batch: 327077

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			2.50	2.55		mg/L		102	90 - 110		

Lab Sample ID: 180-109929-1 MS
Matrix: Water
Analysis Batch: 327077

Client Sample ID: ARGWC-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	0.054	J	2.50	2.62		mg/L		102	90 - 110		

Lab Sample ID: 180-109929-1 MSD
Matrix: Water
Analysis Batch: 327077

Client Sample ID: ARGWC-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.054	J	2.50	2.48		mg/L		97	90 - 110	5	20

Lab Sample ID: 180-109930-2 MS
Matrix: Water
Analysis Batch: 327077

Client Sample ID: ARAMW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	<0.026		2.50	2.42		mg/L		97	90 - 110		

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

Lab Sample ID: 180-109930-2 MSD
Matrix: Water
Analysis Batch: 327077

Client Sample ID: ARAMW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.026		2.50	2.47		mg/L		99	90 - 110	2	20

Lab Sample ID: MB 180-327578/6
Matrix: Water
Analysis Batch: 327578

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.10	0.026	mg/L			08/28/20 13:11	1

Lab Sample ID: LCS 180-327578/5
Matrix: Water
Analysis Batch: 327578

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.50	2.43		mg/L		97	90 - 110

Lab Sample ID: 180-109970-2 MS
Matrix: Water
Analysis Batch: 327578

Client Sample ID: ARGWC-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.084	J	2.50	2.55		mg/L		99	90 - 110

Lab Sample ID: 180-109970-2 MSD
Matrix: Water
Analysis Batch: 327578

Client Sample ID: ARGWC-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.084	J	2.50	2.75		mg/L		107	90 - 110	7	20

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

Lab Sample ID: MB 180-327640/1-A
Matrix: Water
Analysis Batch: 330300

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 327640

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:02	09/17/20 20:39	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:02	09/17/20 20:39	1
Barium	<0.0016		0.010	0.0016	mg/L		08/28/20 15:02	09/17/20 20:39	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:02	09/17/20 20:39	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:02	09/17/20 20:39	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:02	09/17/20 20:39	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:02	09/17/20 20:39	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:02	09/17/20 20:39	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:02	09/17/20 20:39	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:02	09/17/20 20:39	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:02	09/17/20 20:39	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:02	09/17/20 20:39	1

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

Lab Sample ID: LCS 180-327640/2-A
Matrix: Water
Analysis Batch: 330300

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 327640

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony			0.250	0.262		mg/L		105	80 - 120		
Arsenic			1.00	1.05		mg/L		105	80 - 120		
Barium			1.00	1.05		mg/L		105	80 - 120		
Beryllium			0.500	0.525		mg/L		105	80 - 120		
Cadmium			0.500	0.525		mg/L		105	80 - 120		
Chromium			0.500	0.521		mg/L		104	80 - 120		
Cobalt			0.500	0.520		mg/L		104	80 - 120		
Lead			0.500	0.526		mg/L		105	80 - 120		
Lithium			0.500	0.497		mg/L		99	80 - 120		
Molybdenum			0.500	0.540		mg/L		108	80 - 120		
Selenium			1.00	1.01		mg/L		101	80 - 120		
Thallium			1.00	1.13		mg/L		113	80 - 120		

Lab Sample ID: 180-109846-2 MS
Matrix: Water
Analysis Batch: 330300

Client Sample ID: ARGWC-15
Prep Type: Total Recoverable
Prep Batch: 327640

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony	<0.00038		0.250	0.262		mg/L		105	75 - 125		
Arsenic	<0.00031		1.00	1.06		mg/L		106	75 - 125		
Barium	0.028		1.00	1.08		mg/L		106	75 - 125		
Beryllium	<0.00018		0.500	0.523		mg/L		105	75 - 125		
Cadmium	<0.00022		0.500	0.522		mg/L		104	75 - 125		
Chromium	<0.0015		0.500	0.523		mg/L		105	75 - 125		
Cobalt	0.00040	J	0.500	0.516		mg/L		103	75 - 125		
Lead	<0.00013		0.500	0.529		mg/L		106	75 - 125		
Lithium	<0.0034		0.500	0.513		mg/L		103	75 - 125		
Molybdenum	0.0016	J	0.500	0.544		mg/L		109	75 - 125		
Selenium	<0.0015		1.00	1.01		mg/L		101	75 - 125		
Thallium	<0.00015		1.00	1.14		mg/L		114	75 - 125		

Lab Sample ID: 180-109846-2 MSD
Matrix: Water
Analysis Batch: 330300

Client Sample ID: ARGWC-15
Prep Type: Total Recoverable
Prep Batch: 327640

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.00038		0.250	0.268		mg/L		107	75 - 125	3	20
Arsenic	<0.00031		1.00	1.06		mg/L		106	75 - 125	1	20
Barium	0.028		1.00	1.09		mg/L		106	75 - 125	1	20
Beryllium	<0.00018		0.500	0.510		mg/L		102	75 - 125	3	20
Cadmium	<0.00022		0.500	0.530		mg/L		106	75 - 125	2	20
Chromium	<0.0015		0.500	0.518		mg/L		104	75 - 125	1	20
Cobalt	0.00040	J	0.500	0.522		mg/L		104	75 - 125	1	20
Lead	<0.00013		0.500	0.530		mg/L		106	75 - 125	0	20
Lithium	<0.0034		0.500	0.496		mg/L		99	75 - 125	3	20
Molybdenum	0.0016	J	0.500	0.547		mg/L		109	75 - 125	0	20
Selenium	<0.0015		1.00	1.01		mg/L		101	75 - 125	0	20
Thallium	<0.00015		1.00	1.14		mg/L		114	75 - 125	1	20

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

Lab Sample ID: MB 180-327642/1-A
Matrix: Water
Analysis Batch: 330300

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 327642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		08/28/20 15:10	09/17/20 17:35	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		08/28/20 15:10	09/17/20 17:35	1
Barium	<0.0016		0.010	0.0016	mg/L		08/28/20 15:10	09/17/20 17:35	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		08/28/20 15:10	09/17/20 17:35	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		08/28/20 15:10	09/17/20 17:35	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/28/20 15:10	09/17/20 17:35	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		08/28/20 15:10	09/17/20 17:35	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/28/20 15:10	09/17/20 17:35	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/28/20 15:10	09/17/20 17:35	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		08/28/20 15:10	09/17/20 17:35	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/28/20 15:10	09/17/20 17:35	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/28/20 15:10	09/17/20 17:35	1

Lab Sample ID: MB 180-327642/1-A
Matrix: Water
Analysis Batch: 330464

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 327642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		08/28/20 15:10	09/18/20 12:56	1

Lab Sample ID: LCS 180-327642/2-A
Matrix: Water
Analysis Batch: 330300

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 327642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.259		mg/L		103	80 - 120
Arsenic	1.00	1.07		mg/L		107	80 - 120
Barium	1.00	1.04		mg/L		104	80 - 120
Beryllium	0.500	0.523		mg/L		105	80 - 120
Cadmium	0.500	0.522		mg/L		104	80 - 120
Chromium	0.500	0.522		mg/L		104	80 - 120
Cobalt	0.500	0.520		mg/L		104	80 - 120
Lead	0.500	0.527		mg/L		105	80 - 120
Lithium	0.500	0.499		mg/L		100	80 - 120
Molybdenum	0.500	0.545		mg/L		109	80 - 120
Selenium	1.00	1.01		mg/L		101	80 - 120
Thallium	1.00	1.13		mg/L		113	80 - 120

Lab Sample ID: LCS 180-327642/2-A
Matrix: Water
Analysis Batch: 330464

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 327642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.19		mg/L		95	80 - 120

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

Lab Sample ID: 180-109850-1 MS
Matrix: Water
Analysis Batch: 330300

Client Sample ID: ARGWA-5
Prep Type: Total Recoverable
Prep Batch: 327642

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	<0.00038		0.250	0.260		mg/L		104	75 - 125
Arsenic	<0.00031		1.00	1.08		mg/L		108	75 - 125
Barium	0.031		1.00	1.08		mg/L		105	75 - 125
Beryllium	<0.00018		0.500	0.516		mg/L		103	75 - 125
Cadmium	<0.00022		0.500	0.526		mg/L		105	75 - 125
Chromium	<0.0015		0.500	0.533		mg/L		107	75 - 125
Cobalt	<0.00013		0.500	0.531		mg/L		106	75 - 125
Lead	0.00013	J	0.500	0.535		mg/L		107	75 - 125
Lithium	<0.0034		0.500	0.501		mg/L		100	75 - 125
Molybdenum	<0.00061		0.500	0.558		mg/L		112	75 - 125
Selenium	<0.0015		1.00	1.01		mg/L		101	75 - 125
Thallium	0.00021	J	1.00	1.16		mg/L		116	75 - 125

Lab Sample ID: 180-109850-1 MSD
Matrix: Water
Analysis Batch: 330300

Client Sample ID: ARGWA-5
Prep Type: Total Recoverable
Prep Batch: 327642

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.00038		0.250	0.262		mg/L		105	75 - 125	1	20
Arsenic	<0.00031		1.00	1.06		mg/L		106	75 - 125	2	20
Barium	0.031		1.00	1.08		mg/L		105	75 - 125	0	20
Beryllium	<0.00018		0.500	0.511		mg/L		102	75 - 125	1	20
Cadmium	<0.00022		0.500	0.522		mg/L		104	75 - 125	1	20
Chromium	<0.0015		0.500	0.524		mg/L		105	75 - 125	2	20
Cobalt	<0.00013		0.500	0.524		mg/L		105	75 - 125	1	20
Lead	0.00013	J	0.500	0.527		mg/L		105	75 - 125	2	20
Lithium	<0.0034		0.500	0.495		mg/L		99	75 - 125	1	20
Molybdenum	<0.00061		0.500	0.544		mg/L		109	75 - 125	3	20
Selenium	<0.0015		1.00	1.00		mg/L		100	75 - 125	1	20
Thallium	0.00021	J	1.00	1.11		mg/L		111	75 - 125	4	20

Lab Sample ID: MB 180-328062/1-A
Matrix: Water
Analysis Batch: 329135

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 00:30	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 00:30	1
Barium	<0.0016		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 00:30	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 00:30	1
Boron	<0.039	^	0.080	0.039	mg/L		09/01/20 16:00	09/10/20 00:30	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 00:30	1
Calcium	<0.13		0.50	0.13	mg/L		09/01/20 16:00	09/10/20 00:30	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 00:30	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 00:30	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 00:30	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 00:30	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 00:30	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 00:30	1

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

Lab Sample ID: MB 180-328062/1-A
Matrix: Water
Analysis Batch: 329135

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 00:30	1

Lab Sample ID: MB 180-328062/1-A
Matrix: Water
Analysis Batch: 329474

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		09/01/20 16:00	09/11/20 22:27	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/11/20 22:27	1

Lab Sample ID: PB 180-326831/1-E
Matrix: Water
Analysis Batch: 329135

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	PB Result	PB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:00	09/10/20 00:37	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:00	09/10/20 00:37	1
Barium	<0.0016		0.010	0.0016	mg/L		09/01/20 16:00	09/10/20 00:37	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:00	09/10/20 00:37	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:00	09/10/20 00:37	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:00	09/10/20 00:37	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		09/01/20 16:00	09/10/20 00:37	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:00	09/10/20 00:37	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:00	09/10/20 00:37	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:00	09/10/20 00:37	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:00	09/10/20 00:37	1
Thallium	0.000185	J	0.0010	0.00015	mg/L		09/01/20 16:00	09/10/20 00:37	1

Lab Sample ID: LCS 180-328062/2-A
Matrix: Water
Analysis Batch: 329135

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.249		mg/L		100	80 - 120
Arsenic	1.00	0.945		mg/L		95	80 - 120
Barium	1.00	1.04		mg/L		104	80 - 120
Beryllium	0.500	0.525		mg/L		105	80 - 120
Cadmium	0.500	0.483		mg/L		97	80 - 120
Chromium	0.500	0.478		mg/L		96	80 - 120
Cobalt	0.500	0.477		mg/L		95	80 - 120
Lead	0.500	0.486		mg/L		97	80 - 120
Lithium	0.500	0.484		mg/L		97	80 - 120
Molybdenum	0.500	0.498		mg/L		100	80 - 120
Selenium	1.00	0.986		mg/L		99	80 - 120
Thallium	1.00	0.987		mg/L		99	80 - 120

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

Lab Sample ID: LCS 180-328062/2-A
Matrix: Water
Analysis Batch: 329571

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Boron			1.25	1.32		mg/L		105	80 - 120		

Lab Sample ID: 180-109930-2 MS
Matrix: Water
Analysis Batch: 329135

Client Sample ID: ARAMW-3
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony	<0.00038		0.250	0.255		mg/L		102	75 - 125		
Arsenic	<0.00031		1.00	0.981		mg/L		98	75 - 125		
Barium	0.093		1.00	1.16		mg/L		106	75 - 125		
Beryllium	<0.00018	^	0.500	0.548	^	mg/L		110	75 - 125		
Cadmium	<0.00022		0.500	0.492		mg/L		98	75 - 125		
Chromium	<0.0015		0.500	0.489		mg/L		98	75 - 125		
Cobalt	0.00056	J	0.500	0.486		mg/L		97	75 - 125		
Lead	<0.00013		0.500	0.495		mg/L		99	75 - 125		
Lithium	<0.0034		0.500	0.505		mg/L		101	75 - 125		
Molybdenum	0.0029	J	0.500	0.513		mg/L		102	75 - 125		
Selenium	<0.0015		1.00	0.983		mg/L		98	75 - 125		
Thallium	<0.00015		1.00	1.00		mg/L		100	75 - 125		

Lab Sample ID: 180-109930-2 MSD
Matrix: Water
Analysis Batch: 329135

Client Sample ID: ARAMW-3
Prep Type: Total Recoverable
Prep Batch: 328062

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.00038		0.250	0.251		mg/L		101	75 - 125	2	20
Arsenic	<0.00031		1.00	0.983		mg/L		98	75 - 125	0	20
Barium	0.093		1.00	1.14		mg/L		105	75 - 125	1	20
Beryllium	<0.00018	^	0.500	0.543	^	mg/L		109	75 - 125	1	20
Cadmium	<0.00022		0.500	0.486		mg/L		97	75 - 125	1	20
Chromium	<0.0015		0.500	0.485		mg/L		97	75 - 125	1	20
Cobalt	0.00056	J	0.500	0.483		mg/L		97	75 - 125	1	20
Lead	<0.00013		0.500	0.491		mg/L		98	75 - 125	1	20
Lithium	<0.0034		0.500	0.496		mg/L		99	75 - 125	2	20
Molybdenum	0.0029	J	0.500	0.505		mg/L		100	75 - 125	2	20
Selenium	<0.0015		1.00	0.985		mg/L		98	75 - 125	0	20
Thallium	<0.00015		1.00	0.998		mg/L		100	75 - 125	0	20

Lab Sample ID: MB 180-328065/1-A
Matrix: Water
Analysis Batch: 328773

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 328065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		09/01/20 16:08	09/04/20 21:35	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		09/01/20 16:08	09/04/20 21:35	1
Barium	<0.0016		0.010	0.0016	mg/L		09/01/20 16:08	09/04/20 21:35	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		09/01/20 16:08	09/04/20 21:35	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		09/01/20 16:08	09/04/20 21:35	1
Chromium	<0.0015		0.0020	0.0015	mg/L		09/01/20 16:08	09/04/20 21:35	1

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

Lab Sample ID: MB 180-328065/1-A
Matrix: Water
Analysis Batch: 328773

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 328065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.00013		0.0025	0.00013	mg/L		09/01/20 16:08	09/04/20 21:35	1
Lead	<0.00013		0.0010	0.00013	mg/L		09/01/20 16:08	09/04/20 21:35	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/01/20 16:08	09/04/20 21:35	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		09/01/20 16:08	09/04/20 21:35	1
Selenium	<0.0015		0.0050	0.0015	mg/L		09/01/20 16:08	09/04/20 21:35	1
Thallium	<0.00015		0.0010	0.00015	mg/L		09/01/20 16:08	09/04/20 21:35	1

Lab Sample ID: LCS 180-328065/2-A
Matrix: Water
Analysis Batch: 328773

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 328065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.261		mg/L		105	80 - 120
Arsenic	1.00	1.04		mg/L		104	80 - 120
Barium	1.00	1.08		mg/L		108	80 - 120
Beryllium	0.500	0.479		mg/L		96	80 - 120
Cadmium	0.500	0.514		mg/L		103	80 - 120
Chromium	0.500	0.498		mg/L		100	80 - 120
Cobalt	0.500	0.510		mg/L		102	80 - 120
Lead	0.500	0.510		mg/L		102	80 - 120
Lithium	0.500	0.483		mg/L		97	80 - 120
Molybdenum	0.500	0.522		mg/L		104	80 - 120
Selenium	1.00	0.995		mg/L		100	80 - 120
Thallium	1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: LCS 180-326831/2-E
Matrix: Water
Analysis Batch: 329135

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 328062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.255		mg/L		102	80 - 120
Arsenic	1.00	0.960		mg/L		96	80 - 120
Barium	1.00	1.05		mg/L		105	80 - 120
Beryllium	0.500	0.518		mg/L		104	80 - 120
Boron	1.25	1.08	^	mg/L		87	80 - 120
Cadmium	0.500	0.482		mg/L		96	80 - 120
Calcium	25.0	26.6		mg/L		107	80 - 120
Chromium	0.500	0.492		mg/L		98	80 - 120
Cobalt	0.500	0.477		mg/L		95	80 - 120
Lead	0.500	0.491		mg/L		98	80 - 120
Lithium	0.500	0.480		mg/L		96	80 - 120
Molybdenum	0.500	0.494		mg/L		99	80 - 120
Selenium	1.00	0.977		mg/L		98	80 - 120
Thallium	1.00	0.980		mg/L		98	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-328121/1-A
Matrix: Water
Analysis Batch: 328261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328121

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013	^	0.00020	0.00013	mg/L		09/02/20 05:45	09/02/20 15:07	1

Lab Sample ID: LCS 180-328121/2-A
Matrix: Water
Analysis Batch: 328261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00297	^	mg/L		119	80 - 120

Lab Sample ID: 180-109846-1 MS
Matrix: Water
Analysis Batch: 328261

Client Sample ID: ARGWA-14
Prep Type: Total/NA
Prep Batch: 328121

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00013	^	0.00100	0.00118	^	mg/L		118	75 - 125

Lab Sample ID: 180-109846-1 MSD
Matrix: Water
Analysis Batch: 328261

Client Sample ID: ARGWA-14
Prep Type: Total/NA
Prep Batch: 328121

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00013	^	0.00100	0.00120	^	mg/L		120	75 - 125	2	20

Lab Sample ID: MB 180-328515/1-A
Matrix: Water
Analysis Batch: 328649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:24	1

Lab Sample ID: LCS 180-328515/2-A
Matrix: Water
Analysis Batch: 328649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328515

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00253		mg/L		101	80 - 120

Lab Sample ID: MB 180-328516/1-A
Matrix: Water
Analysis Batch: 328649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328516

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 09:51	1

Lab Sample ID: LCS 180-328516/2-A
Matrix: Water
Analysis Batch: 328649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328516

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00255		mg/L		102	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-328636/1-A
Matrix: Water
Analysis Batch: 328684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328636

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/05/20 06:15	09/07/20 08:30	1

Lab Sample ID: LCS 180-328636/2-A
Matrix: Water
Analysis Batch: 328684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328636

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00263		mg/L		105	80 - 120

Lab Sample ID: PB 180-326831/1-F
Matrix: Water
Analysis Batch: 328649

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 328516

Analyte	PB Result	PB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		09/04/20 08:35	09/05/20 10:02	1

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

Lab Sample ID: MB 180-326608/2
Matrix: Water
Analysis Batch: 326608

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		10	10	mg/L			08/21/20 11:11	1

Lab Sample ID: LCS 180-326608/1
Matrix: Water
Analysis Batch: 326608

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	567	602		mg/L		106	80 - 120

Lab Sample ID: MB 180-326682/2
Matrix: Water
Analysis Batch: 326682

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		10	10	mg/L			08/22/20 08:11	1

Lab Sample ID: LCS 180-326682/1
Matrix: Water
Analysis Batch: 326682

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	567	562		mg/L		99	80 - 120

HPLC/IC

Analysis Batch: 326478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-2	ARGWC-15	Total/NA	Water	EPA 300.0 R2.1	
MB 180-326478/18	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-326478/17	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-109846-2 MS	ARGWC-15	Total/NA	Water	EPA 300.0 R2.1	
180-109846-2 MSD	ARGWC-15	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 326777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total/NA	Water	EPA 300.0 R2.1	
180-109918-2	ARGWC-23	Total/NA	Water	EPA 300.0 R2.1	
180-109918-3	DUP-2	Total/NA	Water	EPA 300.0 R2.1	
180-109918-5	ARAMW-2	Total/NA	Water	EPA 300.0 R2.1	
MB 180-326777/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-326777/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 326785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total/NA	Water	EPA 300.0 R2.1	
180-109846-3	ARGWC-16	Total/NA	Water	EPA 300.0 R2.1	
180-109918-4	ARAMW-1	Total/NA	Water	EPA 300.0 R2.1	
MB 180-326785/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-326785/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 326890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109847-3	ARGWA-13	Total/NA	Water	EPA 300.0 R2.1	
180-109847-4	ARGWC-17	Total/NA	Water	EPA 300.0 R2.1	
180-109848-1	ARGWC-10	Total/NA	Water	EPA 300.0 R2.1	
180-109848-2	DUP-1	Total/NA	Water	EPA 300.0 R2.1	
180-109848-3	ARGWC-9	Total/NA	Water	EPA 300.0 R2.1	
180-109850-1	ARGWA-5	Total/NA	Water	EPA 300.0 R2.1	
180-109850-2	ARGWA-3	Total/NA	Water	EPA 300.0 R2.1	
180-109850-3	ARGWC-7	Total/NA	Water	EPA 300.0 R2.1	
180-109851-1	EB#2	Total/NA	Water	EPA 300.0 R2.1	
180-109851-2	ARGWA-19	Total/NA	Water	EPA 300.0 R2.1	
180-109851-3	ARGWA-20	Total/NA	Water	EPA 300.0 R2.1	
180-109851-4	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-109851-4	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
MB 180-326890/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-326890/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-109847-4 MS	ARGWC-17	Total/NA	Water	EPA 300.0 R2.1	
180-109847-4 MSD	ARGWC-17	Total/NA	Water	EPA 300.0 R2.1	
180-109848-1 MS	ARGWC-10	Total/NA	Water	EPA 300.0 R2.1	
180-109848-1 MSD	ARGWC-10	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 326917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109847-1	FB#1	Total/NA	Water	EPA 300.0 R2.1	
180-109847-2	ARGWA-12	Total/NA	Water	EPA 300.0 R2.1	
MB 180-326917/18	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-326917/17	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC (Continued)

Analysis Batch: 326917 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109847-2 MS	ARGWA-12	Total/NA	Water	EPA 300.0 R2.1	
180-109847-2 MSD	ARGWA-12	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 327077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109929-1	ARGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-109929-2	ARGWC-18	Total/NA	Water	EPA 300.0 R2.1	
180-109930-1	EB#1	Total/NA	Water	EPA 300.0 R2.1	
180-109930-2	ARAMW-3	Total/NA	Water	EPA 300.0 R2.1	
180-109930-3	ARAMW-4	Total/NA	Water	EPA 300.0 R2.1	
MB 180-327077/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-327077/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-109929-1 MS	ARGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-109929-1 MSD	ARGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-109930-2 MS	ARAMW-3	Total/NA	Water	EPA 300.0 R2.1	
180-109930-2 MSD	ARAMW-3	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 327578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109970-1	ARAMW-6	Total/NA	Water	EPA 300.0 R2.1	
180-109970-2	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
MB 180-327578/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-327578/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-109970-2 MS	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
180-109970-2 MSD	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	

Metals

Filtration Batch: 326831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109929-2	ARGWC-18	Dissolved	Water	Filtration	
PB 180-326831/1-E	Method Blank	Total Recoverable	Water	Filtration	
PB 180-326831/1-F	Method Blank	Dissolved	Water	Filtration	
LCS 180-326831/2-E	Lab Control Sample	Dissolved	Water	Filtration	

Prep Batch: 327640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total Recoverable	Water	3005A	
180-109846-2	ARGWC-15	Total Recoverable	Water	3005A	
180-109846-3	ARGWC-16	Total Recoverable	Water	3005A	
180-109847-1	FB#1	Total Recoverable	Water	3005A	
180-109847-2	ARGWA-12	Total Recoverable	Water	3005A	
180-109847-3	ARGWA-13	Total Recoverable	Water	3005A	
180-109847-4	ARGWC-17	Total Recoverable	Water	3005A	
180-109848-1	ARGWC-10	Total Recoverable	Water	3005A	
180-109848-2	DUP-1	Total Recoverable	Water	3005A	
180-109848-3	ARGWC-9	Total Recoverable	Water	3005A	
MB 180-327640/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-327640/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-109846-2 MS	ARGWC-15	Total Recoverable	Water	3005A	
180-109846-2 MSD	ARGWC-15	Total Recoverable	Water	3005A	

Metals

Prep Batch: 327642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109850-1	ARGWA-5	Total Recoverable	Water	3005A	
180-109850-2	ARGWA-3	Total Recoverable	Water	3005A	
180-109850-3	ARGWC-7	Total Recoverable	Water	3005A	
180-109851-1	EB#2	Total Recoverable	Water	3005A	
180-109851-2	ARGWA-19	Total Recoverable	Water	3005A	
180-109851-3	ARGWA-20	Total Recoverable	Water	3005A	
180-109851-4	ARGWC-22	Total Recoverable	Water	3005A	
MB 180-327642/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-327642/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-109850-1 MS	ARGWA-5	Total Recoverable	Water	3005A	
180-109850-1 MSD	ARGWA-5	Total Recoverable	Water	3005A	

Prep Batch: 328062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total Recoverable	Water	3005A	
180-109918-2	ARGWC-23	Total Recoverable	Water	3005A	
180-109918-3	DUP-2	Total Recoverable	Water	3005A	
180-109918-4	ARAMW-1	Total Recoverable	Water	3005A	
180-109918-5	ARAMW-2	Total Recoverable	Water	3005A	
180-109929-1	ARGWC-8	Total Recoverable	Water	3005A	
180-109929-2	ARGWC-18	Dissolved	Water	3005A	326831
180-109929-2	ARGWC-18	Total Recoverable	Water	3005A	
180-109930-1	EB#1	Total Recoverable	Water	3005A	
180-109930-2	ARAMW-3	Total Recoverable	Water	3005A	
180-109930-3	ARAMW-4	Total Recoverable	Water	3005A	
MB 180-328062/1-A	Method Blank	Total Recoverable	Water	3005A	
PB 180-326831/1-E	Method Blank	Total Recoverable	Water	3005A	326831
LCS 180-326831/2-E	Lab Control Sample	Dissolved	Water	3005A	326831
LCS 180-328062/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-109930-2 MS	ARAMW-3	Total Recoverable	Water	3005A	
180-109930-2 MSD	ARAMW-3	Total Recoverable	Water	3005A	

Prep Batch: 328065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109970-1	ARAMW-6	Total Recoverable	Water	3005A	
180-109970-2	ARGWC-21	Total Recoverable	Water	3005A	
MB 180-328065/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-328065/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 328121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total/NA	Water	7470A	
180-109846-2	ARGWC-15	Total/NA	Water	7470A	
180-109846-3	ARGWC-16	Total/NA	Water	7470A	
180-109847-1	FB#1	Total/NA	Water	7470A	
180-109847-2	ARGWA-12	Total/NA	Water	7470A	
180-109847-3	ARGWA-13	Total/NA	Water	7470A	
180-109847-4	ARGWC-17	Total/NA	Water	7470A	
180-109848-1	ARGWC-10	Total/NA	Water	7470A	
180-109848-2	DUP-1	Total/NA	Water	7470A	
180-109848-3	ARGWC-9	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 328121 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109850-1	ARGWA-5	Total/NA	Water	7470A	
180-109850-2	ARGWA-3	Total/NA	Water	7470A	
180-109850-3	ARGWC-7	Total/NA	Water	7470A	
180-109851-1	EB#2	Total/NA	Water	7470A	
180-109851-2	ARGWA-19	Total/NA	Water	7470A	
180-109851-3	ARGWA-20	Total/NA	Water	7470A	
180-109851-4	ARGWC-22	Total/NA	Water	7470A	
MB 180-328121/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-328121/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-109846-1 MS	ARGWA-14	Total/NA	Water	7470A	
180-109846-1 MSD	ARGWA-14	Total/NA	Water	7470A	

Analysis Batch: 328261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total/NA	Water	EPA 7470A	328121
180-109846-2	ARGWC-15	Total/NA	Water	EPA 7470A	328121
180-109846-3	ARGWC-16	Total/NA	Water	EPA 7470A	328121
180-109847-1	FB#1	Total/NA	Water	EPA 7470A	328121
180-109847-2	ARGWA-12	Total/NA	Water	EPA 7470A	328121
180-109847-3	ARGWA-13	Total/NA	Water	EPA 7470A	328121
180-109847-4	ARGWC-17	Total/NA	Water	EPA 7470A	328121
180-109848-1	ARGWC-10	Total/NA	Water	EPA 7470A	328121
180-109848-2	DUP-1	Total/NA	Water	EPA 7470A	328121
180-109848-3	ARGWC-9	Total/NA	Water	EPA 7470A	328121
180-109850-1	ARGWA-5	Total/NA	Water	EPA 7470A	328121
180-109850-2	ARGWA-3	Total/NA	Water	EPA 7470A	328121
180-109850-3	ARGWC-7	Total/NA	Water	EPA 7470A	328121
180-109851-1	EB#2	Total/NA	Water	EPA 7470A	328121
180-109851-2	ARGWA-19	Total/NA	Water	EPA 7470A	328121
180-109851-3	ARGWA-20	Total/NA	Water	EPA 7470A	328121
180-109851-4	ARGWC-22	Total/NA	Water	EPA 7470A	328121
MB 180-328121/1-A	Method Blank	Total/NA	Water	EPA 7470A	328121
LCS 180-328121/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	328121
180-109846-1 MS	ARGWA-14	Total/NA	Water	EPA 7470A	328121
180-109846-1 MSD	ARGWA-14	Total/NA	Water	EPA 7470A	328121

Prep Batch: 328515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109930-3	ARAMW-4	Total/NA	Water	7470A	
MB 180-328515/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-328515/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 328516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total/NA	Water	7470A	
180-109918-2	ARGWC-23	Total/NA	Water	7470A	
180-109918-3	DUP-2	Total/NA	Water	7470A	
180-109918-4	ARAMW-1	Total/NA	Water	7470A	
180-109918-5	ARAMW-2	Total/NA	Water	7470A	
180-109929-1	ARGWC-8	Total/NA	Water	7470A	
180-109929-2	ARGWC-18	Dissolved	Water	7470A	326831

Metals (Continued)

Prep Batch: 328516 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109929-2	ARGWC-18	Total/NA	Water	7470A	
180-109930-1	EB#1	Total/NA	Water	7470A	
180-109930-2	ARAMW-3	Total/NA	Water	7470A	
MB 180-328516/1-A	Method Blank	Total/NA	Water	7470A	
PB 180-326831/1-F	Method Blank	Dissolved	Water	7470A	326831
LCS 180-328516/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 328636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109970-1	ARAMW-6	Total/NA	Water	7470A	
180-109970-2	ARGWC-21	Total/NA	Water	7470A	
MB 180-328636/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-328636/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 328649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total/NA	Water	EPA 7470A	328516
180-109918-2	ARGWC-23	Total/NA	Water	EPA 7470A	328516
180-109918-3	DUP-2	Total/NA	Water	EPA 7470A	328516
180-109918-4	ARAMW-1	Total/NA	Water	EPA 7470A	328516
180-109918-5	ARAMW-2	Total/NA	Water	EPA 7470A	328516
180-109929-1	ARGWC-8	Total/NA	Water	EPA 7470A	328516
180-109929-2	ARGWC-18	Dissolved	Water	EPA 7470A	328516
180-109929-2	ARGWC-18	Total/NA	Water	EPA 7470A	328516
180-109930-1	EB#1	Total/NA	Water	EPA 7470A	328516
180-109930-2	ARAMW-3	Total/NA	Water	EPA 7470A	328516
180-109930-3	ARAMW-4	Total/NA	Water	EPA 7470A	328515
MB 180-328515/1-A	Method Blank	Total/NA	Water	EPA 7470A	328515
MB 180-328516/1-A	Method Blank	Total/NA	Water	EPA 7470A	328516
PB 180-326831/1-F	Method Blank	Dissolved	Water	EPA 7470A	328516
LCS 180-328515/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	328515
LCS 180-328516/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	328516

Analysis Batch: 328684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109970-1	ARAMW-6	Total/NA	Water	EPA 7470A	328636
180-109970-2	ARGWC-21	Total/NA	Water	EPA 7470A	328636
MB 180-328636/1-A	Method Blank	Total/NA	Water	EPA 7470A	328636
LCS 180-328636/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	328636

Analysis Batch: 328773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109970-1	ARAMW-6	Total Recoverable	Water	EPA 6020B	328065
180-109970-2	ARGWC-21	Total Recoverable	Water	EPA 6020B	328065
MB 180-328065/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	328065
LCS 180-328065/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	328065

Analysis Batch: 329135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total Recoverable	Water	EPA 6020B	328062
180-109918-2	ARGWC-23	Total Recoverable	Water	EPA 6020B	328062

Metals (Continued)

Analysis Batch: 329135 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-3	DUP-2	Total Recoverable	Water	EPA 6020B	328062
180-109918-4	ARAMW-1	Total Recoverable	Water	EPA 6020B	328062
180-109918-5	ARAMW-2	Total Recoverable	Water	EPA 6020B	328062
180-109929-1	ARGWC-8	Total Recoverable	Water	EPA 6020B	328062
180-109929-2	ARGWC-18	Dissolved	Water	EPA 6020B	328062
180-109929-2	ARGWC-18	Total Recoverable	Water	EPA 6020B	328062
180-109930-1	EB#1	Total Recoverable	Water	EPA 6020B	328062
180-109930-2	ARAMW-3	Total Recoverable	Water	EPA 6020B	328062
180-109930-3	ARAMW-4	Total Recoverable	Water	EPA 6020B	328062
MB 180-328062/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	328062
PB 180-326831/1-E	Method Blank	Total Recoverable	Water	EPA 6020B	328062
LCS 180-326831/2-E	Lab Control Sample	Dissolved	Water	EPA 6020B	328062
LCS 180-328062/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	328062
180-109930-2 MS	ARAMW-3	Total Recoverable	Water	EPA 6020B	328062
180-109930-2 MSD	ARAMW-3	Total Recoverable	Water	EPA 6020B	328062

Analysis Batch: 329474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-2	ARGWC-23	Total Recoverable	Water	EPA 6020B	328062
MB 180-328062/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	328062

Analysis Batch: 329571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-328062/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	328062

Analysis Batch: 330300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total Recoverable	Water	EPA 6020B	327640
180-109846-2	ARGWC-15	Total Recoverable	Water	EPA 6020B	327640
180-109846-3	ARGWC-16	Total Recoverable	Water	EPA 6020B	327640
180-109847-1	FB#1	Total Recoverable	Water	EPA 6020B	327640
180-109847-2	ARGWA-12	Total Recoverable	Water	EPA 6020B	327640
180-109847-3	ARGWA-13	Total Recoverable	Water	EPA 6020B	327640
180-109847-4	ARGWC-17	Total Recoverable	Water	EPA 6020B	327640
180-109848-1	ARGWC-10	Total Recoverable	Water	EPA 6020B	327640
180-109848-2	DUP-1	Total Recoverable	Water	EPA 6020B	327640
180-109848-3	ARGWC-9	Total Recoverable	Water	EPA 6020B	327640
180-109850-1	ARGWA-5	Total Recoverable	Water	EPA 6020B	327642
180-109850-2	ARGWA-3	Total Recoverable	Water	EPA 6020B	327642
180-109850-3	ARGWC-7	Total Recoverable	Water	EPA 6020B	327642
180-109851-1	EB#2	Total Recoverable	Water	EPA 6020B	327642
180-109851-2	ARGWA-19	Total Recoverable	Water	EPA 6020B	327642
180-109851-3	ARGWA-20	Total Recoverable	Water	EPA 6020B	327642
180-109851-4	ARGWC-22	Total Recoverable	Water	EPA 6020B	327642
MB 180-327640/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	327640
MB 180-327642/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	327642
LCS 180-327640/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	327640
LCS 180-327642/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	327642
180-109846-2 MS	ARGWC-15	Total Recoverable	Water	EPA 6020B	327640
180-109846-2 MSD	ARGWC-15	Total Recoverable	Water	EPA 6020B	327640
180-109850-1 MS	ARGWA-5	Total Recoverable	Water	EPA 6020B	327642

Metals (Continued)

Analysis Batch: 330300 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109850-1 MSD	ARGWA-5	Total Recoverable	Water	EPA 6020B	327642

Analysis Batch: 330464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109851-4	ARGWC-22	Total Recoverable	Water	EPA 6020B	327642
MB 180-327642/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	327642
LCS 180-327642/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	327642

Analysis Batch: 330720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-3	DUP-2	Total Recoverable	Water	EPA 6020B	328062

General Chemistry

Analysis Batch: 326608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109851-1	EB#2	Total/NA	Water	SM 2540C	
180-109851-4	ARGWC-22	Total/NA	Water	SM 2540C	
MB 180-326608/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-326608/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 326682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total/NA	Water	SM 2540C	
180-109918-2	ARGWC-23	Total/NA	Water	SM 2540C	
180-109918-3	DUP-2	Total/NA	Water	SM 2540C	
MB 180-326682/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-326682/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 326626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total/NA	Water	Field Sampling	
180-109846-2	ARGWC-15	Total/NA	Water	Field Sampling	
180-109846-3	ARGWC-16	Total/NA	Water	Field Sampling	
180-109847-2	ARGWA-12	Total/NA	Water	Field Sampling	
180-109847-3	ARGWA-13	Total/NA	Water	Field Sampling	
180-109847-4	ARGWC-17	Total/NA	Water	Field Sampling	
180-109848-1	ARGWC-10	Total/NA	Water	Field Sampling	
180-109848-2	DUP-1	Total/NA	Water	Field Sampling	
180-109848-3	ARGWC-9	Total/NA	Water	Field Sampling	
180-109850-1	ARGWA-5	Total/NA	Water	Field Sampling	
180-109850-2	ARGWA-3	Total/NA	Water	Field Sampling	
180-109850-3	ARGWC-7	Total/NA	Water	Field Sampling	
180-109851-2	ARGWA-19	Total/NA	Water	Field Sampling	
180-109851-3	ARGWA-20	Total/NA	Water	Field Sampling	
180-109851-4	ARGWC-22	Total/NA	Water	Field Sampling	

Analysis Batch: 327279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-2	ARGWC-23	Total/NA	Water	Field Sampling	

Field Service / Mobile Lab (Continued)

Analysis Batch: 327279 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-3	DUP-2	Total/NA	Water	Field Sampling	
180-109918-4	ARAMW-1	Total/NA	Water	Field Sampling	
180-109918-5	ARAMW-2	Total/NA	Water	Field Sampling	
180-109929-1	ARGWC-8	Total/NA	Water	Field Sampling	
180-109929-2	ARGWC-18	Total/NA	Water	Field Sampling	
180-109930-2	ARAMW-3	Total/NA	Water	Field Sampling	
180-109930-3	ARAMW-4	Total/NA	Water	Field Sampling	
180-109970-1	ARAMW-6	Total/NA	Water	Field Sampling	
180-109970-2	ARGWC-21	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

244- ATLANTA

Client Information	Sampler: D Howard, E Gwilke, A Shredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power			Analysis Requested	Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			Preservation Codes:
City: Atlanta	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: GA, 30308	PO #:			
Phone: 404-506-7116(Tel)	WO #:			Other:
Email: SCS Contacts	Project #: 18020201			
Project Name: CCR - Plant Arkwright	SSOW#:			
Site: Georgia				

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)	App IV metals(6020) + Hg(7470A)	Ra 226/228 (9315/9320)	Fluoride(300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H		
ARGWA-14	8/19/20	1355	G	W			X	X	X	3	pH = 6.62
ARGWC-15	↓	1005	G	W			X	X	X	3	pH = 6.47
ARGWC-16	↓	1205	G	W			X	X	X	3	pH = 5.24

180-109846 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
David K Howard	8/19/20 / 1815		Dallas Waters	8-20-20 9:30	ETA
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:

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

244- ATLANTA

Client Information	Sampler: D Howard, E Gulka, A Shoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page: 1 of 1
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days): Standard			
State, Zip: GA, 30308	PO #:			
Phone: 404-506-7116(Tel)	WO #:			
Email: SCS Contacts	Project #: 18020201			
Project Name: CCR - Plant Arkwright	SSOW#:			
Site: Georgia				

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)	App IV metals 6020B + Hg 7470A	Fluoride 300_ORGFM_28D	Radium 226/228 (9315/9320)	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	H	D		
FB#1	8/18/20	1100	G	W			1	1	1	3	
ARGWA-12		1300	G	W			1	1	1	3	pH = 6.48
ARGWA-13		1450	G	W			1	1	1	3	pH = 6.15
ARGWC-17		1445	G	W			1	1	1	3	pH = 5.07

180-109847 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
1	Daniel L Howard	8/18/20 / 1730	Wood E&IS	Donna Watts	8-20-20 930	Eurofins
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

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

Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, EGilker, AShoreli	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Atlanta	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: GA, 30308	PO #:			
Phone: 404-506-7116(Tel)	WO #:			Other:
Email: SCS Contacts	Project #: 18020201			
Project Name: CCR - Plant Arkwright	SSOW#:			
Site: Georgia				

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)	App IV metals (6020) + Hg (7470A)	Radium 226/228 (9315/9320)	Fluoride (300.)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D	H	X	
~~DUP AGGW~~ ARGWC-10	8/19/20	1135	G	W			X	X	X	3	pH = 7.06
DUP-1	↓	—	G	W			X	X	X	3	pH = 7.06
ARGWC-9		1425	G	W			X	X	X	3	pH = 7.21

180-109848 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: David L Howard	Date/Time: 8/19/20/1815	Company	Received by: Pace Water	Date/Time: 8-20-20	Company: FEDEX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:30	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

244- ATLANTA

Client Information		
Client Contact: SCS Contacts	Sampler: DHoward, EGuillen, AShoredits	Lab PM: Brown, Shali
Company: GA Power	Phone:	E-Mail: shali.brown@eurofinset.com
Address: 241 Ralph McGill Blvd SE	Due Date Requested:	Carrier Tracking No(s):
City: Atlanta	TAT Requested (days):	COC No:
State, Zip: GA, 30308		Page: 1 of 1
Phone: 404-506-7116(Tel)	PO #:	Job #:
Email: SCS Contacts	WO #:	
Project Name: CCR - Plant Arkwright	Project #: 18020201	
Site: Georgia	SSOW#:	

Analysis Requested

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)	App IV metals(6020B) + Hg 7470A	Fluoride 300_ORGFM_28D	Radium 226/228 (9315/9320)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X				X	
ARGWA-5	8/18/20	1135	G	W			1	1	1	3	pH = 6.18
ARGWA-3	↓	1320	G	W			1	1	1	3	pH = 6.47
ARGWC-7	↓	1525	G	W			1	1	1	3	pH = 6.70

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:

180-109850 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
Daniel L Howard	8/18/20/ 1730	Wood E+IS	[signature]	8-20-20 9:30	ETA [illegible]
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

244- ATLANTA

Client Information

Field	Value
Client Contact	SCS Contacts
Company	GA Power
Address	241 Ralph McGill Blvd SE
City	Atlanta
State, Zip	GA, 30308
Phone	404-506-7116(Tel)
Email	SCS Contacts
Project Name	CCR - Plant Arkwright
Site	Georgia
Sampler	DHoward, EGuillen, AShoredits
Phone	
Due Date Requested:	
TAT Requested (days):	
PO #	
WO #	
Project #	18020201
SSOW#	
Lab PM	Brown, Shali
E-Mail	shali.brown@eurofinset.com
Carrier Tracking No(s)	
COC No.	
Page	
Job #	

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	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)	App IV metals (6020) + Hg (7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Fluoride, Chloride, Sulfate 300	TDS 2540C	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	I	I	I		
EB#2	8/19/20	0915	G	W			X	X		X	X	3	
ARGWA-19	↓	1056	G	W			X	X	X			3	pH = 6.25
ARGWA-20	↓	1344	G	W			X	X	X			3	pH = 6.16
ARGWC-22	↓	1532	G	W			X	X		X	X	3	pH = 6.21

180-109851 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
Daniel Howard	8/19/20 / 1815		[signature]	8-20-20 9:30	ETAPIT

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

244- ATLANTA

Client Information	Sampler: D Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

Analysis Requested

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)	App IV metals(6020B)+Hg(7470A)	Radium 226/228(9315/9320)	chloride, sulfate, fluoride (300)	TDS 2540C	Fluoride(300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D	I	I	I	X	
FB#2	8/20/20	1045	G	W			X	X	X	X		3	
ARGWC-23		1215	G	~~G~~W			X	X	X	X		3	pH = 6.33
DUP-2		--	G	~~G~~W			X	X	X	X		3	pH = 6.33
ARAMW-1		1436	G	W			X	X			X	3	pH = 6.09
ARAMW-2		1635	G	W			X	X			X	3	pH = 5.99

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:

180-109918 Chain of Custody

Possible Hazard Identification
[X] 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 [X] 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: Daniel L Howard	Date/Time: 8/20/20 1840	Company: Wood	Received by: Dellie Watson	Date/Time: 8-21-20 9:45	Company: ETA Att
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

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

Chain of Custody Record

244- ATLANTA

eurofins

Client Information	Sampler: Ever Guillen, A Shoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

Analysis Requested

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)	App III metals + Hg (6020B/7470A) Tot	Radium 226/228 (9315/9320)	Fluoride (300)	App IV metals + Hg (6020B/7470A) Diss	Total Number of containers	Special Instructions/Note:
				Preservation Code:	X	X	D	D	H	D	X	
ARGWC-8	8/20/20	1035	G	W			X	X	X		3	pH = 6.34
ARGWC-18	8/20/20	1705	G	W	Y		X	X	X	X	4	pH = 6.43

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:

180-109929 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
Daniel R Howard	8/20/20 / 1840	Wood	[signature] Watson	8-31-20 945	ETA ATL

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

244- ATLANTA

Client Information	Sampler: Evers Guillen, Andrew Sheridan	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Atlanta	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: GA, 30308	PO #:			
Phone: 404-506-7116(Tel)	WO #:			Other:
Email: SCS Contacts	Project #: 18020201			
Project Name: CCR - Plant Arkwright	SSOW#:			
Site: Georgia				

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)	App IV metals + Hg (6020B/7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H		
EB#1	8/20/20	0930	G	W			X	X	X		
ARAMW-3		1445	G	W			X	X	X		pH = 6.24
ARAMW-4		1145	G	W			X	X	X		pH = 5.77

180-109930 Chain of Custody

Possible Hazard Identification
[X] 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 [X] 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
David L Howard	8/20/20 / 1840	Wood		8-21-20	ETAPT
Relinquished by	Date/Time	Company	Received by	Date/Time 945	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

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

Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, AShoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page: 1 of 1
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days): Standard			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Oil, etc.) (BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	App IV metals + Hg (6020B/7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	D	H		
ARAMW-6	8/21/20	0945	G	W			X	X	X	3	pH=6.32
ARGWC-21	↓	1036	G	W			X	X	X	3	pH=5.89

180-109970 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:

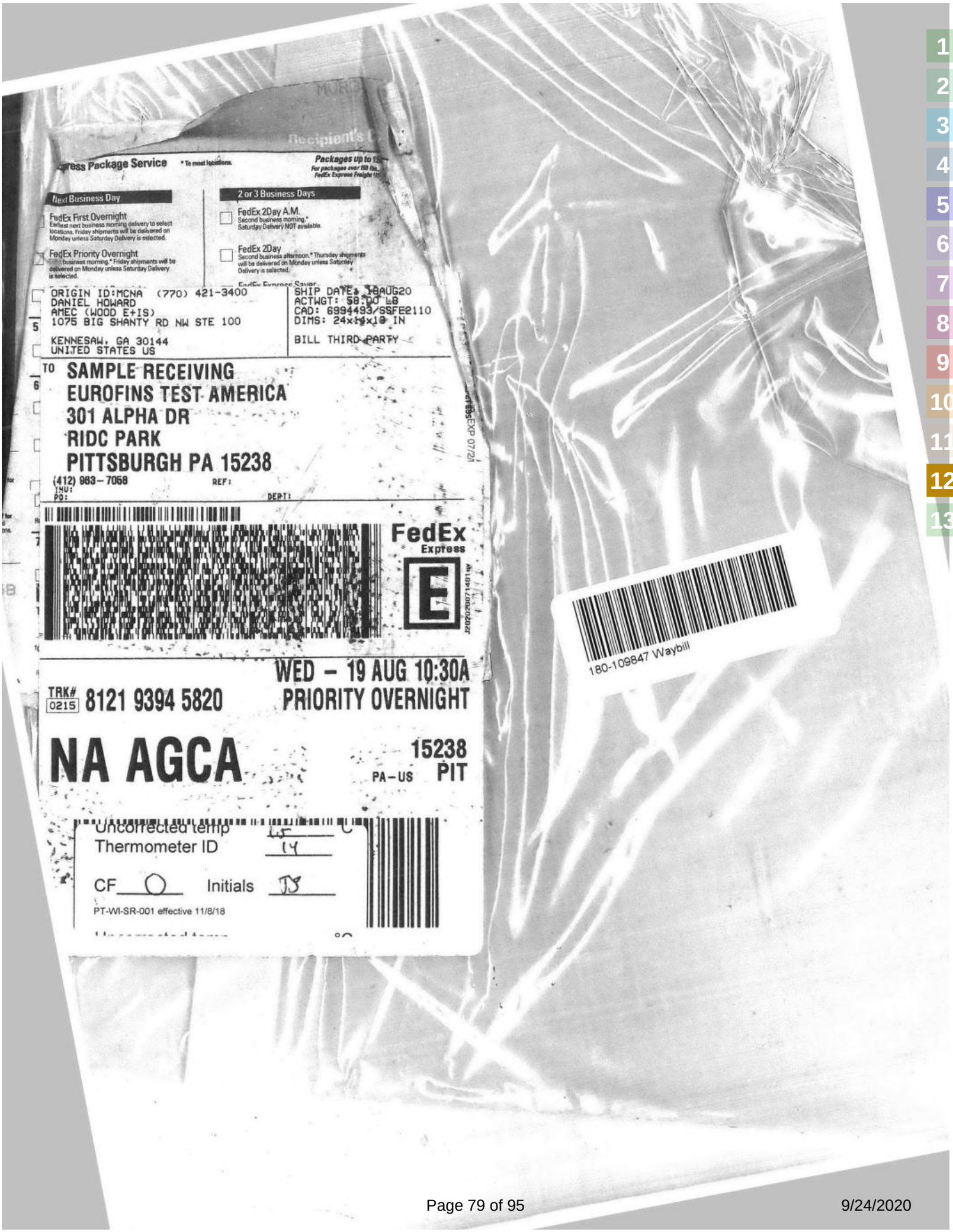
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Daniel L Howard	8/21/20 1315				
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


Recipient's Copy
Express Package Service
Next Business Day
FedEx First Overnight
FedEx Priority Overnight
ORIGIN ID:MCNA (770) 421-3
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE
KENNESAW, GA 30144
UNITED STATES US
SAMPLE RECIEVIN
EUROFINS TEST A
301 ALPHA DR
PITTSBURGH PA
(412) 968-7868
Hold Weekday
Hold Saturday
Uncorrected Temp
Thermometer ID
CF
Initials
PT-WI-SR-001 effective 11/8/18
180-109846 Waybill


Express Package Service
* To most locations.
Packages up to 1
For packages over 150 lbs.
FedEx Express Freight
Next Business Day
FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
FedEx Priority Overnight
business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
2 or 3 Business Days
FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.
FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
FedEx Express Saver
ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 18AUG20
ACTWGT: 58.00 LB
CAD: 6994493/SSFE2110
DIMS: 24x14x10 IN
BILL THIRD PARTY
TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 983-7068
REF:
INV:
PO:
DEPT:
FedEx
Express
WED - 19 AUG 10:30A
TRK# 0215 8121 9394 5820
PRIORITY OVERNIGHT
NA AGCA
15238
PA-US PIT
Uncorrected temp 4.5 C
Thermometer ID 14
CF 0 Initials JS
PT-WI-SR-001 effective 11/8/18
180-109847 Waybill

180-109848 Waybill

Form ID No. 0215

Recipient's Copy

Express Package Service *To most locations.

Packages up to 150 lbs.

Next Business Day

FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight

2 or 3 Business Days

FedEx 2Day A.M.
FedEx 2Day
FedEx Express Saver

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100

KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 19AUG20
ACTWGT: 56.65 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO SAMPLE RECIEVING
EUROFINS TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238

(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx Express

E

A
5360
08.20

THU - 20 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0215 8121 9394 5360

DSR
15238
PA-US PIT

NA AGCA

Uncorrected temp 1.1 C
Thermometer ID 14
CF 0 Initials B

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

05884

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 18AUG20
ACTWGT: 42.15 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN
BILL THIRD PARTY

TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058 REF:
INV:
PO: DEPT:

Part # 156297-435 RIT2 EXP 07/21

FedEx Express

E

J202020071401uv

WED - 19 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0215 8121 9394 5830

AHS
15238
PA-US PIT

NA AGCA

Uncorrected temp 2.1 °C
Thermometer ID 14
CF 0 Initials JJ
PT-WI-SR-001 effective 11/8/18

180-109850 Waybill

Align Open End of FedEx Pouch Here

Fe
FT 97
FZ
1
10:30
A
5841
08.20

180-109851 Waybill

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100

KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 19AUG20
ACTWGT: 57.45 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO **SAMPLE RECIEVING**
EUROFINS TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-7058 REF:
INV:
PO: DEPT:

Part # 156297-435 RIT2 EXP 07/21

FedEx
Express
E

THU - 20 AUG 10:30A
PRIORITY OVERNIGHT

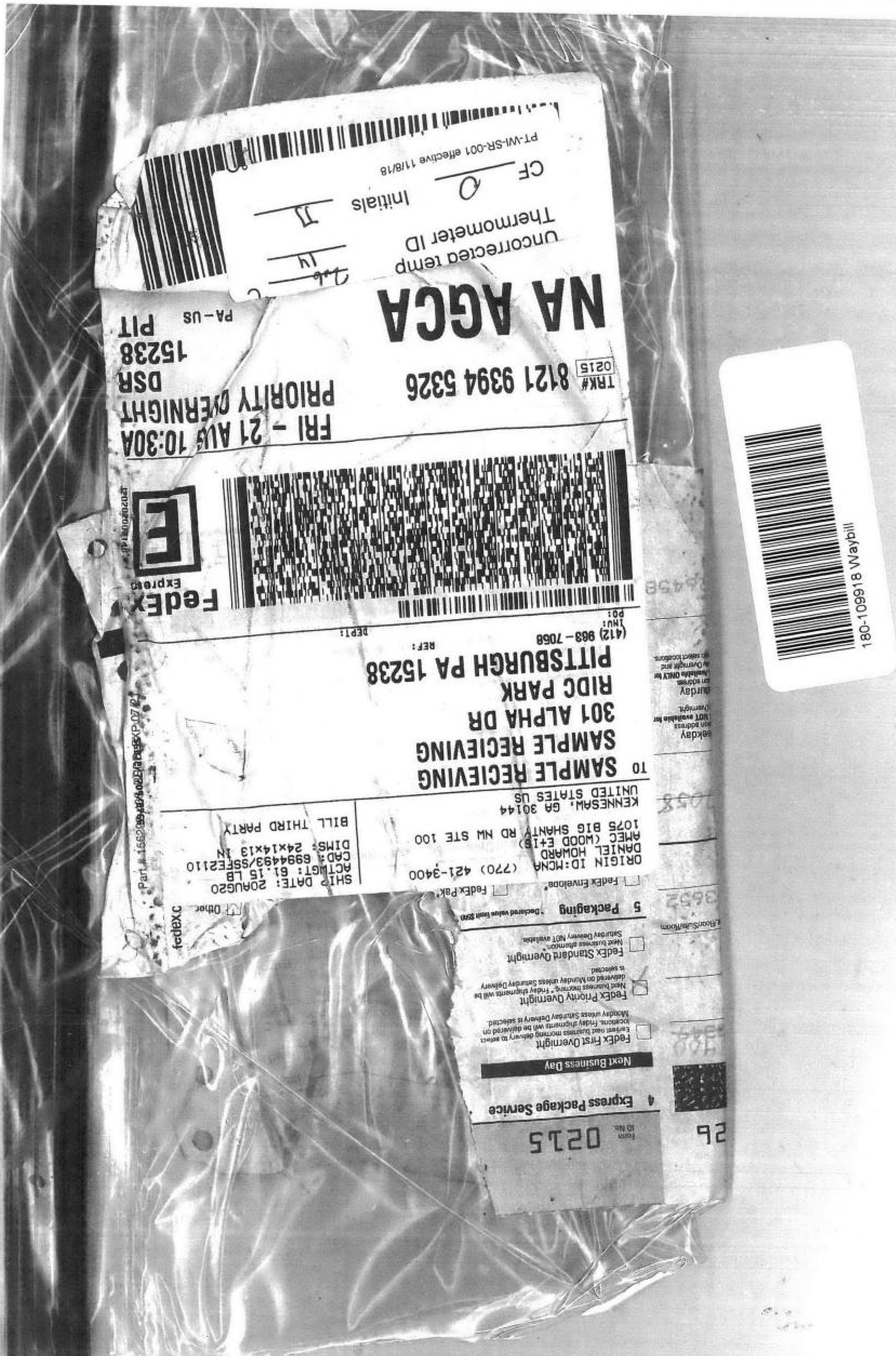
TRK# 0215 **8121 9394 5841**

DSR
15238
PIT

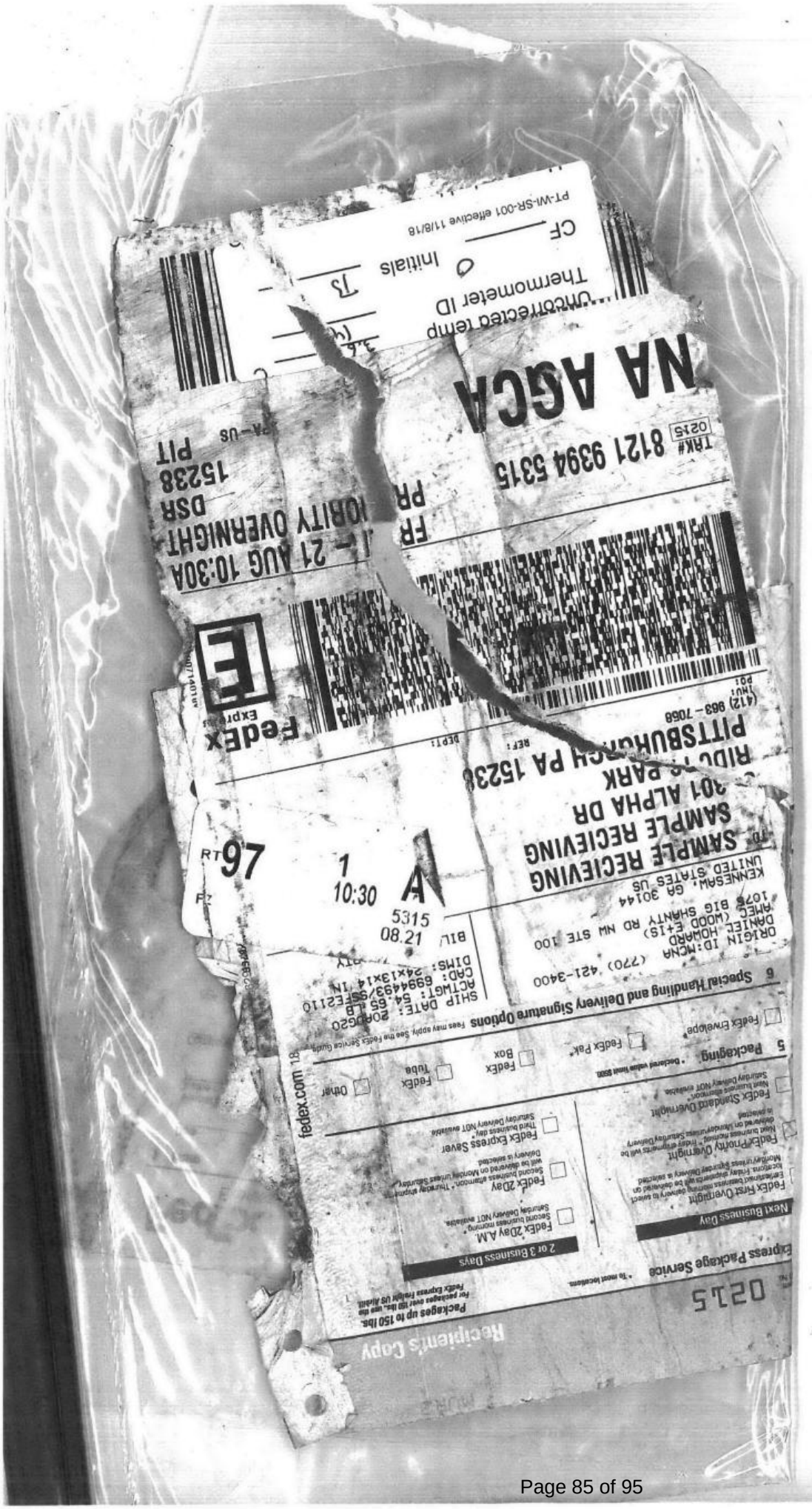
NA AGCA

PA-US

Uncorrected temp 1.6 °C
Thermometer ID 14
CF 0 Initials JJ
PT-WI-SR-001 effective 11/8/18


PT-WI-SR-001 effective 11/8/18
CF
Thermometer ID
Initials
Uncorrected temp
NA AGCA
TRK# 0215 8121 9394 5326
FRI - 21 AUG 10:30A
PRIORITY OVERNIGHT
DSR
15238
PA-US PIT
FedEx Express
TO SAMPLE RECIEVING
SAMPLE RECIEVING
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7068
ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 20AUG20
ACTWGT: 61.15 LB
DIMS: 24x14x13 IN
BILL THIRD PARTY
Express Package Service
Next Business Day
FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight
Packaging
FedEx Envelope
FedEx Pak
180-109918 Waybill


FedEx Tracking Number 8121 9394 5337
Recipient's Copy
4 Express Package Service
Next Business Day
FedEx First Overnight
ORIGIN ID:MCNA (770) 421-340
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 1
KENNESAW, GA 30144
UNITED STATES US
TO SAMPLE RECIEVING
SAMPLE RECIEVING
301 ALPHA DR
RIDC PARK
180-109929 Waybill
FedEx Express
FRI - 21 AUG 10:30A
PRIORITY OVERNIGHT
TRK# 8121 9394 5337
NA AGCA
15238
PIT
Uncorrected Temp
Thermometer ID
Initials
CF
PT-WI-SR-001 effective 11/8/18
Hold Weekday
Hold Saturday
8121 9394 5337



180-109930 Waybill

180-109970 Waybill

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC WOOD E&IS
1075 BIG SHANTY RD NW STE 100

KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 21AUG20
ACTWGT: 51.00 LB
CAD: 6994493/SSFE2110
DIMS: 24x15x15 IN

BILL THIRD PARTY

TO EUROFINS TEST AMERICA
EUROFINS TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963 - 7058
INV:
PO:

REF: 6122201429.2002

DEPT:

FedEx Express

E

J202020071401uv

FedEx
TRK# 0215 8121 9394 5348

SATURDAY 12:00P
PRIORITY OVERNIGHT
DSR

X0 AGCA

15238
PA-US
PIT

Uncorrected temp 2.4 °C
Thermometer ID 14
CF 0 Initials JJ
PT-WI-SR-001 effective 11/8/18

FID 84105 21AUG20 MCNA 56BC2/7709/05A2

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-109846-1

Login Number: 109846
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: 180-109846-1

Login Number: 109847
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: 180-109846-1

Login Number: 109848
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: 180-109846-1

Login Number: 109850
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: 180-109846-1

Login Number: 109851
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: 180-109846-1

Login Number: 109918
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: 180-109846-1

Login Number: 109929
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: 180-109846-1

Login Number: 109930
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: 180-109846-1

Login Number: 109970
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	

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-109846-2
Client Project/Site: CCR - Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
10/8/2020 5:03:16 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-109846-2

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-109846-2

Comments
No additional comments.

Receipt
The samples were received on 8/20/2020 9:30 AM, 8/21/2020 9:45 AM and 8/22/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 9 coolers at receipt time were 1.1° C, 1.2° C, 1.5° C, 1.6° C, 2.1° C, 2.4° C, 2.6° C, 2.7° C and 3.6° C.

Receipt Exceptions
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWC-10 (180-109848-1). The container labels list an id of GWC-10 while the COC lists ARGWC-10. The id's on the Coc were used.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWC-9 (180-109848-3). The container labels list an id of GWC-9 while the COC lists ARGWC-9. The id's on the Coc were used.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWA-5 (180-109850-1). The container labels list an id of GWA-5 while the COC lists ARGWA-5. The id's on the Coc were used.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWA-3 (180-109850-2). The container labels list an id of GWA-3 while the COC lists ARGWA-3. The id's on the Coc were used.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): ARGWC-7 (180-109850-3). The container labels list an id of GWC-7 while the COC lists ARGWC-7. The id's on the Coc were used.

RAD
Methods 903.0, 9315: Radium-226 prep batch 160-480640:
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.
ARGWA-14 (180-109846-1), ARGWC-15 (180-109846-2), ARGWC-16 (180-109846-3), FB#1 (180-109847-1), ARGWA-12 (180-109847-2), ARGWA-13 (180-109847-3), ARGWC-17 (180-109847-4), ARGWC-10 (180-109848-1), DUP-1 (180-109848-2), ARGWC-9 (180-109848-3), (LCS 160-480640/1-A) and (MB 160-480640/24-A)

Method 9315: Radium-226 prep batch 160-480684:
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.
ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), EB#2 (180-109851-1), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3), ARGWC-22 (180-109851-4), (LCS 160-480684/1-A), (LCSD 160-480684/2-A) and (MB 160-480684/10-A)

Methods 903.0, 9315: Radium-226 prep batch 160-481082:
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.
FB#2 (180-109918-1), ARGWC-23 (180-109918-2), DUP-2 (180-109918-3), ARAMW-1 (180-109918-4), ARAMW-2 (180-109918-5), ARGWC-8 (180-109929-1), ARGWC-18 (180-109929-2), ARAMW-6 (180-109970-1), ARGWC-21 (180-109970-2), (LCS 160-481082/1-A), (LCSD 160-481082/2-A) and (MB 160-481082/24-A)

Methods 903.0, 9315: Radium-226 prep batch 160-481232:

Job ID: 180-109846-2 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

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.
EB#1 (180-109930-1), ARAMW-3 (180-109930-2), ARAMW-4 (180-109930-3), (LCS 160-481232/1-A) and (MB 160-481232/23-A)

Methods 904.0, 9320: Radium-228 prep batch 160-481237:
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.
EB#1 (180-109930-1), ARAMW-3 (180-109930-2), ARAMW-4 (180-109930-3), (LCS 160-481237/1-A) and (MB 160-481237/23-A)

Methods 904.0, 9320: Radium-228 prep batch 160-480651:
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.
ARGWA-14 (180-109846-1), ARGWC-15 (180-109846-2), ARGWC-16 (180-109846-3), FB#1 (180-109847-1), ARGWA-12 (180-109847-2), ARGWA-13 (180-109847-3), ARGWC-17 (180-109847-4), ARGWC-10 (180-109848-1), DUP-1 (180-109848-2), ARGWC-9 (180-109848-3), (LCS 160-480651/1-A) and (MB 160-480651/24-A)

Method 9320: Radium-228 prep batch 160-480689:
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.
EB#2 (180-109851-1), (LCS 160-480689/1-A), (LCSD 160-480689/2-A) and (MB 160-480689/10-A)

Method 9320: Ra228 160-480689
The laboratory control sample (LCS) recovery (137%) was high, outside acceptance criteria 75-125% indicating a potential high bias to sample activity. Activity in the sample was less than the MDC and is reported with this narrative.

Methods 904.0, 9320: Radium-228 prep batch 160-481085:
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.
FB#2 (180-109918-1), ARGWC-23 (180-109918-2), ARAMW-1 (180-109918-4), ARAMW-2 (180-109918-5), ARGWC-8 (180-109929-1), ARGWC-18 (180-109929-2), ARAMW-6 (180-109970-1), ARGWC-21 (180-109970-2), (LCS 160-481085/1-A), (LCSD 160-481085/2-A) and (MB 160-481085/24-A)

Method 9320: Radium-228 prep batch 160-482400:
The method blank (MB) associated with the preparation batch 160-482400 and analytical batch 160-483126 , has activity above the MDC and RL. Per client request, the data has been reported with this narrative.

Method 9320: Radium-228 prep batch 160-482400:
The Radium-228 laboratory control sample duplicate (LCSD) recovery (134%) associated with the following samples is outside the standard upper QC limit (125%) indicating a potential positive bias for that analyte. However the recovery falls within in house statistical limits (upper limit 138%). Per client request, the data have been reported with this narrative. ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3), ARGWC-22 (180-109851-4), (LCS 160-482400/1-A), (LCSD 160-482400/2-A) and (MB 160-482400/9-A)

Method 9320: Radium-228 prep batch 160-482400:
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.
ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3), ARGWC-22 (180-109851-4), (LCS 160-482400/1-A), (LCSD 160-482400/2-A) and (MB 160-482400/9-A)

Job ID: 180-109846-2 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Method 9320: Radium-228 prep batch 160-483141:
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.
DUP-2 (180-109918-3), (LCS 160-483141/1-A), (LCSD 160-483141/2-A) and (MB 160-483141/4-A)

Method PrecSep_0: Radium 228 Prep Batch 160-480689:
Insufficient sample volume was available to perform a sample duplicate for the following samples: ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), EB#2 (180-109851-1), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3) and ARGWC-22 (180-109851-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-481237:
Samples 240-135743-1 and 240-135511-2 were prepared at a reduced aliquot due to yellow discoloration and a cloudy appearance: EB#1 (180-109930-1), ARAMW-3 (180-109930-2) and ARAMW-4 (180-109930-3).All samples were prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: <CommaMerge>.

Method PrecSep_0: Radium 228 Prep Batch 160-482400:
The following samples were prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3) and ARGWC-22 (180-109851-4).

Method PrecSep_0: Radium 228 Prep Batch 160-482400:
Insufficient sample volume was available to perform a sample duplicate for the following samples: ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3) and ARGWC-22 (180-109851-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-483141:
Insufficient sample volume was available to perform a sample duplicate for the following sample: DUP-2 (180-109918-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-483141:
The following sample was prepared at a reduced aliquot due to re-prep: DUP-2 (180-109918-3).

Method PrecSep-21: Radium 226 Prep Batch 160-480684:
Insufficient sample volume was available to perform a sample duplicate for the following samples: ARGWA-5 (180-109850-1), ARGWA-3 (180-109850-2), ARGWC-7 (180-109850-3), EB#2 (180-109851-1), ARGWA-19 (180-109851-2), ARGWA-20 (180-109851-3) and ARGWC-22 (180-109851-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-481232:
Samples 240-135743-1 and 240-135511-2 were prepared at a reduced aliquot due to yellow discoloration and a cloudy appearance: EB#1 (180-109930-1), ARAMW-3 (180-109930-2) and ARAMW-4 (180-109930-3).All samples were prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: <CommaMerge>.

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 Arkwright

Job ID: 180-109846-2

Qualifiers

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-109846-2

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
Alaska (UST)	State	20-001	05-06-22
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	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	10-05-20
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

Sample Summary

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

Job ID: 180-109846-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-109846-1	ARGWA-14	Water	08/19/20 13:55	08/20/20 09:30	
180-109846-2	ARGWC-15	Water	08/19/20 10:05	08/20/20 09:30	
180-109846-3	ARGWC-16	Water	08/19/20 12:05	08/20/20 09:30	
180-109847-1	FB#1	Water	08/18/20 11:00	08/20/20 09:30	
180-109847-2	ARGWA-12	Water	08/18/20 13:00	08/20/20 09:30	
180-109847-3	ARGWA-13	Water	08/18/20 14:50	08/20/20 09:30	
180-109847-4	ARGWC-17	Water	08/18/20 14:45	08/20/20 09:30	
180-109848-1	ARGWC-10	Water	08/19/20 11:35	08/20/20 09:30	
180-109848-2	DUP-1	Water	08/19/20 00:00	08/20/20 09:30	
180-109848-3	ARGWC-9	Water	08/19/20 14:25	08/20/20 09:30	
180-109850-1	ARGWA-5	Water	08/18/20 11:35	08/20/20 09:30	
180-109850-2	ARGWA-3	Water	08/18/20 13:20	08/20/20 09:30	
180-109850-3	ARGWC-7	Water	08/18/20 15:25	08/20/20 09:30	
180-109851-1	EB#2	Water	08/19/20 09:15	08/20/20 09:30	
180-109851-2	ARGWA-19	Water	08/19/20 10:56	08/20/20 09:30	
180-109851-3	ARGWA-20	Water	08/19/20 13:44	08/20/20 09:30	
180-109851-4	ARGWC-22	Water	08/19/20 15:32	08/20/20 09:30	
180-109918-1	FB#2	Water	08/20/20 10:45	08/21/20 09:45	
180-109918-2	ARGWC-23	Water	08/20/20 12:15	08/21/20 09:45	
180-109918-3	DUP-2	Water	08/20/20 00:00	08/21/20 09:45	
180-109918-4	ARAMW-1	Water	08/20/20 14:36	08/21/20 09:45	
180-109918-5	ARAMW-2	Water	08/20/20 16:35	08/21/20 09:45	
180-109929-1	ARGWC-8	Water	08/20/20 10:35	08/21/20 09:45	
180-109929-2	ARGWC-18	Water	08/20/20 17:05	08/21/20 09:45	
180-109930-1	EB#1	Water	08/20/20 09:30	08/21/20 09:45	
180-109930-2	ARAMW-3	Water	08/20/20 14:45	08/21/20 09:45	
180-109930-3	ARAMW-4	Water	08/20/20 11:45	08/21/20 09:45	
180-109970-1	ARAMW-6	Water	08/21/20 09:45	08/22/20 10:00	
180-109970-2	ARGWC-21	Water	08/21/20 10:36	08/22/20 10:00	

Method Summary

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

Job ID: 180-109846-2

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 Arkwright

Job ID: 180-109846-2

Client Sample ID: ARGWA-14
Date Collected: 08/19/20 13:55
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-1
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			1000.10 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:21	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.10 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:19	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-15
Date Collected: 08/19/20 10:05
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-2
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			999.48 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:21	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.48 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:19	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-16
Date Collected: 08/19/20 12:05
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-3
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			999.56 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:22	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.56 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:20	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FB#1
Date Collected: 08/18/20 11:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-1
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			1000.98 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:22	SCB	TAL SL
	Instrument ID: GFPCRED									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: FB#1
Date Collected: 08/18/20 11:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-1
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_0			1000.98 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:20	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-12
Date Collected: 08/18/20 13:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-2
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			999.27 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:22	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.27 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:20	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-13
Date Collected: 08/18/20 14:50
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-3
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			999.64 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:22	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.64 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:20	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-17
Date Collected: 08/18/20 14:45
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-4
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			999.83 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:22	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.83 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482102	09/10/20 12:20	SCB	TAL SL
	Instrument ID: GFPCBLUE									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-17
Date Collected: 08/18/20 14:45
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-4
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			482641	09/17/20 10:50	CAH	TAL SL

Client Sample ID: ARGWC-10
Date Collected: 08/19/20 11:35
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-1
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			1000.89 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:23	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.89 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482071	09/10/20 12:22	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-1
Date Collected: 08/19/20 00:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-2
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			999.10 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 11:23	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.10 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482071	09/10/20 12:22	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-9
Date Collected: 08/19/20 14:25
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-3
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			1000.50 mL	1.0 g	480640	08/24/20 15:59	AVB	TAL SL
Total/NA	Analysis	9315		1			482515	09/15/20 13:55	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.50 mL	1.0 g	480651	08/24/20 18:23	AVB	TAL SL
Total/NA	Analysis	9320		1			482071	09/10/20 12:22	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			482641	09/17/20 10:50	CAH	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: ARGWA-5
Date Collected: 08/18/20 11:35
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-1
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			999.23 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482643	09/16/20 08:04	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			750.08 mL	1.0 g	482400	09/14/20 10:14	AVB	TAL SL
Total/NA	Analysis	9320		1			483126	09/21/20 11:52	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			484497	10/02/20 17:53	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-3
Date Collected: 08/18/20 13:20
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-2
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			1000.90 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482643	09/16/20 09:50	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			749.34 mL	1.0 g	482400	09/14/20 10:14	AVB	TAL SL
Total/NA	Analysis	9320		1			483126	09/21/20 11:52	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			484497	10/02/20 17:53	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-7
Date Collected: 08/18/20 15:25
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-3
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			999.96 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482613	09/16/20 09:49	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			750.00 mL	1.0 g	482400	09/14/20 10:14	AVB	TAL SL
Total/NA	Analysis	9320		1			483126	09/21/20 11:53	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			484497	10/02/20 17:53	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: EB#2
Date Collected: 08/19/20 09:15
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-1
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			999.44 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482613	09/16/20 09:50	SCB	TAL SL
	Instrument ID: GFPCBLUE									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: EB#2
Date Collected: 08/19/20 09:15
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-1
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_0			999.44 mL	1.0 g	480689	08/25/20 12:41	AVB	TAL SL
Total/NA	Analysis	9320		1			481799	09/09/20 13:23	SCB	TAL SL
	Instrument ID: GFPCPROTEAN									
Total/NA	Analysis	Ra226_Ra228		1			484497	10/02/20 17:53	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-19
Date Collected: 08/19/20 10:56
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-2
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			1000.35 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482613	09/16/20 12:20	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			749.87 mL	1.0 g	482400	09/14/20 10:14	AVB	TAL SL
Total/NA	Analysis	9320		1			483126	09/21/20 11:53	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			484497	10/02/20 17:53	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-20
Date Collected: 08/19/20 13:44
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-3
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			999.17 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482613	09/16/20 12:21	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			749.41 mL	1.0 g	482400	09/14/20 10:14	AVB	TAL SL
Total/NA	Analysis	9320		1			483126	09/21/20 11:53	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			484497	10/02/20 17:53	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-22
Date Collected: 08/19/20 15:32
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-4
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			1000.16 mL	1.0 g	480684	08/25/20 11:29	AVB	TAL SL
Total/NA	Analysis	9315		1			482613	09/16/20 14:43	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			750.49 mL	1.0 g	482400	09/14/20 10:14	AVB	TAL SL
Total/NA	Analysis	9320		1			483126	09/21/20 11:53	SCB	TAL SL
	Instrument ID: GFPCBLUE									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-22
Date Collected: 08/19/20 15:32
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-4
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			484497	10/02/20 17:53	CMM	TAL SL

Client Sample ID: FB#2
Date Collected: 08/20/20 10:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-1
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			999.65 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 10:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.65 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482946	09/18/20 11:58	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-23
Date Collected: 08/20/20 12:15
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-2
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			999.18 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 10:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.18 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 11:59	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-2
Date Collected: 08/20/20 00:00
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-3
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			999.21 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 10:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			749.11 mL	1.0 g	483141	09/21/20 14:11	RBR	TAL SL
Total/NA	Analysis	9320		1			484399	09/30/20 12:41	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: ARAMW-1
Date Collected: 08/20/20 14:36
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-4
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			999.06 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 10:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.06 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 12:00	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-2
Date Collected: 08/20/20 16:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-5
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			999.58 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 12:46	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.58 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 12:00	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-8
Date Collected: 08/20/20 10:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-1
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			999.96 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 12:46	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.96 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 12:00	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-18
Date Collected: 08/20/20 17:05
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-2
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			1000.67 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 12:46	SCB	TAL SL
	Instrument ID: GFPCRED									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-18

Lab Sample ID: 180-109929-2
Date Collected: 08/20/20 17:05
Matrix: Water
Date Received: 08/21/20 09:45

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			1000.67 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 12:00	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: EB#1

Lab Sample ID: 180-109930-1
Date Collected: 08/20/20 09:30
Matrix: Water
Date Received: 08/21/20 09:45

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			749.85 mL	1.0 g	481232	08/31/20 13:50	AVB	TAL SL
Total/NA	Analysis	9315		1			483161	09/22/20 09:54	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			749.85 mL	1.0 g	481237	08/31/20 14:14	AVB	TAL SL
Total/NA	Analysis	9320		1			481801	09/09/20 13:13	CMM	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			484496	10/02/20 17:52	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-3

Lab Sample ID: 180-109930-2
Date Collected: 08/20/20 14:45
Matrix: Water
Date Received: 08/21/20 09:45

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			750.36 mL	1.0 g	481232	08/31/20 13:50	AVB	TAL SL
Total/NA	Analysis	9315		1			483161	09/22/20 09:55	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			750.36 mL	1.0 g	481237	08/31/20 14:14	AVB	TAL SL
Total/NA	Analysis	9320		1			481801	09/09/20 13:14	CMM	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			484496	10/02/20 17:52	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-4

Lab Sample ID: 180-109930-3
Date Collected: 08/20/20 11:45
Matrix: Water
Date Received: 08/21/20 09:45

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			749.18 mL	1.0 g	481232	08/31/20 13:50	AVB	TAL SL
Total/NA	Analysis	9315		1			483161	09/22/20 09:55	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			749.18 mL	1.0 g	481237	08/31/20 14:14	AVB	TAL SL
Total/NA	Analysis	9320		1	1.0 mL	1.0 mL	481801	09/09/20 13:14	CMM	TAL SL
	Instrument ID: GFPCPURPLE									

Lab Chronicle

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

Job ID: 180-109846-2

Client Sample ID: ARAMW-4
Date Collected: 08/20/20 11:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-3
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	Ra226_Ra228		1			484496	10/02/20 17:52	CMM	TAL SL

Client Sample ID: ARAMW-6
Date Collected: 08/21/20 09:45
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-1
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			1000.25 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 12:46	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 12:00	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-21
Date Collected: 08/21/20 10:36
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-2
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			999.57 mL	1.0 g	481082	08/28/20 16:42	AVB	TAL SL
Total/NA	Analysis	9315		1			483033	09/21/20 12:46	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.57 mL	1.0 g	481085	08/28/20 17:17	AVB	TAL SL
Total/NA	Analysis	9320		1			482957	09/18/20 12:00	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			483465	09/23/20 12:33	CMM	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

AVB = Amber Bleem

RBR = Rachael Ratcliff

Batch Type: Analysis

CAH = Chris Hough

CMM = Chelsea Mazariegos

SCB = Sarah Bernsen

Client Sample ID: ARGWA-14

Date Collected: 08/19/20 13:55
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-1

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	0.0256	U	0.0765	0.0765	1.00	0.144	pCi/L	08/24/20 15:59	09/15/20 11:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:21*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0805	U	0.258	0.258	1.00	0.480	pCi/L	08/24/20 18:23	09/10/20 12:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:19*	*1*
Y Carrier	*85.2*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:19*	*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	-0.0549	U	0.269	0.269	5.00	0.480	pCi/L		09/17/20 10:50	1

Client Sample Results

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-15

Date Collected: 08/19/20 10:05
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-2

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	0.0702	U	0.0795	0.0798	1.00	0.129	pCi/L	08/24/20 15:59	09/15/20 11:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*108*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:21*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.468**		0.260	0.264	1.00	0.391	pCi/L	08/24/20 18:23	09/10/20 12:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*108*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:19*	*1*
Y Carrier	*81.5*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:19*	*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	**0.538**		0.272	0.276	5.00	0.391	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-16

Date Collected: 08/19/20 12:05
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109846-3

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	0.161		0.0973	0.0983	1.00	0.124	pCi/L	08/24/20 15:59	09/15/20 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.4*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.144	U	0.269	0.269	1.00	0.459	pCi/L	08/24/20 18:23	09/10/20 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.4*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*
Y Carrier	*83.0*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.306	U	0.286	0.286	5.00	0.459	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: FB#1

Date Collected: 08/18/20 11:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-1

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	0.00971	U	0.0738	0.0738	1.00	0.144	pCi/L	08/24/20 15:59	09/15/20 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.533**		0.333	0.337	1.00	0.515	pCi/L	08/24/20 18:23	09/10/20 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*
Y Carrier	*83.4*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.543**		0.341	0.345	5.00	0.515	pCi/L		09/17/20 10:50	1

Client Sample Results

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

Job ID: 180-109846-2

Client Sample ID: ARGWA-12

Date Collected: 08/18/20 13:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-2

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	0.110	U	0.0818	0.0824	1.00	0.111	pCi/L	08/24/20 15:59	09/15/20 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.0*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.477	U	0.335	0.338	1.00	0.521	pCi/L	08/24/20 18:23	09/10/20 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.0*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*
Y Carrier	*77.4*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.587**		0.345	0.348	5.00	0.521	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWA-13

Date Collected: 08/18/20 14:50
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-3

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	0.0366	U	0.0581	0.0582	1.00	0.101	pCi/L	08/24/20 15:59	09/15/20 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.4*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.344	U	0.261	0.263	1.00	0.410	pCi/L	08/24/20 18:23	09/10/20 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.4*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*
Y Carrier	*83.7*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.380	U	0.267	0.269	5.00	0.410	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-17

Date Collected: 08/18/20 14:45
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109847-4

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	0.0989	U	0.0751	0.0756	1.00	0.104	pCi/L	08/24/20 15:59	09/15/20 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.324	U	0.246	0.248	1.00	0.386	pCi/L	08/24/20 18:23	09/10/20 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*
Y Carrier	*83.4*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:20*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.423**		0.257	0.259	5.00	0.386	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-10

Date Collected: 08/19/20 11:35
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-1

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	0.0672	U	0.0665	0.0668	1.00	0.102	pCi/L	08/24/20 15:59	09/15/20 11:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.1*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:23*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0942	U	0.245	0.245	1.00	0.451	pCi/L	08/24/20 18:23	09/10/20 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.1*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*
Y Carrier	*81.9*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0271	U	0.254	0.254	5.00	0.451	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: DUP-1
Date Collected: 08/19/20 00:00
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-2
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	0.0617	U	0.0657	0.0659	1.00	0.103	pCi/L	08/24/20 15:59	09/15/20 11:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*08/24/20 15:59*	*09/15/20 11:23*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.285	U	0.231	0.233	1.00	0.464	pCi/L	08/24/20 18:23	09/10/20 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.6*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*
Y Carrier	*79.3*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.224	U	0.240	0.242	5.00	0.464	pCi/L		09/17/20 10:50	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-9

Date Collected: 08/19/20 14:25
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109848-3

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	0.0965		0.0703	0.0708	1.00	0.0930	pCi/L	08/24/20 15:59	09/15/20 13:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*08/24/20 15:59*	*09/15/20 13:55*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0279	U	0.272	0.272	1.00	0.479	pCi/L	08/24/20 18:23	09/10/20 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*
Y Carrier	*81.5*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.124	U	0.281	0.281	5.00	0.479	pCi/L		09/17/20 10:50	1

Client Sample ID: ARGWA-5

Date Collected: 08/18/20 11:35
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-1

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	0.0111	U	0.0550	0.0550	1.00	0.109	pCi/L	08/25/20 11:29	09/16/20 08:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*40 - 110*	*08/25/20 11:29*	*09/16/20 08:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.11**	*	0.432	0.444	1.00	0.597	pCi/L	09/14/20 10:14	09/21/20 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.6*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:52*	*1*
Y Carrier	*81.9*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:52*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.12**		0.435	0.447	5.00	0.597	pCi/L		10/02/20 17:53	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWA-3

Date Collected: 08/18/20 13:20
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-2

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	0.0283	U	0.0621	0.0622	1.00	0.114	pCi/L	08/25/20 11:29	09/16/20 09:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*08/25/20 11:29*	*09/16/20 09:50*	*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 *	0.299	0.299	1.00	0.520	pCi/L	09/14/20 10:14	09/21/20 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:52*	*1*
Y Carrier	*82.6*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:52*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.132	U	0.305	0.305	5.00	0.520	pCi/L		10/02/20 17:53	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-7

Date Collected: 08/18/20 15:25
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109850-3

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	0.0331	U	0.0879	0.0880	1.00	0.159	pCi/L	08/25/20 11:29	09/16/20 09:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*08/25/20 11:29*	*09/16/20 09:49*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.343	U *	0.360	0.362	1.00	0.588	pCi/L	09/14/20 10:14	09/21/20 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.2*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*
Y Carrier	*81.9*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.376	U	0.371	0.373	5.00	0.588	pCi/L		10/02/20 17:53	1

Client Sample ID: EB#2

Date Collected: 08/19/20 09:15
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-1

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	0.0278	U	0.0658	0.0658	1.00	0.121	pCi/L	08/25/20 11:29	09/16/20 09:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.3*		*40 - 110*	*08/25/20 11:29*	*09/16/20 09:50*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0971	U *	0.314	0.314	1.00	0.546	pCi/L	08/25/20 12:41	09/09/20 13:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.3*		*40 - 110*	*08/25/20 12:41*	*09/09/20 13:23*	*1*
Y Carrier	*78.5*		*40 - 110*	*08/25/20 12:41*	*09/09/20 13:23*	*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	0.125	U	0.321	0.321	5.00	0.546	pCi/L		10/02/20 17:53	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWA-19

Date Collected: 08/19/20 10:56
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-2

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	0.0997	U	0.100	0.100	1.00	0.159	pCi/L	08/25/20 11:29	09/16/20 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*08/25/20 11:29*	*09/16/20 12:20*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.194	U *	0.371	0.372	1.00	0.632	pCi/L	09/14/20 10:14	09/21/20 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.0*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*
Y Carrier	*84.1*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.294	U	0.384	0.385	5.00	0.632	pCi/L		10/02/20 17:53	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWA-20

Date Collected: 08/19/20 13:44
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-3

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	0.100	U	0.0809	0.0814	1.00	0.119	pCi/L	08/25/20 11:29	09/16/20 12:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*40 - 110*	*08/25/20 11:29*	*09/16/20 12:21*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.840**	*	0.402	0.409	1.00	0.582	pCi/L	09/14/20 10:14	09/21/20 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*
Y Carrier	*81.1*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.940**		0.410	0.417	5.00	0.582	pCi/L		10/02/20 17:53	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-22
Date Collected: 08/19/20 15:32
Date Received: 08/20/20 09:30

Lab Sample ID: 180-109851-4
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	0.0279	U	0.0970	0.0970	1.00	0.178	pCi/L	08/25/20 11:29	09/16/20 14:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*75.2*		*40 - 110*	*08/25/20 11:29*	*09/16/20 14:43*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.560	U *	0.458	0.461	1.00	0.731	pCi/L	09/14/20 10:14	09/21/20 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.1*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*
Y Carrier	*78.9*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.587	U	0.468	0.471	5.00	0.731	pCi/L		10/02/20 17:53	1

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

Job ID: 180-109846-2

Client Sample ID: FB#2

Date Collected: 08/20/20 10:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-1

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	0.117	U	0.101	0.101	1.00	0.146	pCi/L	08/28/20 16:42	09/21/20 10:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.4*		*40 - 110*	*08/28/20 16:42*	*09/21/20 10:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.312	U	0.367	0.368	1.00	0.605	pCi/L	08/28/20 17:17	09/18/20 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.4*		*40 - 110*	*08/28/20 17:17*	*09/18/20 11:58*	*1*
Y Carrier	*72.9*		*40 - 110*	*08/28/20 17:17*	*09/18/20 11:58*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.429	U	0.381	0.382	5.00	0.605	pCi/L		09/23/20 12:33	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-23
Date Collected: 08/20/20 12:15
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-2
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	0.101	U	0.102	0.102	1.00	0.159	pCi/L	08/28/20 16:42	09/21/20 10:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.1*		*40 - 110*	*08/28/20 16:42*	*09/21/20 10:52*	*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	0.263	0.263	1.00	0.447	pCi/L	08/28/20 17:17	09/18/20 11:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.1*		*40 - 110*	*08/28/20 17:17*	*09/18/20 11:59*	*1*
Y Carrier	*81.1*		*40 - 110*	*08/28/20 17:17*	*09/18/20 11:59*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.242	U	0.282	0.282	5.00	0.447	pCi/L		09/23/20 12:33	1

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

Job ID: 180-109846-2

Client Sample ID: DUP-2
Date Collected: 08/20/20 00:00
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-3
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	0.130	U	0.115	0.115	1.00	0.173	pCi/L	08/28/20 16:42	09/21/20 10:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.4*		*40 - 110*	*08/28/20 16:42*	*09/21/20 10:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.266	U	0.400	0.401	1.00	0.670	pCi/L	09/21/20 14:11	09/30/20 12:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.6*		*40 - 110*	*09/21/20 14:11*	*09/30/20 12:41*	*1*
Y Carrier	*89.3*		*40 - 110*	*09/21/20 14:11*	*09/30/20 12:41*	*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	0.396	U	0.416	0.417	5.00	0.670	pCi/L		09/23/20 12:33	1

Client Sample ID: ARAMW-1

Date Collected: 08/20/20 14:36
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-4

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	0.121	U	0.104	0.105	1.00	0.155	pCi/L	08/28/20 16:42	09/21/20 10:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.4*		*40 - 110*	*08/28/20 16:42*	*09/21/20 10:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.406	U	0.321	0.323	1.00	0.509	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.4*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*75.5*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*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	**0.527**		0.337	0.340	5.00	0.509	pCi/L		09/23/20 12:33	1

Client Sample Results

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

Job ID: 180-109846-2

Client Sample ID: ARAMW-2

Date Collected: 08/20/20 16:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109918-5

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	0.516		0.150	0.157	1.00	0.109	pCi/L	08/28/20 16:42	09/21/20 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/28/20 16:42*	*09/21/20 12:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.61		0.462	0.569	1.00	0.413	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*80.4*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*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	4.13		0.486	0.590	5.00	0.413	pCi/L		09/23/20 12:33	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-8

Date Collected: 08/20/20 10:35
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-1

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	0.136		0.0990	0.0997	1.00	0.136	pCi/L	08/28/20 16:42	09/21/20 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*08/28/20 16:42*	*09/21/20 12:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00477	U	0.249	0.249	1.00	0.444	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*82.6*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*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	0.140	U	0.268	0.268	5.00	0.444	pCi/L		09/23/20 12:33	1

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-18

Date Collected: 08/20/20 17:05
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109929-2

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	0.0554	U	0.0711	0.0713	1.00	0.117	pCi/L	08/28/20 16:42	09/21/20 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.5*		*40 - 110*	*08/28/20 16:42*	*09/21/20 12:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.136	U	0.233	0.233	1.00	0.395	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.5*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*84.5*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.191	U	0.244	0.244	5.00	0.395	pCi/L		09/23/20 12:33	1

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

Job ID: 180-109846-2

Client Sample ID: EB#1
Date Collected: 08/20/20 09:30
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-1
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	0.0471	U	0.0764	0.0765	1.00	0.133	pCi/L	08/31/20 13:50	09/22/20 09:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.1*		*40 - 110*	*08/31/20 13:50*	*09/22/20 09:54*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.106	U	0.348	0.348	1.00	0.609	pCi/L	08/31/20 14:14	09/09/20 13:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.1*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:13*	*1*
Y Carrier	*82.6*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:13*	*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	0.154	U	0.356	0.356	5.00	0.609	pCi/L		10/02/20 17:52	1

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

Job ID: 180-109846-2

Client Sample ID: ARAMW-3

Date Collected: 08/20/20 14:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-2

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	-0.0239	U	0.0600	0.0600	1.00	0.141	pCi/L	08/31/20 13:50	09/22/20 09:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.8*		*40 - 110*	*08/31/20 13:50*	*09/22/20 09:55*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.113	U	0.381	0.382	1.00	0.707	pCi/L	08/31/20 14:14	09/09/20 13:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.8*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:14*	*1*
Y Carrier	*79.6*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:14*	*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	-0.137	U	0.386	0.387	5.00	0.707	pCi/L		10/02/20 17:52	1

Client Sample ID: ARAMW-4

Date Collected: 08/20/20 11:45
Date Received: 08/21/20 09:45

Lab Sample ID: 180-109930-3

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	0.204		0.110	0.112	1.00	0.135	pCi/L	08/31/20 13:50	09/22/20 09:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.3*		*40 - 110*	*08/31/20 13:50*	*09/22/20 09:55*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.419	U	0.434	0.436	1.00	0.708	pCi/L	08/31/20 14:14	09/09/20 13:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.3*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:14*	*1*
Y Carrier	*87.5*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:14*	*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	0.624	U	0.448	0.450	5.00	0.708	pCi/L		10/02/20 17:52	1

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

Job ID: 180-109846-2

Client Sample ID: ARAMW-6

Date Collected: 08/21/20 09:45
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-1

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	0.142	U	0.120	0.121	1.00	0.179	pCi/L	08/28/20 16:42	09/21/20 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.3*		*40 - 110*	*08/28/20 16:42*	*09/21/20 12:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.143	U	0.295	0.295	1.00	0.505	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.3*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*80.4*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*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	0.285	U	0.318	0.319	5.00	0.505	pCi/L		09/23/20 12:33	1

Client Sample Results

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

Job ID: 180-109846-2

Client Sample ID: ARGWC-21
Date Collected: 08/21/20 10:36
Date Received: 08/22/20 10:00

Lab Sample ID: 180-109970-2
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	0.0115	U	0.0905	0.0905	1.00	0.176	pCi/L	08/28/20 16:42	09/21/20 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.9*		*40 - 110*	*08/28/20 16:42*	*09/21/20 12:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.461**		0.264	0.267	1.00	0.394	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.9*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*79.6*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*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	**0.472**		0.279	0.282	5.00	0.394	pCi/L		09/23/20 12:33	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-480640/24-A
Matrix: Water
Analysis Batch: 482515

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480640

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04136	U	0.0641	0.0642	1.00	0.111	pCi/L	08/24/20 17:59	09/15/20 13:55	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.1*		*40 - 110*	*08/24/20 17:59*	*09/15/20 13:55*	*1*

Lab Sample ID: LCS 160-480640/1-A
Matrix: Water
Analysis Batch: 482515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480640

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	10.31		1.14	1.00	0.135	pCi/L	91	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.3*		*40 - 110*

Lab Sample ID: MB 160-480684/10-A
Matrix: Water
Analysis Batch: 482613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480684

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01097	U	0.0590	0.0590	1.00	0.116	pCi/L	08/25/20 11:29	09/16/20 14:43	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*40 - 110*	*08/25/20 11:29*	*09/16/20 14:43*	*1*

Lab Sample ID: LCS 160-480684/1-A
Matrix: Water
Analysis Batch: 482613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480684

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.909		1.06	1.00	0.157	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.1*		*40 - 110*

Lab Sample ID: LCSD 160-480684/2-A
Matrix: Water
Analysis Batch: 482613

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 480684

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.3	10.37		1.10	1.00	0.119	pCi/L	91	75 - 125	0.21	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-480684/2-A
Matrix: Water
Analysis Batch: 482613

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 480684

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	86.1		40 - 110

Lab Sample ID: MB 160-481082/24-A
Matrix: Water
Analysis Batch: 483033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 481082

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04354	U	0.0772	0.0773	1.00	0.137	pCi/L	08/28/20 16:42	09/21/20 12:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.6		40 - 110	08/28/20 16:42	09/21/20 12:46	1

Lab Sample ID: LCS 160-481082/1-A
Matrix: Water
Analysis Batch: 483033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 481082

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.948		1.12	1.00	0.128	pCi/L	88	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	84.1		40 - 110

Lab Sample ID: LCSD 160-481082/2-A
Matrix: Water
Analysis Batch: 483033

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 481082

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.3	10.11		1.14	1.00	0.151	pCi/L	89	75 - 125	0.07	1

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

Lab Sample ID: MB 160-481232/23-A
Matrix: Water
Analysis Batch: 483161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 481232

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08056	U	0.0728	0.0732	1.00	0.109	pCi/L	08/31/20 13:50	09/22/20 11:59	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.8		40 - 110	08/31/20 13:50	09/22/20 11:59	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-481232/1-A
Matrix: Water
Analysis Batch: 483161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 481232

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.1	13.59		1.42	1.00	0.121	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.1*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-480651/24-A
Matrix: Water
Analysis Batch: 482071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480651

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.01611	U	0.232	0.232	1.00	0.414	pCi/L	08/24/20 18:23	09/10/20 12:22	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.1*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*
Y Carrier	*85.2*		*40 - 110*	*08/24/20 18:23*	*09/10/20 12:22*	*1*

Lab Sample ID: LCS 160-480651/1-A
Matrix: Water
Analysis Batch: 482102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480651

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			7.82	8.153		1.08	1.00	0.560	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.3*		*40 - 110*
Y Carrier	*79.6*		*40 - 110*

Lab Sample ID: MB 160-480689/10-A
Matrix: Water
Analysis Batch: 481811

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480689

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.03910	U	0.226	0.226	1.00	0.418	pCi/L	08/25/20 12:41	09/09/20 13:26	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*40 - 110*	*08/25/20 12:41*	*09/09/20 13:26*	*1*
Y Carrier	*86.0*		*40 - 110*	*08/25/20 12:41*	*09/09/20 13:26*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-480689/1-A
Matrix: Water
Analysis Batch: 481799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480689

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			7.82	10.69	*	1.30	1.00	0.596	pCi/L	137	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.1*		*40 - 110*
Y Carrier	*76.6*		*40 - 110*

Lab Sample ID: LCSD 160-480689/2-A
Matrix: Water
Analysis Batch: 481799

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 480689

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			7.82	9.539		1.19	1.00	0.634	pCi/L	122	75 - 125	0.46	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*86.1*		*40 - 110*
Y Carrier	*82.2*		*40 - 110*

Lab Sample ID: MB 160-481085/24-A
Matrix: Water
Analysis Batch: 482957

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 481085

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1718	U	0.210	0.210	1.00	0.347	pCi/L	08/28/20 17:17	09/18/20 12:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.6*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*
Y Carrier	*88.6*		*40 - 110*	*08/28/20 17:17*	*09/18/20 12:00*	*1*

Lab Sample ID: LCS 160-481085/1-A
Matrix: Water
Analysis Batch: 482946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 481085

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			7.80	8.379		1.05	1.00	0.503	pCi/L	107	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.1*		*40 - 110*
Y Carrier	*82.2*		*40 - 110*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-481085/2-A
Matrix: Water
Analysis Batch: 482946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 481085

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			7.80	7.434		0.978	1.00	0.518	pCi/L	95	75 - 125	0.47	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*82.9*		*40 - 110*
Y Carrier	*79.3*		*40 - 110*

Lab Sample ID: MB 160-481237/23-A
Matrix: Water
Analysis Batch: 481838

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 481237

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.006322	U	0.314	0.314	1.00	0.564	pCi/L	08/31/20 14:14	09/09/20 13:16	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.8*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:16*	*1*
Y Carrier	*84.5*		*40 - 110*	*08/31/20 14:14*	*09/09/20 13:16*	*1*

Lab Sample ID: LCS 160-481237/1-A
Matrix: Water
Analysis Batch: 481801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 481237

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			10.4	10.82		1.39	1.00	0.707	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.1*		*40 - 110*
Y Carrier	*82.6*		*40 - 110*

Lab Sample ID: MB 160-482400/9-A
Matrix: Water
Analysis Batch: 483126

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 482400

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.266		0.458	0.473	1.00	0.620	pCi/L	09/14/20 10:14	09/21/20 11:53	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.5*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*
Y Carrier	*81.5*		*40 - 110*	*09/14/20 10:14*	*09/21/20 11:53*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-482400/1-A
Matrix: Water
Analysis Batch: 483126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 482400

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			10.4	12.18		1.46	1.00	0.526	pCi/L	117	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.0*		*40 - 110*
Y Carrier	*86.0*		*40 - 110*

Lab Sample ID: LCSD 160-482400/2-A
Matrix: Water
Analysis Batch: 483126

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 482400

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			10.4	13.89	*	1.69	1.00	0.690	pCi/L	134	75 - 125	0.54	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*70.9*		*40 - 110*
Y Carrier	*83.4*		*40 - 110*

Lab Sample ID: MB 160-483141/4-A
Matrix: Water
Analysis Batch: 484399

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 483141

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1677	U	0.434	0.435	1.00	0.752	pCi/L	09/21/20 14:11	09/30/20 12:43	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.9*		*40 - 110*	*09/21/20 14:11*	*09/30/20 12:43*	*1*
Y Carrier	*85.2*		*40 - 110*	*09/21/20 14:11*	*09/30/20 12:43*	*1*

Lab Sample ID: LCS 160-483141/1-A
Matrix: Water
Analysis Batch: 484399

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 483141

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			10.4	11.05		1.41	1.00	0.674	pCi/L	107	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.3*		*40 - 110*
Y Carrier	*80.4*		*40 - 110*

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

Job ID: 180-109846-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-483141/2-A
Matrix: Water
Analysis Batch: 484399

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 483141

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			10.4	10.75		1.39	1.00	0.640	pCi/L	104	75 - 125	0.11	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*80.7*		*40 - 110*
Y Carrier	*78.9*		*40 - 110*

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Prep Batch: 480640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total/NA	Water	PrecSep-21	
180-109846-2	ARGWC-15	Total/NA	Water	PrecSep-21	
180-109846-3	ARGWC-16	Total/NA	Water	PrecSep-21	
180-109847-1	FB#1	Total/NA	Water	PrecSep-21	
180-109847-2	ARGWA-12	Total/NA	Water	PrecSep-21	
180-109847-3	ARGWA-13	Total/NA	Water	PrecSep-21	
180-109847-4	ARGWC-17	Total/NA	Water	PrecSep-21	
180-109848-1	ARGWC-10	Total/NA	Water	PrecSep-21	
180-109848-2	DUP-1	Total/NA	Water	PrecSep-21	
180-109848-3	ARGWC-9	Total/NA	Water	PrecSep-21	
MB 160-480640/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-480640/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 480651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109846-1	ARGWA-14	Total/NA	Water	PrecSep_0	
180-109846-2	ARGWC-15	Total/NA	Water	PrecSep_0	
180-109846-3	ARGWC-16	Total/NA	Water	PrecSep_0	
180-109847-1	FB#1	Total/NA	Water	PrecSep_0	
180-109847-2	ARGWA-12	Total/NA	Water	PrecSep_0	
180-109847-3	ARGWA-13	Total/NA	Water	PrecSep_0	
180-109847-4	ARGWC-17	Total/NA	Water	PrecSep_0	
180-109848-1	ARGWC-10	Total/NA	Water	PrecSep_0	
180-109848-2	DUP-1	Total/NA	Water	PrecSep_0	
180-109848-3	ARGWC-9	Total/NA	Water	PrecSep_0	
MB 160-480651/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-480651/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 480684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109850-1	ARGWA-5	Total/NA	Water	PrecSep-21	
180-109850-2	ARGWA-3	Total/NA	Water	PrecSep-21	
180-109850-3	ARGWC-7	Total/NA	Water	PrecSep-21	
180-109851-1	EB#2	Total/NA	Water	PrecSep-21	
180-109851-2	ARGWA-19	Total/NA	Water	PrecSep-21	
180-109851-3	ARGWA-20	Total/NA	Water	PrecSep-21	
180-109851-4	ARGWC-22	Total/NA	Water	PrecSep-21	
MB 160-480684/10-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-480684/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-480684/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 480689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109851-1	EB#2	Total/NA	Water	PrecSep_0	
MB 160-480689/10-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-480689/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-480689/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 481082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 481082 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-2	ARGWC-23	Total/NA	Water	PrecSep-21	
180-109918-3	DUP-2	Total/NA	Water	PrecSep-21	
180-109918-4	ARAMW-1	Total/NA	Water	PrecSep-21	
180-109918-5	ARAMW-2	Total/NA	Water	PrecSep-21	
180-109929-1	ARGWC-8	Total/NA	Water	PrecSep-21	
180-109929-2	ARGWC-18	Total/NA	Water	PrecSep-21	
180-109970-1	ARAMW-6	Total/NA	Water	PrecSep-21	
180-109970-2	ARGWC-21	Total/NA	Water	PrecSep-21	
MB 160-481082/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-481082/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-481082/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 481085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-1	FB#2	Total/NA	Water	PrecSep_0	
180-109918-2	ARGWC-23	Total/NA	Water	PrecSep_0	
180-109918-4	ARAMW-1	Total/NA	Water	PrecSep_0	
180-109918-5	ARAMW-2	Total/NA	Water	PrecSep_0	
180-109929-1	ARGWC-8	Total/NA	Water	PrecSep_0	
180-109929-2	ARGWC-18	Total/NA	Water	PrecSep_0	
180-109970-1	ARAMW-6	Total/NA	Water	PrecSep_0	
180-109970-2	ARGWC-21	Total/NA	Water	PrecSep_0	
MB 160-481085/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-481085/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-481085/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 481232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109930-1	EB#1	Total/NA	Water	PrecSep-21	
180-109930-2	ARAMW-3	Total/NA	Water	PrecSep-21	
180-109930-3	ARAMW-4	Total/NA	Water	PrecSep-21	
MB 160-481232/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-481232/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 481237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109930-1	EB#1	Total/NA	Water	PrecSep_0	
180-109930-2	ARAMW-3	Total/NA	Water	PrecSep_0	
180-109930-3	ARAMW-4	Total/NA	Water	PrecSep_0	
MB 160-481237/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-481237/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 482400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109850-1	ARGWA-5	Total/NA	Water	PrecSep_0	
180-109850-2	ARGWA-3	Total/NA	Water	PrecSep_0	
180-109850-3	ARGWC-7	Total/NA	Water	PrecSep_0	
180-109851-2	ARGWA-19	Total/NA	Water	PrecSep_0	
180-109851-3	ARGWA-20	Total/NA	Water	PrecSep_0	
180-109851-4	ARGWC-22	Total/NA	Water	PrecSep_0	
MB 160-482400/9-A	Method Blank	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 482400 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-482400/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-482400/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 483141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-109918-3	DUP-2	Total/NA	Water	PrecSep_0	
MB 160-483141/4-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-483141/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-483141/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

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Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, EGiller, AShoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com	COC No:
Company: GA Power			Page:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:		Job #:
City: Atlanta	TAT Requested (days):		
State, Zip: GA, 30308			
Phone: 404-506-7116(Tel)	PO #:		
Email: SCS Contacts	WO #:		
Project Name: CCR - Plant Arkwright	Project #: 18020201		
Site: Georgia	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	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)	App III metals(6020) + Hg(7470A)	Radium 226/228 (9315/9320)	Fluoride(300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H		
ARGWA-14	8/19/20	1355	G	W			X	X	X	3	pH = 6.62
ARGWC-15	↓	1005	G	W			X	X	X	3	pH = 6.47
ARGWC-16	↓	1205	G	W			X	X	X	3	pH = 5.24

180-109846 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
Daniel K Howard	8/19/20 / 1815		Dulles Watson	8-20-20 9:30	ETA
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

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Pittsburgh, PA 15238
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Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, EGullen, AShoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page: 1 of 1
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days): Standard			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

Analysis Requested

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)	App III metals 6020B + Hg 7470A	Fluoride 300_ORGFM_28D	Radium 226/228 (9315/9320)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	I	D	X	
FB#1	8/18/20	1100	G	W			1	1	1	3	
ARGWA-12		1300	G	W			1	1	1	3	pH = 6.48
ARGWA-13		1450	G	W			1	1	1	3	pH = 6.15
ARGWC-17		1445	G	W			1	1	1	3	pH = 5.07

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:

180-109847 Chain of Custody

Possible Hazard Identification
[X] *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* [X] *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: Daniel L Howard	Date/Time: 8/18/20 / 1730	Company: WoodEIS	Received by: Donna Alston	Date/Time: 8-20-20 930	Company: ETA
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

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Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, EGuillen, AShersta	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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	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)	App IV metals (6020) + Hg (7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D	H	X	
~~AGGW~~ ARGWC-10	8/19/20	1135	G	W			X	X	X	3	pH = 7.06
DUP-1	↓	—	G	W			X	X	X	3	pH = 7.06
ARGWC-9	↓	1425	G	W			X	X	X	3	pH = 7.21

180-109848 Chain of Custody

Possible Hazard Identification: [X] 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 [X] 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: Daniel L Howard	Date/Time: 8/19/20 / 1815	Company:	Received by: [signature]	Date/Time: 8-20-20 9:30	Company: ETAPH
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

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Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, EGuiller, AStoredahl	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page: 1 of 1
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Atlanta	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			Other:
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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)	App IV metals(6020B)+Hg 7470A	Fluoride 300.0_ORGPM_28D	Radium 226/228(9315/9320)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
ARGWA-5	8/18/20	1135	G	W			1	1	1	3	pH = 6.18
ARGWA-3	↓	1320	G	W			1	1	1	3	pH = 6.47
ARGWC-7		1525	G	W			1	1	1	3	pH = 6.70

180-109850 Chain of Custody

Possible Hazard Identification
X 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 X 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:
Daniel K Howard	8/18/20/1730	Wood E&IS			
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

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Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward, EGuilka, ASheredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Oil/waste, Air, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	App IV metals (6020) + Hg (7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Fluoride, Chloride, Sulfate 300.0	TDS 2540C	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H	H	H		
EB#2	8/19/20	0915	G	W			X	X		X	X	3	
ARGWA-19		1056	G	W			X	X	X			3	pH = 6.25
ARGWA-20		1344	G	W			X	X	X			3	pH = 6.16
ARGWC-22		1532	G	W			X	X		X	X	3	pH = 6.21

180-109851 Chain of Custody

Possible Hazard Identification
[X] 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 [X] 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
Daniel Howard	8/19/20 / 1815			8-20-20	EHPT
Relinquished by	Date/Time	Company	Received by	Date/Time 7:30	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:

Ver: 01/16/2019

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Chain of Custody Record

244- ATLANTA

Client Information	Sampler: DHoward	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Atlanta	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: GA, 30308	PO #:			
Phone: 404-506-7116(Tel)	WO #:			Other:
Email: SCS Contacts	Project #: 18020201			
Project Name: CCR - Plant Arkwright	SSOW#:			
Site: Georgia				

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)	Preservation Code:	Total Number of containers	Special Instructions/Note:
FB#2	8/20/20	1045	G	W			D	3	
ARGWC-23		1215	G	W			D	3	pH = 6.33
DUP-2		--	G	W			D	3	pH = 6.33
ARAMW-1		1436	G	W			H	3	pH = 6.09
ARAMW-2		1635	G	W			H	3	pH = 5.99

App IV + Hg (6020B) + Hg (7470A); Radium 226/228 (9315/9320); Chloride, Sulfate, Fluoride (300); TDS 2540C; Fluoride (300)

180-109918 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological	[ ] Return To Client [X] 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
David L Howard	8/20/20 1840	Wood	Dellie Watson	8-21-20 7:45	EHHH
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:

Ver. 01/16/2019

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Chain of Custody Record

244- ATLANTA

eurofins

Client Information	Sampler: Ever Guillen, A Shoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

Analysis Requested

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)	App III metals + Hg (6020B/7470A) Tot	Radium 226/228 (9315 R320)	Fluoride (300)	App IV metals + Hg (6020B/7470A) Diss	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H	D		
ARGWC-8	8/20/20	1035	G	W			X	X	X		3	pH = 6.34
ARGWC-18	8/20/20	1705	G	W	Y		X	X	X	X	4	pH = 6.43

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:

180-109929 Chain of Custody

Possible Hazard Identification
[X] 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 [X] 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: Daniel R Howard	Date/Time: 8/20/20 / 1840	Company: Wood	Received by: Debbie Watson	Date/Time: 8-21-20 945	Company: ETA Ptt
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

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Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

244- ATLANTA

Client Information	Sampler: Ever Guillen, Andrew Sheridan	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308	PO #:			
Phone: 404-506-7116(Tel)	WO #:			
Email: SCS Contacts	Project #: 18020201			
Project Name: CCR - Plant Arkwright	SSOW#:			
Site: Georgia				

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)	App IV metals + Hg (6020B/7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H		
EB#1	8/20/20	0930	G	W			X	X	X		
ARAMW-3		1445	G	W			X	X	X		pH = 6.24
ARAMW-4		1145	G	W			X	X	X		pH = 5.77

180-109930 Chain of Custody

Possible Hazard Identification
[X] 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 [X] 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:
David L Howard	8/20/20 / 1840	Wood		8-21-20	EHAP
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 945	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

244- ATLANTA

Client Information	Sampler: Howard, AShoredits	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page: 1 of 1
Company: GA Power		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE	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: Atlanta	TAT Requested (days): Standard			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			Other:
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Oil, Tissue, Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	App IV metals + Hg (6020A/7470A)	Radium 226/228 (9315/9320)	Fluoride (300)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	H		
ARAMW-6	8/21/20	0945	G	W			X	X	X	3	pH=6.32
ARGWC-21	↓	1036	G	W			X	X	X	3	pH=5.89

180-109970 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client X Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

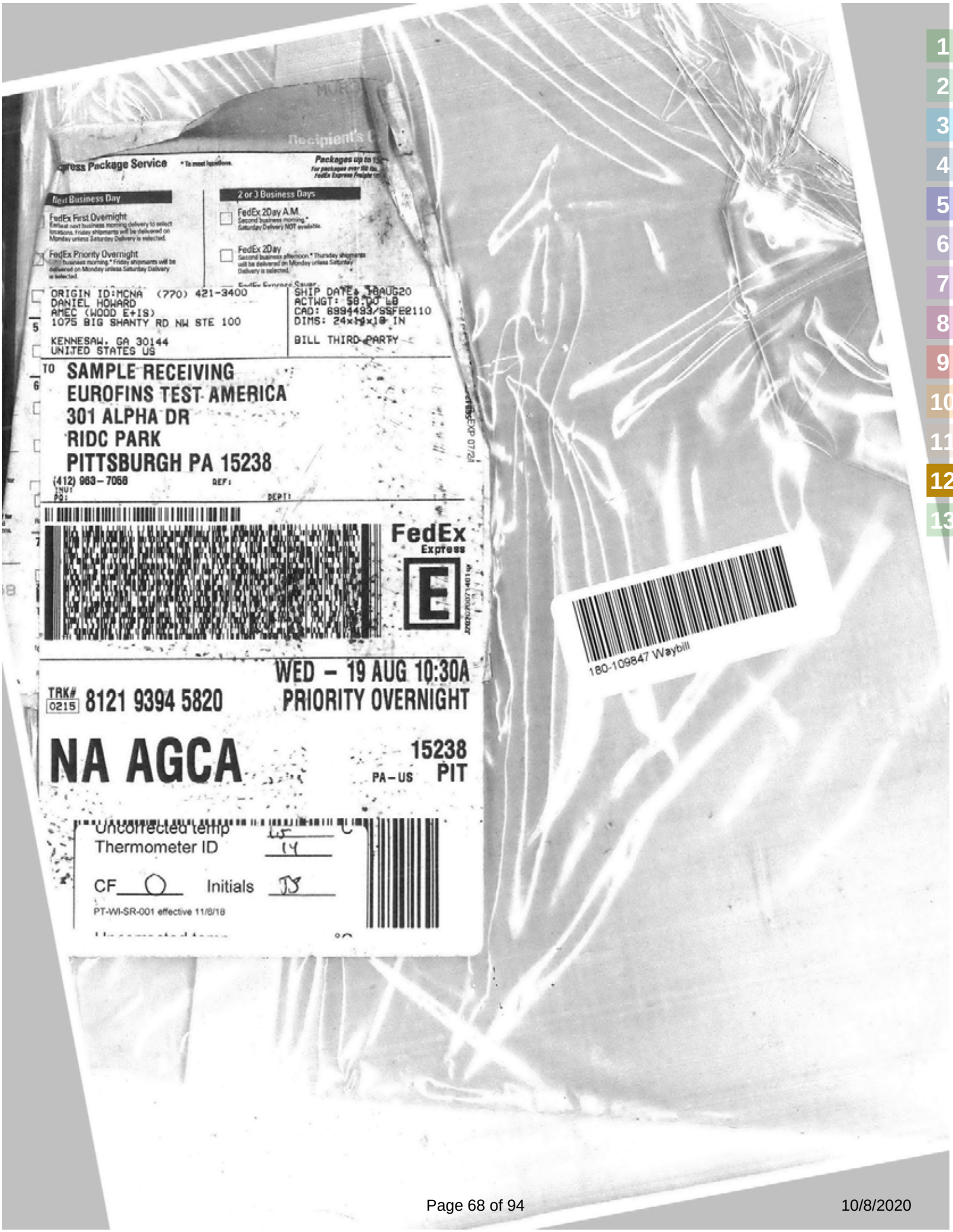
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Daniel L Howard	Date/Time: 8/21/20 1315	Company	Received by: Daniel Watson
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Date/Time	Company
8-22-20 10:00	ETA Pgh
Date/Time	Company
Date/Time	Company

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

Ver: 01/16/2019


Recipient's Copy
94 5359
0215
Express Package Service
Next Business Day
FedEx First Overnight
FedEx Priority Overnight
ORIGIN ID:MCNA (770) 421-3
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE
KENNESAW, GA 30144
UNITED STATES US
SAMPLE RECIEVIN
EUROFINS TEST A
301 ALPHA DR
PITTSBURGH PA
(412) 963-7058
Hold Weekday
Hold Saturday
STE 100
GA
ZIP 30144-3
Phone
Uncorrected Temp
Thermometer ID
CF 0
Initials
PT-WI-SR-001 effective 11/8/18
180-109846 Waybill


Express Package Service
Next Business Day
FedEx First Overnight
FedEx Priority Overnight
2 or 3 Business Days
FedEx 2Day A.M.
FedEx 2Day
ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 18AUG20
ACTWGT: 50.00 LB
CAD: 6994493/SSFE2110
DIMS: 24x14x10 IN
BILL THIRD PARTY
TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF:
DEPT:
FedEx Express
TRK# 0215 8121 9394 5820
WED - 19 AUG 10:30A
PRIORITY OVERNIGHT
NA AGCA
15238
PA-US PIT
Uncorrected temp
Thermometer ID
CF
Initials
PT-WI-SR-001 effective 11/8/18
180-109847 Waybill

Express Package Service

Next Business Day

FedEx First Overnight

FedEx Priority Overnight

FedEx Standard Overnight

2 or 3 Business Days

FedEx 2Day A.M.

FedEx 2Day

FedEx Express Saver

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 19AUG20
ACTWGT: 58.65 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN
BILL THIRD PARTY

TO SAMPLE RECIEVING
EUROFINS TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-7058

FedEx Express

A
5360
08.20

TRK# 0215 8121 9394 5360

THU - 20 AUG 10:30A
PRIORITY OVERNIGHT
DSR
15238
PA-US PIT

NA AGCA

Uncorrected temp
Thermometer ID
CF 0
Initials

PT-WI-SR-001 effective 11/9/18

05884

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 18AUG20
ACTWGT: 42.15 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7068 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0215 8121 9394 5830

WED - 19 AUG 10:30A
PRIORITY OVERNIGHT

NA AGCA

AHS
15238
PA-US PIT

Uncorrected temp 21 °C
Thermometer ID 14
CF 0 Initials JS
PT-WI-SR-001 effective 11/8/18

180-109950 Waybill

Align Open End of FedEx Pouch Here

FT 97
1
10:30 A
5841
08.20
FZ

180-109851 Waybill

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC FW(WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 19AUG20
ACTWGT: 57.45 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO SAMPLE RECIEVING
EUROFINS TEST AMERICA
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-7058 REF:
INV:
PO:
DEPT:

FedEx Express

TRK# 0215 8121 9394 5841

THU - 20 AUG 10:30A
PRIORITY OVERNIGHT
DSR
15238
PIT

NA AGCA

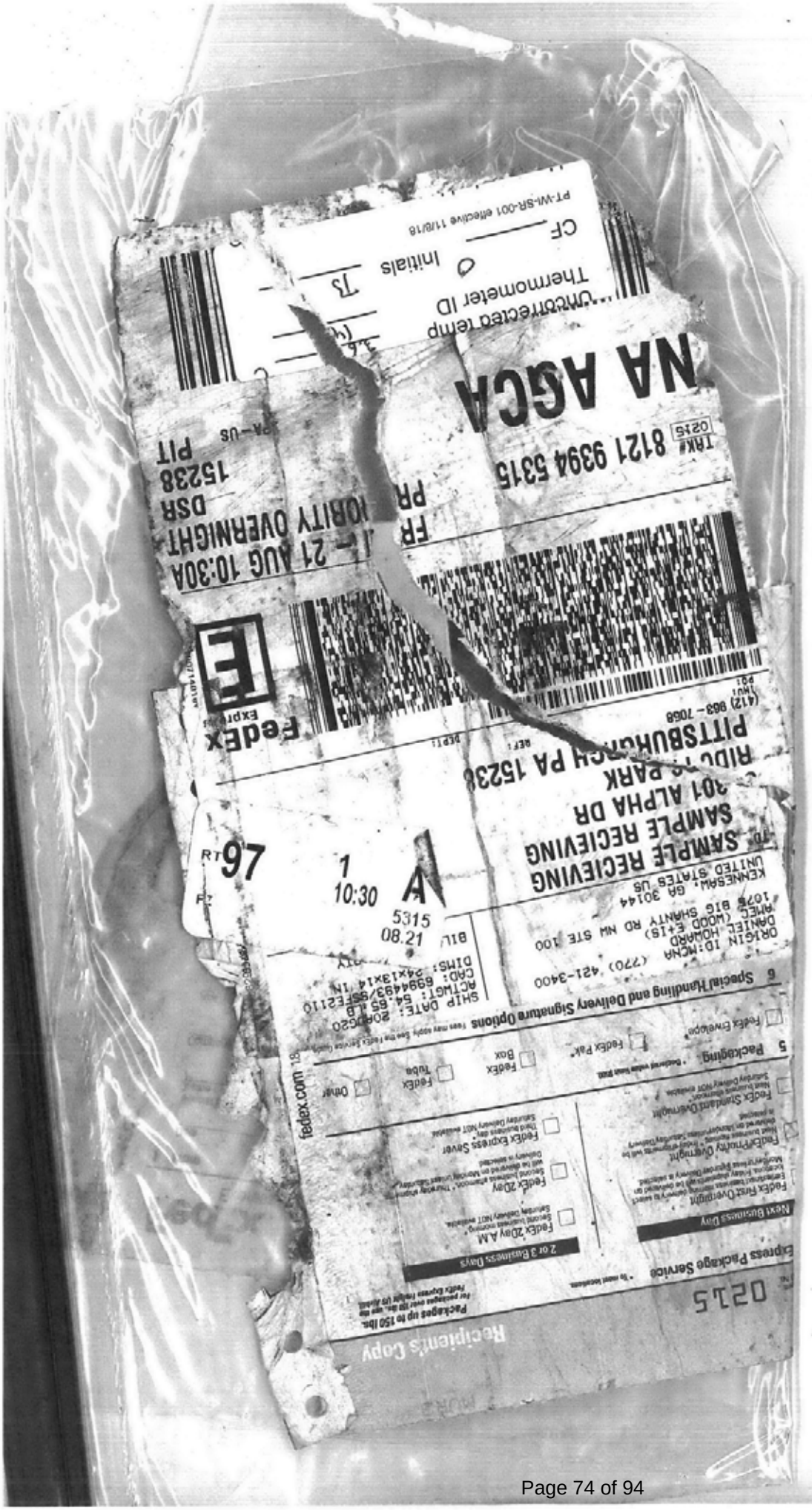
PA-US

Uncorrected temp 1.6 C
Thermometer ID 14
CF 0 Initials JB

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

NA AGCA
Uncorrected temp
Thermometer ID
Initials
CF
Pt-WI-SR-001 effective 11/8/18
TRK# 8121 9394 5326
0215
FRI - 21 AUG 10:30A
PRIORITY OVERNIGHT
DSR
15238
PIT
PA-US
FedEx
Express
(412) 863-7068
INV:
PO:
DEPT:
10 SAMPLE RECIEVING
SAMPLE RECIEVING
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+I&)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 20AUG20
ACTWGT: 81.15 LB
CAD: 6994493/SSFE2110
DIMS: 24x14x13 IN
BILL THIRD PARTY
5 Packaging
4 Express Package Service
Next Business Day
FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight
FedEx Envelope
FedEx Pak
Other
0215
180-109918 Waybill


FedEx Tracking Number 8121 9394 5337
Phone 770 421-3349
SHANTY RD NW STE 100
State GA ZIP 30144-3652
Phone 412 963-7058
Hold Weekday
Hold Saturday
State PA ZIP 15238
8121 9394 5337
Recipient's Copy
Express Package Service
Next Business Day
FedEx First Overnight
ORIGIN ID:MCNR (770) 421-340
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 1
KENNESAW, GA 30144
UNITED STATES US
SAMPLE RECIEVING
SAMPLE RECIEVING
301 ALPHA DR
RIDC PARK
(412) 963-
180-109929 Waybill
FedEx Express
FRI - 21 AUG 10:30A
PRIORITY OVERNIGHT
TRK# 8121 9394 5337
0215
NA AGCA
15238
PIT
Uncorrected Temp
Thermometer ID
Initials
CF 0
PT-WI-SR-001 effective 11/8/18



180-109930 Waybill

FedEx
Express
FedEx
SATURDAY 12:00P
PRIORITY OVERNIGHT
DSR
8121 9394 5348
XO AGCA
15238
PA-US
PIT
Uncorrected Temp
Thermometer ID
Initials
CF
PITTSBURGH PA 15238
EUROFINS TEST AMERICA
301 ALPHA DR
EUROFINS TEST AMERICA
1079 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
BILL THIRD PARTY
DIMS: 24x15x15 IN
CAD: 6894493/SSFE2110
RCTWGT: 94.00 LB
SHIP DATE: 21AUG20
180-10897O Wayb

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 America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-408215.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin: Georgia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-109846-2
Address: 13715 Rider Trail North,	Due Date Requested: 9/23/2020			
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 Arkwright	Project #: 18020201			
Site: Arkwright	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)	9315_Ra226/PrecSep_21 Radium 226	9320_Ra228/PrecSep_0 Radium 228	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
ARGWA-14 (180-109846-1)	8/19/20	13:55 Eastern		Water			X	X	X	1	
ARGWC-15 (180-109846-2)	8/19/20	10:05 Eastern		Water			X	X	X	1	
ARGWC-16 (180-109846-3)	8/19/20	12:05 Eastern		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

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		8/21/20 1700		FedEx		
2	FedEx					
3					8/22/20 08:30	ETASTL

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

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-109846-2

Login Number: 109846
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: 180-109846-2

Login Number: 109846
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/22/20 12:41 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.	N/A	
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: 180-109846-2

Login Number: 109847
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: 180-109846-2

Login Number: 109847
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/22/20 12:41 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.	N/A	
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: 180-109846-2

Login Number: 109848
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: 180-109846-2

Login Number: 109848
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/22/20 12:41 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.	N/A	
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: 180-109846-2

Login Number: 109850
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: 180-109846-2

Login Number: 109850
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/22/20 12:41 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.	N/A	
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: 180-109846-2

Login Number: 109851
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: 180-109846-2

Login Number: 109851
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/22/20 12:41 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.	N/A	
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: 180-109846-2

Login Number: 109918
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: 180-109846-2

Login Number: 109918
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/25/20 02:54 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.	N/A	
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: 180-109846-2

Login Number: 109929
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: 180-109846-2

Login Number: 109929
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/25/20 02:54 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.	N/A	
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: 180-109846-2

Login Number: 109930
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: 180-109846-2

Login Number: 109930
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/25/20 02:54 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.	N/A	
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: 180-109846-2

Login Number: 109970
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: 180-109846-2

Login Number: 109970
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 08/25/20 02:54 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.	N/A	
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	

Georgia Power Site Sampling Data (GW)

Site Name : Plant Arkwright AP2 — Date : 8/19-21/2020

Well ID	Sample Date	Sample Time	Field Blank	Equipment Blank	Field Dup.	Additional Comments
EB#2	8/19/20	0915		EB#2		Equip Blank of tubing used with peristaltic pump
ARGWA-19	8/19/20	1056				
ARGWA-20	8/19/20	1344				
ARGWC-22	8/19/20	1532				
FB#2	8/20/20	1045	FB#2			Field Blank taking at Ash Pond 2
ARGWC-23	8/20/20	1215				
DUP-2	8/20/20	—			ARGWC-23	Duplicate of ARGWC-23 (DUP-2)
ARAMW-1	8/20/20	1436				
ARAMW-2	8/20/20	1635				
ARGWC-21	8/21/20	1036				

Additional comments : Field Blank FB#2 was taken using ASTM Type I/II water, RICCAB-and Lot # 2002A53, Exp 8/2021. Equip Blank EB#2 was collected From the HDPE Tubing used with the peristaltic pump; Tubing Lot# 12759-05 Reagent water used ASTM Type I/II RICCA Brand Lot# 2002A53, Exp 8/2021.

Date: 8/18/20
Time: 0900
Prepared By: Daniel Howard
Checked By:

Wood.
Project No. 6122201429

Pine Sonde ID:
Pine Handset ID: 407447
Battery Voltage %: 60

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date: ___ Time: ___	
Current Air Temperature °C (meter reading):		23.4
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	750.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	7.97
DO concentration after Calibration (mg/L):		
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	95%
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0534

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 0GE438 5/21	1.413
Temperature (°C)		24.9
Reading before Calibration (mS/cm)		1.417
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9975

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 9GK721 11/21	7.47
pH **7.0** value after calibration:	25.5°C	7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		"28.0
pH 10 value before calibration:	Lot 9GL648 12/21	9.37
pH 10 value after calibration:	25.3°C	10.00
pH 10 mV **(range is -130 to -230 mV)**:		"139.9
pH **4.0** value before calibration:	Lot 0GD046 4/22	5.79
pH **4.0** value after calibration:	25.2°C	4.8
pH **4.0** mV **(range is 130 to 230 mV)**:		71.8

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 0GD520 1/21	25.1
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	229
Reading before calibration (mV):		198.2
Reading after calibration (mV):		229

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A9254, 12/20	Before Cal:	After Cal:	20.2
100 NTU Turbidity Standard Lot A9213, 11/20	Before Cal:	After Cal:	100
800 NTU Turbidity Standard Lot A9241, 12/20	Before Cal:	After Cal:	796
10 NTU Turbidity Check STD Lot A9213, 11/20	Before Cal:	After Cal:	10.1
<0.1 NTU Turbidity Check STD Lot A0037, 2/22	Before Cal:	After Cal:	0.19
CALIBRATION SUCCESSFUL?			

Hach 2100Q ID: 031426

Date: 8/19/20
Time: 0825
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: _____
Pine Handset ID: 407447
Battery Voltage %: 55

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date: ___ Time: ___	
Current Air Temperature °C (meter reading):		25.4
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	749.96
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.71
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	95.4
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0492

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 0GE438 5/21	1.413
Temperature (°C)		27.6
Reading before Calibration (mS/cm)		1.413
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9999

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 9GK721 11/21	7.49
pH 7.0 value after calibration:	27.5°C	7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-28.7
pH 10 value before calibration:	Lot 9GL648 12/21	9.40
pH 10 value after calibration:	27.1°C	10.00
pH 10 mV **(range is -130 to -230 mV)**:		-141.0
pH 4.0 value before calibration:	Lot 0GD046 4/22	5.72
pH 4.0 value after calibration:	26.9°C	4.8
pH 4.0 mV **(range is 130 to 230 mV)**:		74.9

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 0GD520 1/21	26.8
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	227
Reading before calibration (mV):		193.2
Reading after calibration (mV):		227

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A9254, 12/20	Before Cal:	After Cal:	19.9
100 NTU Turbidity Standard Lot A9213, 11/20	Before Cal:	After Cal:	100
800 NTU Turbidity Standard Lot A9241, 12/20	Before Cal:	After Cal:	800
10 NTU Turbidity Check STD Lot A9213, 11/20	Before Cal:	After Cal:	10.2
<0.1 NTU Turbidity Check STD Lot A0037, 2/22	Before Cal:	After Cal:	0.24
CALIBRATION SUCCESSFUL?			

Hach 2100 Q ID: 031426

Date: 8/20/20
Time: 0815
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: 369555
Pine Handset ID: ~~369956~~
Battery Voltage %: 50

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes_____ No_____ Date:_____ Time:_____	
Current Air Temperature °C (meter reading):		21.8
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	750.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		8.46
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	97.7
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0238

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot OGE438 5/21	1.413
Temperature (°C)		25.1
Reading before Calibration (mS/cm)		1.409
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		1.0036

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 9GK721 11/21	7.82
pH 7.0 value after calibration:	24.6°C	7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-48.5
pH 10 value before calibration:	Lot 9GL648 12/21	10.69
pH 10 value after calibration:	24.6°C	10.00
pH 10 mV **(range is -130 to -230 mV)**:		-218.5
pH 4.0 value before calibration:	Lot OGD046 4/22	4.94
pH 4.0 value after calibration:	24.6°C	4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		122.6

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot OGD520 1/21	24.7
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	229
Reading before calibration (mV):		189.4
Reading after calibration (mV):		229

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A9254, 12/20	Before Cal:	After Cal:	20.1
100 NTU Turbidity Standard Lot A9213, 11/20	Before Cal:	After Cal:	100
800 NTU Turbidity Standard Lot A9241, 12/20	Before Cal:	After Cal:	808
10 NTU Turbidity Check STD Lot A9213, 11/20	Before Cal:	After Cal:	9.92
<0.1 NTU Turbidity Check STD Lot A0037, 2/22	Before Cal:	After Cal:	0.26
CALIBRATION SUCCESSFUL?			

Hach 2100Q ID: 031426

Date: 8/21/20
Time: 0815 0815
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: _____
Pine Handset ID: 369555
Battery Voltage %: 50

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes____ No ✓ Date:____ Time:____	
Current Air Temperature °C (meter reading):		23.5
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	749.6
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		8.16
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	97.5
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot OGE438 1.413 5/21	24.0
Temperature (°C)		24.0
Reading before Calibration (mS/cm)		1.379
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		1.0249

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 9GK721 11/21 24.1°C	7.78
pH **7.0** value after calibration:		7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-46.2
pH 10 value before calibration:	Lot 9GL648 12/21 24.2	10.62
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-215.5
pH **4.0** value before calibration:	Lot OGD046 4/22 24.0	4.93
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		123.2

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot OGD520 1/21	24.0
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	230
Reading before calibration (mV):		191.7
Reading after calibration (mV):		230

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A9254, 12/20	Before Cal:	After Cal:	20.2
100 NTU Turbidity Standard Lot A9213, 11/20	Before Cal:	After Cal:	99.8
800 NTU Turbidity Standard Lot A9241, 12/20	Before Cal:	After Cal:	792
10 NTU Turbidity Check STD Lot A9213, 11/20	Before Cal:	After Cal:	10.1
<0.1 NTU Turbidity Check STD Lot A0037, 2/22	Before Cal:	After Cal:	0.27
CALIBRATION SUCCESSFUL?			

Hach 2100 QID: 031426

Date: 08/18/20
Time: 08:50
Prepared By: A. SHOREDITS
Checked By: _____

Wood.
Project No. 6122201429

SMARTROLL
iPod Pine Sonde ID: 25467
Pine Handset ID: 030616
Battery Voltage %: 90
Hach 2100Q S/N 12110C021737
PINE #022853

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes X No Date: 8/18 Time: 10:35	
Current Air Temperature °C (meter reading):		
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		29.89 in Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	759.206 mmHg (-4754/100 x 2.54)
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		= 10.6 => 748.606 mmHg
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	986.7%
DO concentration after Calibration (mg/L):		99.9% 7.76 mg/L
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# ORE438 Exp. 05/21	1.413
Temperature (°C)		22.90
Reading before Calibration (mS/cm)		1.36
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot# 9GK721 Exp. 11/21	7.36 A.S 27 08/18/20
pH **7.0** value after calibration:		7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-42.7 @23.3°C
pH 10 value before calibration:	Lot# 9GL648 Exp. 12/21	10.34 A.S. 08/18/20
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-206.3
pH **4.0** value before calibration:	Lot# 09D046 Exp. 04/22	4.80 @23.3°C
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		181.1 A.S 08/18/20

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 240.0mV)		
Calibration Temperature (°C):	Lot# 09D520 Exp. 01/21	23.7
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		242.7
Reading after calibration (mV):		240.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.

20 NTU Turbidity Standard	Lot# A0113	Exp 07/21	Before Cal: 20.3	After Cal:	20.9
100 NTU Turbidity Standard	Lot# A9121	Exp. 08/20	Before Cal: 98.3	After Cal:	98.1
800 NTU Turbidity Standard	Lot# A0111	Exp 07/21	Before Cal: 853	After Cal:	862
10 NTU Turbidity Check STD	Lot# A9213	Exp. 11/20	Before Cal: 10.3	After Cal:	9.54
_____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					YES

Date: 08/19/20
Time: 06:30
Prepared By: A. SHOREDITS
Checked By: —

Wood.
Project No. 6122201429

SMARTROLL
iPad Pine Sonde ID: 25467
Pine Handset ID: 030616
Battery Voltage %: 90
Hach 2100Q S/N 12110C021737
PINE # 022853

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✗ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		29.85 in Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	9.06 (105.6%)
DO concentration after Calibration (mg/L):		8.53 (99.9%)
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# 09E438 Exp. 05/21	1.413
Temperature (°C)		21.75
Reading before Calibration (mS/cm)		1.410
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot# 99K721 Exp. 11/21	7.05 (21.80°C)
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-36.8
pH 10 value before calibration:	Lot# 99L648 Exp. 12/21	9.80 (21.80°C)
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-205.8
pH 4.0 value before calibration:	Lot# 09GD046 Exp. 02/22	4.10 (21.85°C)
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		132.2

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 240.0mV)		
Calibration Temperature (°C):	Lot # 09D520 Exp. 01/21	21.80
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		243.2
Reading after calibration (mV):		240.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**						
20 NTU Turbidity Standard	Lot# A9113	Exp 07/21	Before Cal:	20.3	After Cal:	20.5
100 NTU Turbidity Standard	Lot# A9121	Exp 08/20	Before Cal:	100	After Cal:	101
800 NTU Turbidity Standard	Lot# A0111	Exp. 07/21	Before Cal:	789	After Cal:	798
10 NTU Turbidity Check STD	Lot# A9213	Exp. 11/20	Before Cal:	9.84	After Cal:	9.38
____ NTU Turbidity Check STD			Before Cal:		After Cal:	
CALIBRATION SUCCESSFUL?						YES

Date: 08/20/20
Time: 08:05
Prepared By: A. SHOREDITS
Checked By: —

Wood.
Project No. 6122201429

SMARTROLL
iPod Pine ~~Sonde~~ ID: 25467
Pine ~~Handset~~ ID: 030616
Battery Voltage %: 100
Hach 2100Q S/N 12110C021737
PINE # 022853

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✗ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		21.31
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		29.89 in Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.71 (99.5%)
DO concentration after Calibration (mg/L):		8.73 (100.0%)
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 09F438 Exp. 05/21	1.413
Temperature (°C)		22.11
Reading before Calibration (mS/cm)		1.420
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH			
pH **7.0** value before calibration:	Lot # 99K721 Exp. 11/21	6.89	22.15°C
pH **7.0** value after calibration:		7.00	
pH **7.0** mV **(range is -50 to +50 mV)**:		-36.1	
pH 10 value before calibration:	Lot # 99L648 Exp. 12/21	9.98	22.2°C
pH 10 value after calibration:		10.00	
pH 10 mV **(range is -130 to -230 mV)**:		-206.0	
pH **4.0** value before calibration:	Lot # 09D046 Exp. 04/22	4.03	22.3°C
pH **4.0** value after calibration:		4.00	
pH **4.0** mV **(range is 130 to 230 mV)**:		181.6	

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std. 240.0 mV)		
Calibration Temperature (°C):	Lot # 09D520 Exp. 01/21	22.06
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		239.4
Reading after calibration (mV):		240.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.					
20 NTU Turbidity Standard	Lot # A0113	Exp 07/21	Before Cal: 19.0	After Cal:	18.8
100 NTU Turbidity Standard	Lot # A9121	Exp 08/20	Before Cal: 97.8	After Cal:	96.1
800 NTU Turbidity Standard	Lot # A0111	Exp. 07/21	Before Cal: 789	After Cal:	796
10 NTU Turbidity Check STD	Lot # A9213	Exp. 11/20	Before Cal: 9.15	After Cal:	10.4
____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					YES

Date: 08/21/2020
Time: 06:00
Prepared By: A. SHOREDITS
Checked By: —

Wood.
Project No. 6122201429

SMARTROLL
Pine Sonde ID: 25467
iPod Pine Handset ID: 030616
Battery Voltage %: 100
Hach 2100Q S/N 12110C021737
PINE# 022853

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes____ No X Date:____ Time:____	
Current Air Temperature °C (meter reading):		
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		29.88 in Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.63 99.5%
DO concentration after Calibration (mg/L):		8.63 100.0%
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	—
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	—

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# 0GE438 Exp 05/21	1.413
Temperature (°C)		21.10
Reading before Calibration (mS/cm)		1.420
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH			
pH **7.0** value before calibration:	Lot# 9GK721	Exp 11/21	6.99 21.60°C
pH **7.0** value after calibration:			7.00
pH **7.0** mV **(range is -50 to +50 mV)**:			-36.9
pH 10 value before calibration:	Lot # 9GL648	Exp 12/21	— 21.67°C
pH 10 value after calibration:			10.00
pH 10 mV **(range is -130 to -230 mV)**:			-207.2
pH **4.0** value before calibration:	Lot # 0GD046	Exp 04/22	— 21.60°C
pH **4.0** value after calibration:			4.00
pH **4.0** mV **(range is 130 to 230 mV)**:			128.7

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 240.0 mV)		
Calibration Temperature (°C):	Lot# 0GD520 Exp 01/21	22.60
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		241.0
Reading after calibration (mV):		240.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.					
20 NTU Turbidity Standard	Lot# A0113	Exp 07/21	Before Cal: 19.5	After Cal:	20.0
100 NTU Turbidity Standard	Lot# A9121	Exp 08/20	Before Cal: 98.6	After Cal:	99.0
800 NTU Turbidity Standard	Lot# A0111	Exp 07/21	Before Cal: 791	After Cal:	800
10 NTU Turbidity Check STD	Lot# A9213	Exp 11/20	Before Cal: 9.77	After Cal:	9.99
____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					YES

Date: 8-18-20
Time: 935
Prepared By: Ever Guillen
Checked By:

Wood.
Project No. 6122201429

Pine Sonde ID: 30666
Pine Handset ID: 30618
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		23.11
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	750.9
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.61
DO concentration after Calibration (mg/L):		7.88
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	-
DO Charge (DO ch):	Acceptable Range is 25 to 75	-
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	-

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		23.1
Reading before Calibration (mS/cm)		1526
Reading AFTER Calibration (mS/cm)		1.279
Conductivity Cell Constant (unitless):		-

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.56
pH **7.0** value after calibration:		7.0
pH **7.0** mV **(range is -50 to +50 mV)**:		-33.1
pH 10 value before calibration:		10.58
pH 10 value after calibration:		10.0
pH 10 mV **(range is -130 to -230 mV)**:		-212.8
pH **4.0** value before calibration:		4.88
pH **4.0** value after calibration:		4.0
pH 4.0 mV **(range is 130 to 230 mV)**:		125.6

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		23.8
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	240.0
Reading before calibration (mV):		198.9
Reading after calibration (mV):		231.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
10 NTU Turbidity Standard	Before Cal:	9.19	After Cal:	9.53
20 NTU Turbidity Standard	Before Cal:	20.4	After Cal:	19.7
100 NTU Turbidity Standard	Before Cal:	100	After Cal:	99.8
800 NTU Turbidity Check STD	Before Cal:	796	After Cal:	796
10 NTU Turbidity Check STD	Before Cal:	9.50	After Cal:	9.69
CALIBRATION SUCCESSFUL?				YES

Date: 8-19-20
Time: 0838
Prepared By: EVER GUILLEN
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: 30666
Pine Handset ID: 30618
Battery Voltage %: _____

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		23.21
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	750.1
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.43
DO concentration after Calibration (mg/L):		7.95
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	-
DO Charge (DO ch):	Acceptable Range is 25 to 75	-
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	-

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		24.0
Reading before Calibration (mS/cm)		1.522
Reading AFTER Calibration (mS/cm)		1.279
Conductivity Cell Constant (unitless):		-

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.78
pH **7.0** value after calibration:		7.0
pH **7.0** mV **(range is -50 to +50 mV)**:		-38.2
pH 10 value before calibration:		10.79
pH 10 value after calibration:		10.0
pH 10 mV **(range is -130 to -230 mV)**:		-218.4
pH **4.0** value before calibration:		4.93
pH **4.0** value after calibration:		4.0
pH **4.0** mV **(range is 130 to 230 mV)**:		136.9

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		24.1
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	240.0
Reading before calibration (mV):		201.7
Reading after calibration (mV):		233.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
10 NTU Turbidity Standard	Before Cal:	9.57	After Cal:	9.98
20 NTU Turbidity Standard	Before Cal:	19.3	After Cal:	20.0
100 NTU Turbidity Standard	Before Cal:	98.0	After Cal:	100
800 NTU Turbidity Check STD	Before Cal:	796	After Cal:	799
____ NTU Turbidity Check STD	Before Cal:		After Cal:	
CALIBRATION SUCCESSFUL?				

Date: 8-20-20
Time:
Prepared By: Ever Guillen
Checked By:

Wood.
Project No. 6122201429

Pine Sonde ID: 306648
Pine Handset ID: 30618
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		19.33
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		–
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	7506
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	9.19
DO concentration after Calibration (mg/L):		8.62
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	–
DO Charge (DO ch):	Acceptable Range is 25 to 75	–
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	–

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		22.1
Reading before Calibration (mS/cm)		1.564
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		–

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.43
pH **7.0** value after calibration:		7.0
pH 7.0 mV **(range is -50 to +50 mV)**:		-25.7
pH 10 value before calibration:		9.11
pH 10 value after calibration:		10.0
pH 10 mV **(range is -130 to -230 mV)**:		-185.3
pH **4.0** value before calibration:		
pH **4.0** value after calibration:		
pH 4.0 mV **(range is 130 to 230 mV)**:		

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		23.5
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	240
Reading before calibration (mV):		199.8
Reading after calibration (mV):		231

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.				
10.0 NTU Turbidity Standard	Before Cal:	9.46	After Cal:	9.97
20.0 NTU Turbidity Standard	Before Cal:	19.1	After Cal:	20.2
100.0 NTU Turbidity Standard	Before Cal:	100	After Cal:	100
800.0 NTU Turbidity Check STD	Before Cal:	796	After Cal:	799
____ NTU Turbidity Check STD	Before Cal:		After Cal:	
CALIBRATION SUCCESSFUL?				

Product Name: Low-Flow System

Date: 2020-08-19 10:58:43

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge dedicated
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.25 in
Site Name	ARGWA-19	Tubing Length	52.7 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	407447		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	47.74 ft

Well Information:		Pumping Information:	
Well ID	ARGWA-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.988699 L
Well Total Depth	52.74 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.01 in
Depth to Water	26.39 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	10:34:03	600.03	22.00	6.34	172.55	1.09	26.41	3.28	110.15
Last 5	10:39:03	900.03	21.92	6.30	172.10	1.01	26.41	3.24	119.92
Last 5	10:44:03	1200.03	22.08	6.27	171.73	0.71	26.41	3.20	143.34
Last 5	10:49:03	1500.03	22.31	6.25	171.71	0.79	26.41	3.20	175.87
Last 5	10:54:03	1800.03	22.26	6.25	171.19	0.62	26.41	3.21	203.88
Variance 0			0.17	-0.04	-0.36			-0.03	23.42
Variance 1			0.23	-0.02	-0.03			-0.00	32.53
Variance 2			-0.05	0.00	-0.52			0.01	28.01

Notes

ARGWA-19 sample time 1056.

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-19 13:46:03

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge dedicated
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.25 in
Site Name	ARGWA-20	Tubing Length	37.7 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	407447		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	32.7 ft

Well Information:		Pumping Information:	
Well ID	ARGWA-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.843908 L
Well Total Depth	37.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.02 in
Depth to Water	13.73 ft	Total Volume Pumped	15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	13:21:57	3299.99	19.39	6.03	132.62	7.85	13.86	5.39	106.74
Last 5	13:27:05	3607.99	19.48	6.22	132.79	6.90	13.86	5.38	106.95
Last 5	13:32:05	3907.99	19.41	6.21	133.73	5.21	13.86	5.39	107.10
Last 5	13:37:05	4207.99	19.37	6.19	133.96	4.95	13.86	5.41	107.82
Last 5	13:42:05	4507.99	19.50	6.16	134.36	4.84	13.86	5.43	108.18
Variance 0			-0.06	-0.01	0.94			0.01	0.15
Variance 1			-0.04	-0.01	0.23			0.01	0.72
Variance 2			0.13	-0.04	0.40			0.02	0.35

Notes

ARGWA-20 sample time 1344

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-21 10:42:13

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge dedicated
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.25 in
Site Name	ARGWC-21	Tubing Length	27 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369555		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	22 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-21	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.7406238 L
Well Total Depth	26.98 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.05 in
Depth to Water	13.88 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	10:14:12	1200.03	20.81	5.89	702.49	8.46	14.75	0.28	62.96
Last 5	10:19:12	1500.03	20.91	5.89	702.48	6.42	14.75	0.25	63.23
Last 5	10:24:12	1800.03	20.78	5.89	702.04	5.63	14.75	0.23	64.58
Last 5	10:29:12	2100.03	20.82	5.89	701.45	4.33	14.75	0.22	65.22
Last 5	10:34:12	2400.03	20.75	5.89	701.44	4.17	14.76	0.21	64.34
Variance 0			-0.13	0.00	-0.44			-0.02	1.35
Variance 1			0.04	0.00	-0.59			-0.00	0.64
Variance 2			-0.07	-0.00	-0.01			-0.02	-0.89

Notes

ARGWC-21 sample time 1036

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-19 15:33:34

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.17 in
Site Name	ARGWC-22	Tubing Length	27.9 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	407447		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	22.9 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-22	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.6045295 L
Well Total Depth	27.87 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	13.77 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:09:39	900.03	22.17	6.19	1586.36	0.87	14.09	0.18	19.60
Last 5	15:14:40	1201.03	21.98	6.20	1577.37	1.00	14.09	0.17	17.45
Last 5	15:19:41	1502.03	21.91	6.22	1559.51	0.99	14.09	0.15	17.05
Last 5	15:24:41	1802.03	21.91	6.22	1553.10	1.17	14.09	0.16	16.03
Last 5	15:29:43	2104.03	21.90	6.21	1559.32	1.37	14.09	0.18	15.60
Variance 0			-0.06	0.02	-17.87			-0.01	-0.40
Variance 1			-0.00	0.00	-6.40			0.00	-1.02
Variance 2			-0.01	-0.01	6.22			0.02	-0.43

Notes

ARGWC-22 sample time 1532

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-20 12:18:54

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.17 in
Site Name	ARGWC-23	Tubing Length	28 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369555		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	23 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-23	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6049758 L
Well Total Depth	28.08 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.04 in
Depth to Water	12.1 ft	Total Volume Pumped	3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	11:53:17	900.03	23.48	6.32	484.35	1.86	13.38	0.18	101.97
Last 5	11:58:17	1200.03	23.70	6.32	486.34	1.77	13.35	0.18	100.92
Last 5	12:03:16	1500.01	23.69	6.32	483.04	1.52	13.35	0.17	99.70
Last 5	12:08:16	1800.01	23.77	6.32	487.86	1.07	13.34	0.18	99.45
Last 5	12:13:16	2100.01	23.50	6.33	483.22	1.01	13.34	0.16	98.30
Variance 0			-0.01	0.00	-3.30			-0.01	-1.22
Variance 1			0.08	-0.00	4.82			0.01	-0.25
Variance 2			-0.27	0.01	-4.64			-0.02	-1.15

Notes

ARGWC-23 sample time 1215. Also collected DUP-2.

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-20 14:37:52

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.17 in
Site Name	ARAMW-1	Tubing Length	45.5 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369555		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	40.3 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-1	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6830857 L
Well Total Depth	45.31 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.01 in
Depth to Water	13.13 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	14:14:22	600.03	23.37	6.11	785.29	2.57	13.34	0.19	21.81
Last 5	14:19:22	900.03	23.32	6.10	785.35	2.98	13.34	0.18	22.35
Last 5	14:24:22	1200.03	23.41	6.09	788.89	3.37	13.34	0.18	21.63
Last 5	14:29:22	1500.03	22.83	6.09	787.43	3.24	13.34	0.18	22.70
Last 5	14:34:22	1800.03	22.79	6.09	786.44	2.46	13.34	0.18	23.32
Variance 0			0.09	-0.01	3.54			0.01	-0.72
Variance 1			-0.58	-0.00	-1.46			-0.00	1.07
Variance 2			-0.04	-0.00	-0.99			-0.00	0.62

Notes

ARAMW-1 sample time 1436.

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-20 16:35:26

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR	Tubing Diameter	.17 in
Site Name	ARAMW-2	Tubing Length	25 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369555		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	20 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-2	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.5915856 L
Well Total Depth	24.85 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	13.31 ft	Total Volume Pumped	9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	16:12:18	1500.03	21.09	5.98	1122.56	1.49	12.79	0.10	-28.39
Last 5	16:17:18	1800.09	21.09	5.98	1147.05	1.30	12.79	0.10	-29.15
Last 5	16:22:18	2100.05	21.09	5.98	1222.17	1.17	12.79	0.10	-29.67
Last 5	16:27:18	2400.03	21.26	5.97	1218.61	1.29	12.79	0.09	-31.08
Last 5	16:32:18	2700.03	21.29	5.99	1208.81	1.24	12.79	0.09	-29.18
Variance 0			0.00	0.00	75.12			-0.00	-0.52
Variance 1			0.17	-0.00	-3.56			-0.00	-1.41
Variance 2			0.04	0.02	-9.80			-0.00	1.90

Notes

ARAMW-2 sample time 1635.

Grab Samples

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number: NA
Well ID: ARAMW-1
Date: 8/17/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number: NA
Well ID: ARAMW-2
Date: 8/17/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number: NA
Well ID: ARGWA-19
Date: 8/17/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing	✓		
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number: NA
Well ID: ARGWA-20
Date: 8/17/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	~~✗~~ SH	✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number: NA
Well ID: ARGWC-21
Date: 8/17/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number: NA
Well ID: ARGWC-23
Date: 8/17/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Data Evaluation Narrative
Project: Plant Arkwright Annual Event
Wood Project Number: 6122201429.2003.**
Sites: Ash Pond No. 2 – Former Plant Arkwright, Georgia
Matrix: Groundwater

Eurofins TestAmerica SDG No: 180-109846-1

Introduction

A data quality evaluation (DQE) was performed on the laboratory data reported for the Annual groundwater sampling event conducted at Ash Pond No. 2 (Dry Ash Stockpile) at the former Plant Arkwright, located in Arkwright, Georgia in August 2020 for Southern Company Services (SCS). The samples were collected and analyzed per the protocols presented in the *Draft Former Plant Arkwright Field Sampling Plan* (FSP) (SCS, 2016) and in accordance with the monitoring requirements of §§ 257.90. through 257.95 as referenced in the Georgia Environmental Protection Division (EPD) Rules 391-3-4-10(6)(a)-(c) and 391-3-4-.14. GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D.

The following sections provide summary discussions of the required data qualifications for the analytical methods for samples collected. A Level II DQE validation was performed on the samples analyzed by the fixed-based laboratory within these sample delivery groups (SDGs). A Level II DQE consists of review of the following criteria: sample integrity, holding times, method blanks, laboratory control samples (LCSs), matrix spikes/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), post digestion spikes (PDS), where applicable, laboratory and field duplicate RPDs, field and/or equipment blanks, and reporting limits. Additionally, the data summary tables generated from the electronic data deliverable (EDD) were compared to the laboratory hardcopy data report to verify that the EDD and laboratory data report agree.

The data were reviewed using the laboratory's precision and accuracy limits, the method requirements, and the SCS Field Sampling Plan (FSP) (SCS, 2016). DQE data qualifications were applied, if necessary, using the procedures in USEPA Region IV *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy* (USEPA, 2011) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, 2017), as guidance, and professional judgment using the following qualifiers:

Qualifier	Usable Data
J	The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. *SCS Definition: Value J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce as reliable of a value. Therefore, the value displayed (value J) is qualified by the laboratory as estimated.*
UJ	The analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

Qualifier	Usable Data (continued)
U	Analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. *Note: SCS does not use the "U" flag except when reporting results for radium that are detected below the Minimum Detection Concentration (MDC).*
U*	This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Qualifier	Unusable Data
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be confirmed.
UR	The analyte was analyzed for but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

The analytical results for the samples reported in this SDG are usable with the qualifications discussed in this narrative. A summary of the data with associated qualifiers is presented in **Table 1**.

Deliverables

The data package as submitted to Wood Environment & Infrastructure Solutions, Inc. (Wood) is complete to perform a Level II DQE for United States Environmental Protection Agency (USEPA) Methods SW6020B, SW7470A, EPA 300.0 R2.1, and SM 2540C.

Sample Integrity

The groundwater samples were submitted to Eurofins TestAmerica in Pittsburgh, Pennsylvania (TAL PIT) and analyzed for CCR Appendix III and IV metals by Method SW6020B and mercury by Method SW7470A, anions (chloride, fluoride, and sulfate) by Method 300.0 R2.1, and total dissolved solids (TDS) by Method SM 2540C. The samples were also analyzed for radium-226 and 228 combined by Methods SW9315 and SW9320. The radium analyses were performed at Eurofins TAL St. Louis, Missouri laboratory (TAL SL) and reported in SDG 180-109846-2. The DQE for the radium analyses is presented separately.

Based on the information provided on the Chain-of-Custody (COC) forms, the field samples arrived at the laboratory intact and within the temperature range and preservation requirements. Completed COC documents are included in the data package.

Sample Identification

This SDG contains the following groundwater and/or quality control (QC) samples:

Sample ID	Sample Date	DQE Level	Sample ID	Sample Date	DQE Level
Ash Pond No. 2					
ARGWA-19	08/19/20	II	ARGWC-21	08/21/20	II
ARGWA-20	08/19/20	II			
ARGWC-22	08/19/20	II	**QC Samples**		
ARGWC-23	08/20/20	II	EB#2	08/19/20	II
ARAMW-1	08/20/20	II	FB#2	08/20/20	II
ARAMW-2	08/20/20	II	DUP-2	08/20/20	II

These samples were collected from the Ash Pond No. 2 monitoring wells listed above between August 19 and August 21, 2020. Each of the sample IDs above were amended with a date code (-0820) by Wood to create unique IDs in the database. Sample DUP-2 is a field duplicate of ARGWC-23. Sample EB#2 is an equipment blank, and sample FB#2 is a field blank. The equipment blank sample associations are listed below:

Equipment Blank	Associated Samples
EB#2 (peristaltic pump)	ARAMW-1, ARAMW-2, ARGWC-22, ARGWC-23, DUP-2

The analytical results for the metals, anions, and TDS data are usable with the qualifications discussed in this narrative. A summary of the data quality is presented below.

Metals (6020B/SW7470A)

The samples were submitted to TAL PIT for CCR Appendix III and Appendix IV metals by Method SW6020B and mercury by SW7470A. The CCR Appendix III metals are: boron (B) and calcium (Ca). The CCR Appendix IV metals are: antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), lead (Pb), lithium (Li), mercury (Hg), molybdenum (Mo), selenium (Se), and thallium (Tl). Each of the Level II components were within QC limits except for method, field, and equipment blank contamination.

Holding Times

The sample analyses were performed within the 6-month and 28-day (for mercury) analysis holding times.

Method Blanks

One of the method blanks associated with the samples analyzed within this SDG contained thallium between the method detection limit (MDL) and the reporting limit (RL). Results less than ten times the blank are considered not detected as a possible laboratory artifact: **Reason Code: BL**.

> *Action: No qualification was required because thallium was not detected or greater than 10 times the amount in the blank in the samples associated with this blank.*

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Batch MS/MSD analyses for metals were not performed on project samples collected from Ash Pond No. 2. The recoveries and RPDs were within QC limits for the batch MS/MSDs.

Post Digestion Spike (PDS)

A PDS analysis was not available for review.

Field Duplicate Precision

One field duplicate/sample pair (DUP-2/ARGWC-23) was collected with this SDG, and the RPDs were within QC limits for results greater than or equal to five times the reporting limit.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

Field accuracy was measured through the collection of equipment/rinsate blanks and field blanks. Equipment rinsate blanks are collected to monitor the decontamination process on non-dedicated sampling equipment. Field blanks are collected to assess the water used to decontaminate the equipment and the containers into which samples are placed. Equipment blank EB#2 reported thallium between the MDL and the RL, and field blank FB#2 reported boron between the MDL and the RL. Results less than ten times the blank are considered not detected as a possible field artifact: **Reason Code: BF, BE**

> *Action: The B results for ARGWC-23 and DUP-2 were qualified as not detected due to blank contamination and flagged "U*".*

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of metals by USEPA Methods SW6020B and SW7470A. The laboratory RL was elevated where dilutions were required to place the constituent within the calibration range. None of the samples in this SDG required dilution.

Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

Total and Dissolved Metals Comparison

If total and dissolved metals samples were collected, comparison of the total and dissolved results can aid in the representativeness of the total metals value verses the metals that may be associated with suspended solids and metals actually dissolved within the water column. The dissolved metals results should be less than or equal to the total metals concentration for positive results greater than 5 times the RL. There were no dissolved metals collected from the wells at Ash Pond No. 2.

Anions (EPA 300.0 R2.1)

The samples were submitted to TAL PIT for anions (chloride, fluoride, and sulfate) by Method 300.0 R2.1. Each of the Level II components were within the QC limits.

Holding Times

The sample analyses were performed within the 28-day analysis holding times.

Method Blanks

The method blank associated with the samples analyzed in this SDG contained no reportable detections of anions.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

One of the batch MS/MSDs for anions (fluoride) was performed on Ash Pond No. 2 sample ARGWC-21. The MS and MSD recoveries and RPD were within QC limits.

Field Duplicate Precision

One field duplicate/sample pair (DUP-2/ARGWC-23) was collected with this SDG, and the RPDs were within QC limits.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The equipment blank sample (EB#2) and field blank sample (FB#2) did not contain reportable concentration of anions.

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of anions by USEPA Method 300 R2.1. One sample required a dilution for sulfate resulting in elevated RLs. The following sample dilution was performed:

Sample	**Anion**	**Dilution**
ARGWC-22	sulfate	10x

Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

TDS (SM 2540C)

The samples were submitted to TAL PIT for TDS by Method SM 2540C. Each of the Level II components were within the QC limits.

Holding Times

The sample analyses were performed within the 7-day analysis holding times.

Method Blanks

The method blank did not contain reportable levels of TDS.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Field Duplicate Precision

One field duplicate/sample pair in this SDG (DUP-2/ARGWC-23) was analyzed for TDS, and the RPD was within QC limits.

Laboratory Duplicate Precision

A laboratory duplicate was not analyzed on any samples in this SDG.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The equipment blank sample (EB#2) and field blank sample (FB#2) did not contain TDS.

Reporting Limits

The laboratory RL met the SCS project RL and was below the screening value of 500 mg/L for samples submitted for the analysis of TDS by Method SM 2540C and no samples required dilutions; therefore, RLs were met for this project. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory, however there were none in this SDG.

Overall Site Evaluation and Professional Judgment Flagging Changes

The chemical data included in this SDG was validated in general accordance with the guidelines contained in the project work plan and validation SOPs. Professional judgment was not used to modify flags for results reported in samples presented in this SDG.

Completeness

A total of 7 wells, along with the required QC samples, were sampled and analyzed during the August 2020 annual event at Ash Pond No. 2 according to the FSP. The 7 well locations along with field duplicate, field blank, and equipment blank samples were reported in this SDG and were sampled and analyzed as scoped.

Therefore, both field and analytical completeness calculated for this SDG was 100%.

References

SCS, 2016, Draft Field Sampling Plan – Former Plant Arkwright, Georgia Power Company, Earth Science and Environmental Engineering Technical Services, Southern Company Services, Inc. (SCS), August 17, 2016. Permit modification to include the Appendix III and IV sampling requirements; approval of modified permit and FSP pending.

USEPA, 2011. Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy, Revision 2.0; September 2011.

USEPA, 2017. National Office of Superfund Remediation and Technology Innovation, National Functional Guidelines for Inorganic Superfund Methods Data Review, Revision 0.0; January 2017.

Prepared by/Date: DWK 10/05/2020
Checked by/Date: JAH 10/08/2020

TABLE 1
SUMMARY OF DATA QUALIFIERS

TABLE 1
SUMMARY OF DATA QUALIFIERS
SAMPLE DELIVERY GROUP 180-109846-1
SAMPLING DATES: August 19 - 21, 2020
Plant Arkwright Ash Ponds No. 2 - Annual Event

Field Sample ID	Location ID	Type	SDG	Method	Parameter Name	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
EB#2	Equipmemnt Blank	EB	180-109846-1	6020B	thallium	0.00015	J	J	--	mg/L
ARGWA-19	ARGWA-19	N	180-109846-1	6020B	lithium	0.0038	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-109846-1	6020B	beryllium	0.00022	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-109846-1	6020B	cobalt	0.00064	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-109846-1	6020B	lead	0.00039	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-109846-1	6020B	selenium	0.0015	J	J	--	mg/L
FB#2	Field Blank	FB	180-109846-1	6020B	boron	0.056	J^	J	--	mg/L
ARGWC-23	ARGWC-23	N	180-109846-1	6020B	boron	<0.44		U*	BF	mg/L
ARGWC-23	ARGWC-23	N	180-109846-1	6020B	cobalt	0.0023	J	J	--	mg/L
DUP-2	ARGWC-23	FD	180-109846-1	6020B	boron	<0.40		U*	BF	mg/L
DUP-2	ARGWC-23	FD	180-109846-1	6020B	cobalt	0.0022	J	J	--	mg/L
ARAMW-1	ARAMW-1	N	180-109846-1	6020B	cobalt	0.001	J	J	--	mg/L
ARAMW-1	ARAMW-1	N	180-109846-1	6020B	molybdenum	0.0076	J	J	--	mg/L
ARAMW-2	ARAMW-2	N	180-109846-1	6020B	cobalt	0.0022	J	J	--	mg/L
ARAMW-2	ARAMW-2	N	180-109846-1	6020B	molybdenum	0.0013	J	J	--	mg/L
ARGWC-21	ARGWC-21	N	180-109846-1	300.0 R2.1	fluoride	0.084	J	J	--	mg/L
ARGWC-21	ARGWC-21	N	180-109846-1	6020B	cobalt	0.00066	J	J	--	mg/L

Notes:
Metals results are total metals unless otherwise noted.

Laboratory Qualifiers:
J= Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^ ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside accecptance limits.

Reason Codes:
BF = Field blank contamination. The result should be considered "not-detected".
-- = No Reason Code assigned for values detected between the method detection limit (MDL) and the reporting limit (RL);estimated quantitation.

Validation Qualifiers:
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.The associated numerical value is the approximate concentration of the analyte in the sample.
U* = This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

Prepared by/Date: DWK 10/07/20
Checked by/Date: JAH 10/08/20

DQE CHECKLISTS

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright CCR Annual Event
Project No: 6122201429.2003.****
Method: Metals and Mercury by SW6020B/SW7470
Laboratory and Lot: TAL PIT SDG: 180-109846-1
Reviewer/Date: D. Knaub 10/02/2020 **Senior Reviewer/Date:** J. Hartness 10/08/2020

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review**	
			OK	
			Sample IDs on labels did not include the "AR" prefix, samples logged per the COC	
X			**Sample Preservation and cooler temperature met (HNO_3 to pH<2)**	
			OK, 1.1, 1.2, 1.5, 1.6, 2.1, 2.4, 2.6, 2.7, and 3.6°C	
X			**Holding times met (180 days; Hg = 28 days)**	
			Coll: 08/19/20 – 08/21/20	
			Prep: metals - 08/28/20, 09/01/20	Hg - 09/02/20, 09/04/20, 09/05/20
			Anal: metals - 09/17/20, 09/10/20, 09/04/20	Hg - 09/02/20, 09/05/20, 09/07/20
	X		**QC Blanks Review**	
			Method Blanks:	
			p. 54 MB 180-327642/1-A = ND	
			p. 54 MB 180-327642-2-A - *B* = ND	
			p. 55 MB 180-328062/1-A = ND	
			p. 55 MB 180-328062/1-A - *B and Cr* = ND	
			p. 56 PB 180-326831/1-E Tl = 0.000185 J mg/L x10 = **0.00185 mg/L *Flag assoc. results "U*"***	
			No flags - Tl ND or >10x blank in associated Ash Pond No. 2 samples	
			p. 57-58 MB 180-328065/1-A = ND	
			Hg:	
			p. 59 MB 180-328121/1-A Hg = ND	
			p. 60 MB 180-328636/1-A Hg = ND	
			Equipment Blanks: (non-dedicated equip.)	
			EB#2 (peristaltic) Tl = 0.00015 J mg/L x 10 = **0.0015 mg/L**	
			Flag assoc. results "U*":	
			No flags - Tl ND or >10x blank in associated Ash Pond No. 2 samples	
			Field Blanks: (DI water)	
			FB#2 (AP2) B = 0.056 J mg/L x10 = **0.56 mg/L**	
			***Flag assoc. results "U*": Reason Code: BF** ARGWC-23, DUP-2*	
X			**Laboratory Control Sample (LCS) recovery within limits (Metals 80-120%, Hg = 80-120%)**	
			p. 54 LCS 180-327642/2-A metals = All OK	
			p. 56-57 LCS 180-328062/2-A metals = All OK	
			p. 58 LCS 180-328065/2-A metals = All OK	
			Hg**:**	
			p. 59 LCS 180-328121/1-A Hg = 119%	
			p. 61 LCS 180-328636/2-A Hg = 105%	

Metals and Mercury by SW6020B/SW7470A (cont.)

YES NO NA COMMENTS

☒ **Lab Duplicate - Field Duplicate precision goals met (20%)**

Results in mg/L

metal	ARGWC-23	DUP-2-0820	RPD/Diff	RL
Sb	<0.00038	<0.00038	-	
As	<0.00031	<0.00031	-	
Ba	0.16	0.16	0.0%	
Be	<0.00018	<0.00018	-	
B	0.44	0.4	9.5%	
Cd	<0.00022	<0.00022	-	
Ca	69	68	1.5%	
Cr	<0.0015	<0.0015	-	
Co*	0.0023J	0.0022J	0.0001	0.0025
Pb	<0.00013	<0.00013	-	
Li	0.036	0.035	2.8%	
Mo	0.061	0.061	0.0%	
Se	<0.0015	<0.0015	-	
Tl	<0.00015	<0.00015	-	
Hg	<0.00013	<0.00013	-	

For detections ≤5x RL – use absolute difference. Difference should be < RL.

All RPDs/Diff OK

☒ **Matrix Spike recoveries and RPDs within limits (75-125%, RPD 20)**

p. 55 Not from AP2

p. 57 Not from AP2

p. 59 Hg: Not from AP2

☒ **Total metals vs dissolved metals within limits (RPD < 20% or diff. < RL)**

No samples were analyzed for dissolved metals in AP2

☒ **EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright CCR Annual Event
Project No: 6122201429.2003.****
Method: Anions (chloride, fluoride, and sulfate) by E300.0 R2.1
Laboratory and Lot: TAL PIT SDG: 180-109846-1
Reviewer/Date: D. Knaub 10/02/2020 **Senior Reviewer/Date:** J. Hartness 10/08/2020

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK *Sample IDs on labels did not include the "AR" prefix, samples logged per the COC*	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** OK, 1.1, 1.2, 1.5, 1.6, 2.1, 2.4, 2.6, 2.7, and 3.6°C	
X			**Holding times met (Cl, SO_4, F – 28 days)** Coll: 08/19/20 – 08/21/20 Anal: 08/21/20, 08/24/20, 08/25/20, 08/26/20, 08/28/20	
X			**QC Blanks Review** Method Blanks: p. 49 MB 180-326777/6 F, Cl, SO_4 = ND p. 49 MB 180-326785/6 F = ND p. 50 MB 180-326890/6 F = ND p. 52 MB 180-327578/6 F = ND Equipment Blanks: EB#2 - F, Cl, SO_4 = ND Field Blanks: FB#2 - F, Cl, SO_4 = ND	
X			**Laboratory Control Sample (LCS) recovery within limits (90-110%)** p. 49 LCS 180-326777/5 – Cl = 108%, F = 103%, SO_4 = 105% p. 50 LCS 180-326785/5 – F = 95% p. 50 LCS 180-326890/5 – F = 101% p. 52 LCS 180-327578/5 – F = 97%	
X			**Lab Duplicate - Field Duplicate precision goals met (20%)**	

Results in mg/L

anion	ARGWC-23	DUP-2-0820	RPD
Cl	3.9	3.9	0.0%
F	0.19	0.19	0.0%
SO_4	69	70	1.4%

All OK

Anions (chloride, fluoride, and sulfate) by E300.0 R2.1 (cont.)

YES	NO	NA	COMMENTS
X			**Matrix Spike recoveries and RPDs within limits (lab %Rec limits, RPD = 20)** p. 49 Not from AP2 p. 50 Not from AP2 p. 50 Not from AP2 p. 51 Not from AP2 p. 51 Not from AP2 p. 51-52 Not from AP2 p. 52 ARGWC-21 F = 99, 107% RPD = 7 - OK *No MS/MSDs on Cl or SO_4 for samples in this SDG*
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** *Dilutions: ARGWC-22 SO_4 – 10x*

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright CCR Annual Event
Project No: 6122201429.2003.****
Method: Total Dissolved Solids (TDS) by SM 2540C
Laboratory and Lot: TAL PIT SDG: 180-109846-1
Reviewer/Date: D. Knaub 10/02/2020 **Senior Reviewer/Date:** J. Hartness 10/08/2020

YES NO NA COMMENTS

☒ **Case Narrative and COC Completeness Review**
OK
Sample IDs on labels did not include the "AR" prefix, samples logged per the COC

☒ **Sample Preservation and cooler temperature met (Cool to 6°C)**
OK, 1.1, 1.2, 1.5, 1.6, 2.1, 2.4, 2.6, 2.7, and 3.6°C

☒ **Holding times met (7 days)**
Coll: 08/18/20 – 08/21/20
Anal: 08/21/20

☒ **QC Blanks Review**
Method Blanks
p. 60 MB 180-326608/2 TDS = ND
p. 60 MB 180-326682/2 TDS = ND

Equipment Blanks:
EB#2 TDS = ND

Field Blanks:
FB#2 TDS = ND

☒ **Laboratory Control Sample (LCS) recovery within lab limits (80-120%)**
p. 60 LCS 180-326608/1 TDS = 106% - OK
p. 60 LCS 180-326682/1 TDS = 99% - OK

☒ **Lab Duplicate - Field Duplicate precision goals met (20%)**

Results in mg/L

anion	ARGWC-23	DUP-2-0820	RPD
TDS	310	310	0.0%

☒ **Matrix Spike recoveries and RPDs within limits (if applicable)**
MS/MSD not applicable for TDS

☒ **EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

Data Evaluation Narrative
Project: Plant Arkwright Annual Event
Wood Project Number: 6122201429.2003.**
Site: Ash Pond No. 2 – Former Plant Arkwright, Georgia
Matrix: Groundwater

Eurofins TestAmerica SDG No: 180-109846-2 (Radium)

Introduction

A data quality evaluation (DQE) was performed on the radium laboratory data reported for the Annual groundwater sampling event conducted at Ash Pond No. 2 (Dry Ash Stockpile) at the former Plant Arkwright, located in Arkwright, Georgia in August 2020 for Southern Company Services (SCS). The samples were collected and analyzed per the protocols presented in the *Draft Former Plant Arkwright Field Sampling Plan* (FSP) (SCS, 2016) and in accordance with the monitoring requirements of §§ 257.90 through 257.95 as referenced in the Georgia Environmental Protection Division (EPD) Rules 391-3-4-.10(6)(a)-(c) and 391-3-4-.14. GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (US EPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D.

The following sections provide summary discussions of the required data qualifications for the analytical methods for samples collected. A Level II DQE validation was performed on the samples analyzed by the fixed-based laboratory within these sample delivery groups (SDGs). A Level II DQE consists of review of the following criteria: sample integrity, holding times, method blanks, laboratory control samples (LCSs), matrix spikes/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), post digestion spikes (PDS), where applicable, laboratory and field duplicate RPDs, field and/or equipment blanks, and reporting limits. Additionally, the data summary tables generated from the electronic data deliverable (EDD) were compared to the laboratory hardcopy data report to verify that the EDD and laboratory data report agree.

The data were reviewed using the laboratory's precision and accuracy limits, the method requirements, and the SCS Field Sampling Plan (FSP) (SCS, 2016). DQE data qualifications were applied, if necessary, using the procedures in USEPA Region IV *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy* (USEPA, 2011) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, 2017), as guidance, and professional judgment using the following qualifiers:

Qualifier	Usable Data
J	The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. *SCS Definition: Value J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce as reliable of a value. Therefore, the value displayed (value J) is qualified by the laboratory as estimated.*
UJ	The analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

Qualifier	Usable Data (continued)
U	Analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. *Note: SCS does not use the "U" flag except when reporting results for radium that are detected below the Minimum Detection Concentration (MDC).*
U*	This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Qualifier	Unusable Data
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be confirmed.
UR	The analyte was analyzed for but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

The analytical results for the samples reported in this SDG are usable with the qualifications discussed in this narrative. A summary of the data with associated qualifiers is presented in **Table 1**.

Deliverables

The data package as submitted to Wood Environment & Infrastructure Solutions, Inc. (Wood) is complete to perform a Level II DQE for United States Environmental Protection Agency (USEPA) Methods 9315 and 9320.

Sample Integrity

The groundwater samples were submitted to Eurofins TestAmerica laboratory located in St. Louis, Missouri (TAL SL) via the Pittsburgh, Pennsylvania location and analyzed for radium-226 and 228 combined by Methods SW9315 and SW9320. As requested by SCS, the radium data was reported separately from the other CCR Appendix III and IV parameters (reported in SDG 180-109846-1).

Based on the information provided on the Chain-of-Custody (COC) forms, the field samples arrived at the laboratory intact and within the temperature range and preservation requirements. Completed COC documents are included in the data package.

Sample Identification

This SDG contains the following groundwater and quality control (QC) samples:

Sample ID	Sample Date	DQE Level	Sample ID	Sample Date	DQE Level
Ash Pond No. 2					
ARGWA-19	08/19/20	II	ARGWC-21	08/21/20	II
ARGWA-20	08/19/20	II			
ARGWC-22	08/19/20	II	**QC Samples**		
ARGWC-23	08/20/20	II	EB#2	08/19/20	II
ARAMW-1	08/20/20	II	FB#2	08/20/20	II
ARAMW-2	08/20/20	II	DUP-2	08/20/20	II

These samples were collected from Ash Pond No. 2 monitoring wells listed above between August 19 and August 21, 2020. Sample DUP-2 is a field duplicate of sample ARGWC-23. Sample EB#2 is an equipment and sample FB#2 is a field blank associated with the AP2 wells reported in this SDG and described in this narrative. The equipment blank sample associations are listed below:

Equipment Blank	Associated Samples
EB#2 (peristaltic pump)	ARAMW-1, ARAMW-2, ARGWC-22, ARGWC-23, DUP-2

The analytical results for the radium data are usable with the qualifications discussed in this narrative. A summary of the data quality is presented below.

Radium (SW9315/SW9320)

The samples were submitted to TAL SL for radium-226, radium-228 and total radium by Methods SW9315 and SW9320. Total radium was measured by calculation. Each of the Level II components were within laboratory QC limits except for method blank and LCS recoveries.

Holding Times

The sample analyses were performed within the 6 months analysis holding times.

Method Blanks

The laboratory method blanks did not contain reportable concentrations of radium-226 above the minimum detected concentration (MDC) indicating no interference from the analytical systems. One of the method blanks contained radium-228 above the MDC, and any result less than the two-sigma (2σ) normalized absolute difference (NAD) limit of 2.58 are considered "not detected" as possible lab artifacts: **Reason Code: BL**

> *Action: The radium-228 and total radium results for sample ARGWA-20 were qualified as not detected and flagged "U*".*

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits except for the high LCS or LCSD recoveries of radium-228 in two analytical batches, and associated positive results are considered estimated.

> *Action: No qualification was necessary because radium-228 was not detected in the associated samples or was affected by method blank contamination in the associated sample and flagged "U*".*

Laboratory Duplicate Precision

Laboratory duplicate analyses were performed via the analysis of LCSDs. The relative error ratios (RERs) between the LCS and LCSDs were within QC limits.

Field Duplicate Precision

One field duplicate pair (ARGWC-23/DUP-2) was submitted and the RER could not be calculated because the results were less than the MDCs.

Sampling Accuracy (Equipment Blanks, Field Blanks)

Field accuracy was measured through the collection of equipment/rinsate blanks and field blanks. Equipment rinsate blanks are collected to monitor the decontamination process on non-dedicated sampling equipment. Field blanks are collected to assess the water used to decontaminate the equipment and the containers into which samples are placed. The equipment blanks and field blank did not contain radium-226 or radium-228 above the MDC.

Carrier and Tracer Yield Recoveries

The carrier and tracer yield recoveries for the samples and QC were within the QC limits of 40% to 110%.

Reporting Limits/Minimum Detectable Concentrations

The RLs (MDCs) met the SCS project RLs and were below the screening level of 5 pCi/L for samples submitted for the analysis of radium-226 and radium-228 by Methods SW9315 and SW9320.

Sample results in which the values were reported at concentrations below the MDC were flagged "U" and considered not detected.

Total and Dissolved Radium Comparison

If total and dissolved radium samples were collected, comparison of the total and dissolved results can aid in the representativeness of the total radium value verses the radium that may be associated with suspended solids and radium actually dissolved within the water column. The dissolved radium results should be less than or equal to the total radium concentration for positive results greater than 5 times the RL. No total and dissolved samples were collected and reported in this SDG.

Overall Site Evaluation and Professional Judgment Flagging Changes

The chemical data included in this SDG was validated in general accordance with the guidelines contained in the project work plan and validation SOPs. Professional judgment was not used to modify flags for results reported in samples presented in this SDG.

Completeness

A total of 7 wells, along with the required QC samples, were sampled and analyzed during the August 2020 event in Ash Pond No. 2 according to the FSP. The 7 well locations along with field duplicate, equipment blank, and field blank samples were reported in this SDG and were sampled and analyzed as scoped.

Therefore, both field and analytical completeness calculated for this SDG was 100%.

References

SCS, 2016, Draft Field Sampling Plan – Former Plant Arkwright, Georgia Power Company, Earth Science and Environmental Engineering Technical Services, Southern Company Services, Inc. (SCS), August 17, 2016. Permit modification to include the Appendix III and IV sampling requirements; approval of modified permit and FSP pending.

USEPA, 2011. Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy, Revision 2.0; September 2011.

USEPA, 2017. National Office of Superfund Remediation and Technology Innovation, National Functional Guidelines for Inorganic Superfund Methods Data Review, Revision 0.0; January 2017.

Prepared by/Date: DWK 10/12/2020
Checked by/Date: JAH 10/14/2020

TABLE 1
SUMMARY OF DATA QUALIFIERS

TABLE 1
SUMMARY OF DATA QUALIFIERS
SAMPLE DELIVERY GROUP 180-109846-2
SAMPLING DATES: August 19 - 21, 2020
Plant Arkwright Ash Pond No. 2 - Annual Event

Field Sample ID	Location ID	Type	SDG	Method	Parameter Name	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
ARGWA-20	ARGWA-20	N	180-109846-2	9320	radium-228	0.84	*	U*	BL	pCi/L
ARGWA-20	ARGWA-20	N	180-109846-2	9315 + 9320	total radium	0.94		U*	BL	pCi/L

Notes:

Laboratory Qualifiers:

* LCS or LCSD is outside acceptance limits

Reason Codes:

BL = Laboratory blank contamination. The result should be considered "not-detected".

Validation Qualifiers:

U* = This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

Prepared by/Date: DWK 10/12/20
Checked by/Date: JAH 10/14/20

DQE CHECKLISTS

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright CCR Annual Event
Project No: 6122201429.2003.****
Method: Radium-226, Radium-228 and Combined Radium by Methods 9315 and 9320
Laboratory and Lot: TAL PIT SDG: 180-109846-2
Reviewer/Date: D. Knaub 10/12/2020 **Senior Reviewer/Date:** J. Hartness 10/14/2020

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review**	
			OK – Samples anal. @ TAL-St. Louis	
			Sample IDs on labels did not include the "AR" prefix, samples logged per the COC	
X			**Sample Preservation and cooler temperature met (HNO_3 to pH<2)**	
			OK, 1.1, 1.2, 1.5, 1.6, 2.1, 2.4, 2.6, 2.7 and 3.6° C.	
X			**Holding times met (180 days)**	
			Collected: 08/18/20 – 08/21/20	
			Ra-226: prep: 08/24/20, 08/25/20, 08/28/20;	
			anal: 09/15/20, 09/16/20, 09/21/20	
			Ra 228: prep: 08/24/20, 08/25/20, 08/28/20, 08/31/20, 09/14/20, 09/21/20;	
			anal: 09/09/20, 09/10/20, 09/18/20, 09/21/20, 09/30/20	
			Ra, combined: anal: 09/17/20, 09/23/20, 10/02/20	
	X		**QC Blanks Review (net blank value <MDC)**	
			p. 48 MB 160-480640/24-A Ra-226 < MDC	
			p. 48 MB 160-480684/10-A Ra-226 < MDC	
			p. 49 MB 160-481082/24-A Ra-226 < MDC	
			p. 50 MB 160-480689/10-A Ra-228 < MDC	
			p. 51 MB 160-481085/24-A Ra-228 < MDC	
			p. 52 MB 160-482400/9-A Ra-228 = 1.266 pCi/L	
			Assoc. results < NAD 2σ flagged "U*"	
			Reason code: BL ARGWA-20	
			p. 53 MB 160-483141/4-A Ra-228 < MDC	
			Equipment Blanks: (non-dedicated equip.)	
			EB#2 (peristaltic) - All < MDC	
			Field Blanks: (DI water)	
			FB#2 (AP2) – All < MDC	
	X		**Laboratory Control Sample (LCS) recovery within lab limits (75-125%; RPD = RER (2σ <3)**	
			p. 48 LCS 160-480640/1-A Ra-226 = 91%	
			p. 48 LCS/LCSD 160-480684/1-A, 2-A Ra-226 = 87, 91% RER = 0.21	
			p. 49 LCS/LCSD 160-481082/1-A, 2-A Ra-226 = 88, 89% RER = 0.07	

YES	NO	NA	COMMENTS
	X		**Laboratory Control Sample (cont.)**

p. 51 LCS/LCSD 160-480689/1-A, 2-A Ra-228 = 137, 122% RER = 0.46
No flags, assoc. results < MDC
p. 51-52 LCS/LCSD 160-481085/1-A, 2-A Ra-228=107, 95% RER = 0.47
p. 53 LCS/LCSD 160-482400/1-A, 2-A Ra-228 = 117, 134% RER = 0.54
Assoc. pos. results flagged "J": Reason code: LCS-H
No flags, assoc. results < MDC or flagged "U"*
p. 53 -54 LCS/LCSD 160-483141/1-A, 2-A Ra-228 = 107, 104%

X **Lab Duplicate - Field Duplicate precision goals met (lab limits); lab dup every 10 samples (RPD = RER (2σ) <3)**

Field Duplicate: ARGWC-23 = DUP-2			*RER*
Ra-226	*<MDC*	*<MDC*	*NC*
Ra-226	*<MDC*	*<MDC*	*NC*
Ra, total	*<MDC*	*<MDC*	*NC*

X **Matrix Spike recoveries and RPDs within limits (if applicable)**
NA

X **Carrier/Tracer Yield Recovery Ra-226 (Carrier: Ba); Ra-228 (Carrier Ba, Tracer: Y) (40-110%)**
All ok

X **EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-111426-1
Client Project/Site: Plant Arkwright Background Wells 22 23

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
10/12/2020 7:05:21 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-111426-1

Comments
No additional comments.

Receipt
The samples were received on 9/24/2020 9:15 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

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.

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
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-111426-1	EB-01	Water	09/22/20 14:00	09/24/20 09:15	
180-111426-2	ARGWC-22	Water	09/22/20 15:52	09/24/20 09:15	
180-111426-3	ARGWC-23	Water	09/22/20 17:22	09/24/20 09:15	
180-111426-4	DUP-01	Water	09/22/20 00:00	09/24/20 09:15	

Method Summary

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	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 = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: EB-01
Lab Sample ID: 180-111426-1
Date Collected: 09/22/20 14:00
Matrix: Water
Date Received: 09/24/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			332195	10/03/20 22:54	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	332470	10/06/20 13:44	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			332836	10/08/20 16:46	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	332506	10/07/20 18:42	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			332827	10/08/20 18:40	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	331364	09/26/20 06:51	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-22
Lab Sample ID: 180-111426-2
Date Collected: 09/22/20 15:52
Matrix: Water
Date Received: 09/24/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			332195	10/03/20 21:10	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total/NA	Analysis	EPA 300.0 R2.1		10			332195	10/03/20 21:31	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	332470	10/06/20 13:44	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			332836	10/08/20 16:49	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	332506	10/07/20 18:42	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			332827	10/08/20 18:42	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	331364	09/26/20 06:51	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333009	09/22/20 15:52	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-23
Lab Sample ID: 180-111426-3
Date Collected: 09/22/20 17:22
Matrix: Water
Date Received: 09/24/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			332195	10/03/20 18:44	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	332470	10/06/20 13:44	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			332836	10/08/20 16:51	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	332506	10/07/20 18:42	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			332827	10/08/20 18:43	KEM	TAL PIT
	Instrument ID: HGZ									

Lab Chronicle

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: ARGWC-23
Lab Sample ID: 180-111426-3
Date Collected: 09/22/20 17:22
Matrix: Water
Date Received: 09/24/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	331364	09/26/20 06:51	AVS	TAL PIT
Total/NA	Analysis	Field Sampling		1			333009	09/22/20 17:22	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-01
Lab Sample ID: 180-111426-4
Date Collected: 09/22/20 00:00
Matrix: Water
Date Received: 09/24/20 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			332195	10/03/20 21:52	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	332470	10/06/20 13:44	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			332836	10/08/20 16:54	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	332506	10/07/20 18:42	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			332827	10/08/20 18:44	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	331364	09/26/20 06:51	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333009	09/22/20 00:00	AGJ	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

MM1 = Mary Beth Miller

TJO = Tyler Oliver

Batch Type: Analysis

AGJ = Andy Johnson

AVS = Abbey Smith

KEM = Kimberly Mahoney

MJH = Matthew Hartman

RSK = Robert Kurtz

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-1

Client Sample ID: EB-01

Date Collected: 09/22/20 14:00
Date Received: 09/24/20 09:15

Lab Sample ID: 180-111426-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/03/20 22:54	1
Fluoride	<0.026		0.10	0.026	mg/L			10/03/20 22:54	1
Sulfate	<0.38		1.0	0.38	mg/L			10/03/20 22:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		10/06/20 13:44	10/08/20 16:46	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/06/20 13:44	10/08/20 16:46	1
Barium	<0.0016		0.010	0.0016	mg/L		10/06/20 13:44	10/08/20 16:46	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/06/20 13:44	10/08/20 16:46	1
Boron	**0.045**	**J**	0.080	0.039	mg/L		10/06/20 13:44	10/08/20 16:46	1
Cadmium	<0.00022		0.0010	0.00022	mg/L		10/06/20 13:44	10/08/20 16:46	1
Calcium	<0.13		0.50	0.13	mg/L		10/06/20 13:44	10/08/20 16:46	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/06/20 13:44	10/08/20 16:46	1
Cobalt	<0.00013		0.00050	0.00013	mg/L		10/06/20 13:44	10/08/20 16:46	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/06/20 13:44	10/08/20 16:46	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/06/20 13:44	10/08/20 16:46	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/06/20 13:44	10/08/20 16:46	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/06/20 13:44	10/08/20 16:46	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/06/20 13:44	10/08/20 16:46	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/07/20 18:42	10/08/20 18:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			09/26/20 06:51	1

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-1

Client Sample ID: ARGWC-22

Date Collected: 09/22/20 15:52
Date Received: 09/24/20 09:15

Lab Sample ID: 180-111426-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.1**		1.0	0.32	mg/L			10/03/20 21:10	1
Fluoride	**0.049**	**J**	0.10	0.026	mg/L			10/03/20 21:10	1
Sulfate	**720**		10	3.8	mg/L			10/03/20 21:31	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		10/06/20 13:44	10/08/20 16:49	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/06/20 13:44	10/08/20 16:49	1
Barium	**0.038**		0.010	0.0016	mg/L		10/06/20 13:44	10/08/20 16:49	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/06/20 13:44	10/08/20 16:49	1
Boron	**2.8**		0.080	0.039	mg/L		10/06/20 13:44	10/08/20 16:49	1
Cadmium	<0.00022		0.0010	0.00022	mg/L		10/06/20 13:44	10/08/20 16:49	1
Calcium	**190**		0.50	0.13	mg/L		10/06/20 13:44	10/08/20 16:49	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/06/20 13:44	10/08/20 16:49	1
Cobalt	**0.0085**		0.00050	0.00013	mg/L		10/06/20 13:44	10/08/20 16:49	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/06/20 13:44	10/08/20 16:49	1
Lithium	**0.014**		0.0050	0.0034	mg/L		10/06/20 13:44	10/08/20 16:49	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/06/20 13:44	10/08/20 16:49	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/06/20 13:44	10/08/20 16:49	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/06/20 13:44	10/08/20 16:49	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/07/20 18:42	10/08/20 18:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1300**		10	10	mg/L			09/26/20 06:51	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.77**				SU			09/22/20 15:52	1

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: ARGWC-23
Lab Sample ID: 180-111426-3
Date Collected: 09/22/20 17:22
Matrix: Water
Date Received: 09/24/20 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.6**		1.0	0.32	mg/L			10/03/20 18:44	1
Fluoride	**0.33**		0.10	0.026	mg/L			10/03/20 18:44	1
Sulfate	**68**	**F1**	1.0	0.38	mg/L			10/03/20 18:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		10/06/20 13:44	10/08/20 16:51	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/06/20 13:44	10/08/20 16:51	1
Barium	**0.16**		0.010	0.0016	mg/L		10/06/20 13:44	10/08/20 16:51	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/06/20 13:44	10/08/20 16:51	1
Boron	**0.50**		0.080	0.039	mg/L		10/06/20 13:44	10/08/20 16:51	1
Cadmium	<0.00022		0.0010	0.00022	mg/L		10/06/20 13:44	10/08/20 16:51	1
Calcium	**66**		0.50	0.13	mg/L		10/06/20 13:44	10/08/20 16:51	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/06/20 13:44	10/08/20 16:51	1
Cobalt	**0.0036**		0.00050	0.00013	mg/L		10/06/20 13:44	10/08/20 16:51	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/06/20 13:44	10/08/20 16:51	1
Lithium	**0.039**		0.0050	0.0034	mg/L		10/06/20 13:44	10/08/20 16:51	1
Molybdenum	**0.053**		0.0050	0.00061	mg/L		10/06/20 13:44	10/08/20 16:51	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/06/20 13:44	10/08/20 16:51	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/06/20 13:44	10/08/20 16:51	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/07/20 18:42	10/08/20 18:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**310**		10	10	mg/L			09/26/20 06:51	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.29**				SU			09/22/20 17:22	1

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-1

Client Sample ID: DUP-01
Date Collected: 09/22/20 00:00
Date Received: 09/24/20 09:15

Lab Sample ID: 180-111426-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.6**		1.0	0.32	mg/L			10/03/20 21:52	1
Fluoride	**0.32**		0.10	0.026	mg/L			10/03/20 21:52	1
Sulfate	**67**		1.0	0.38	mg/L			10/03/20 21:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		10/06/20 13:44	10/08/20 16:54	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/06/20 13:44	10/08/20 16:54	1
Barium	**0.16**		0.010	0.0016	mg/L		10/06/20 13:44	10/08/20 16:54	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/06/20 13:44	10/08/20 16:54	1
Boron	**0.48**		0.080	0.039	mg/L		10/06/20 13:44	10/08/20 16:54	1
Cadmium	<0.00022		0.0010	0.00022	mg/L		10/06/20 13:44	10/08/20 16:54	1
Calcium	**67**		0.50	0.13	mg/L		10/06/20 13:44	10/08/20 16:54	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/06/20 13:44	10/08/20 16:54	1
Cobalt	**0.0037**		0.00050	0.00013	mg/L		10/06/20 13:44	10/08/20 16:54	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/06/20 13:44	10/08/20 16:54	1
Lithium	**0.039**		0.0050	0.0034	mg/L		10/06/20 13:44	10/08/20 16:54	1
Molybdenum	**0.055**		0.0050	0.00061	mg/L		10/06/20 13:44	10/08/20 16:54	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/06/20 13:44	10/08/20 16:54	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/06/20 13:44	10/08/20 16:54	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/07/20 18:42	10/08/20 18:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**300**		10	10	mg/L			09/26/20 06:51	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.29**				SU			09/22/20 00:00	1

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

Lab Sample ID: MB 180-332195/6
Matrix: Water
Analysis Batch: 332195

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/03/20 06:50	1
Fluoride	<0.026		0.10	0.026	mg/L			10/03/20 06:50	1
Sulfate	<0.38		1.0	0.38	mg/L			10/03/20 06:50	1

Lab Sample ID: LCS 180-332195/5
Matrix: Water
Analysis Batch: 332195

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.3		mg/L		99	90 - 110
Fluoride	2.50	2.40		mg/L		96	90 - 110
Sulfate	50.0	47.6		mg/L		95	90 - 110

Lab Sample ID: 180-111426-3 MS
Matrix: Water
Analysis Batch: 332195

Client Sample ID: ARGWC-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.6		50.0	52.0		mg/L		97	90 - 110
Fluoride	0.33		2.50	2.70		mg/L		95	90 - 110
Sulfate	68	F1	50.0	112	F1	mg/L		87	90 - 110

Lab Sample ID: 180-111426-3 MSD
Matrix: Water
Analysis Batch: 332195

Client Sample ID: ARGWC-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.6		50.0	51.1		mg/L		95	90 - 110	2	20
Fluoride	0.33		2.50	2.65		mg/L		93	90 - 110	2	20
Sulfate	68	F1	50.0	109	F1	mg/L		82	90 - 110	2	20

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

Lab Sample ID: MB 180-332470/1-A
Matrix: Water
Analysis Batch: 332836

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 332470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00038		0.0020	0.00038	mg/L		10/06/20 13:44	10/08/20 15:50	1
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/06/20 13:44	10/08/20 15:50	1
Barium	<0.0016		0.010	0.0016	mg/L		10/06/20 13:44	10/08/20 15:50	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/06/20 13:44	10/08/20 15:50	1
Boron	<0.039		0.080	0.039	mg/L		10/06/20 13:44	10/08/20 15:50	1
Cadmium	<0.00022		0.0010	0.00022	mg/L		10/06/20 13:44	10/08/20 15:50	1
Calcium	<0.13		0.50	0.13	mg/L		10/06/20 13:44	10/08/20 15:50	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/06/20 13:44	10/08/20 15:50	1
Cobalt	<0.00013		0.00050	0.00013	mg/L		10/06/20 13:44	10/08/20 15:50	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/06/20 13:44	10/08/20 15:50	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/06/20 13:44	10/08/20 15:50	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/06/20 13:44	10/08/20 15:50	1

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

Lab Sample ID: MB 180-332470/1-A
Matrix: Water
Analysis Batch: 332836

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 332470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.0015		0.0050	0.0015	mg/L		10/06/20 13:44	10/08/20 15:50	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/06/20 13:44	10/08/20 15:50	1

Lab Sample ID: LCS 180-332470/2-A
Matrix: Water
Analysis Batch: 332836

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 332470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.258		mg/L		103	80 - 120
Arsenic	1.00	0.943		mg/L		94	80 - 120
Barium	1.00	1.07		mg/L		107	80 - 120
Beryllium	0.500	0.522		mg/L		104	80 - 120
Boron	1.25	1.26		mg/L		100	80 - 120
Cadmium	0.500	0.495		mg/L		99	80 - 120
Calcium	25.0	26.8		mg/L		107	80 - 120
Chromium	0.500	0.490		mg/L		98	80 - 120
Cobalt	0.500	0.470		mg/L		94	80 - 120
Lead	0.500	0.487		mg/L		97	80 - 120
Lithium	0.500	0.458		mg/L		92	80 - 120
Molybdenum	0.500	0.500		mg/L		100	80 - 120
Selenium	1.00	0.976		mg/L		98	80 - 120
Thallium	1.00	0.951		mg/L		95	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-332506/1-A
Matrix: Water
Analysis Batch: 332827

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 332506

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/07/20 18:42	10/08/20 18:25	1

Lab Sample ID: LCS 180-332506/2-A
Matrix: Water
Analysis Batch: 332827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 332506

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00240		mg/L		96	80 - 120

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

Lab Sample ID: MB 180-331364/2
Matrix: Water
Analysis Batch: 331364

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		10	10	mg/L			09/26/20 06:51	1

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

Lab Sample ID: LCS 180-331364/1
Matrix: Water
Analysis Batch: 331364

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			632	624		mg/L		99	80 - 120		

Lab Sample ID: 180-111426-3 DU
Matrix: Water
Analysis Batch: 331364

Client Sample ID: ARGWC-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	310			306		mg/L				2	10

Lab Sample ID: 180-111426-4 DU
Matrix: Water
Analysis Batch: 331364

Client Sample ID: DUP-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	300			310		mg/L				5	10

QC Association Summary

Client: Southern Company
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-1

HPLC/IC

Analysis Batch: 332195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total/NA	Water	EPA 300.0 R2.1	
180-111426-2	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-111426-2	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-111426-3	ARGWC-23	Total/NA	Water	EPA 300.0 R2.1	
180-111426-4	DUP-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-332195/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-332195/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-111426-3 MS	ARGWC-23	Total/NA	Water	EPA 300.0 R2.1	
180-111426-3 MSD	ARGWC-23	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 332470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total Recoverable	Water	3005A	
180-111426-2	ARGWC-22	Total Recoverable	Water	3005A	
180-111426-3	ARGWC-23	Total Recoverable	Water	3005A	
180-111426-4	DUP-01	Total Recoverable	Water	3005A	
MB 180-332470/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-332470/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 332506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total/NA	Water	7470A	
180-111426-2	ARGWC-22	Total/NA	Water	7470A	
180-111426-3	ARGWC-23	Total/NA	Water	7470A	
180-111426-4	DUP-01	Total/NA	Water	7470A	
MB 180-332506/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-332506/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 332827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total/NA	Water	EPA 7470A	332506
180-111426-2	ARGWC-22	Total/NA	Water	EPA 7470A	332506
180-111426-3	ARGWC-23	Total/NA	Water	EPA 7470A	332506
180-111426-4	DUP-01	Total/NA	Water	EPA 7470A	332506
MB 180-332506/1-A	Method Blank	Total/NA	Water	EPA 7470A	332506
LCS 180-332506/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	332506

Analysis Batch: 332836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total Recoverable	Water	EPA 6020B	332470
180-111426-2	ARGWC-22	Total Recoverable	Water	EPA 6020B	332470
180-111426-3	ARGWC-23	Total Recoverable	Water	EPA 6020B	332470
180-111426-4	DUP-01	Total Recoverable	Water	EPA 6020B	332470
MB 180-332470/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	332470
LCS 180-332470/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	332470

QC Association Summary

Client: Southern Company
Job ID: 180-111426-1
Project/Site: Plant Arkwright Background Wells 22 23

General Chemistry

Analysis Batch: 331364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total/NA	Water	SM 2540C	
180-111426-2	ARGWC-22	Total/NA	Water	SM 2540C	
180-111426-3	ARGWC-23	Total/NA	Water	SM 2540C	
180-111426-4	DUP-01	Total/NA	Water	SM 2540C	
MB 180-331364/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-331364/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-111426-3 DU	ARGWC-23	Total/NA	Water	SM 2540C	
180-111426-4 DU	DUP-01	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 333009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-2	ARGWC-22	Total/NA	Water	Field Sampling	
180-111426-3	ARGWC-23	Total/NA	Water	Field Sampling	
180-111426-4	DUP-01	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 America

244-ATLANTA

Client Information	Sampler: Daniel Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com	COC No: 180-64070-12387.1
			Page: Page 1 of 1
Company: Southern Company		**Analysis Requested**	Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard		
City: Atlanta	TAT Requested (days):		
State, Zip: GA, 30308			
Phone:	PO #: GPC11064570		
Email: JAbraham@southernco.com	WO #:		
Project Name: CCR - Plant Arkwright	Project #: 18020201		
Site: Georgia	SSOW#:		

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

Sample Identification	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 - Radium 226	Ra226Ra228_GFPC - Ra 226/228	9320_Ra228 - Radium 228	300_ORGFM_28D - Chloride Fluoride Sulfate	6020B, 7470A	2540C_Calcd - Solids, Total Dissolved (TDS)	6020B - Lead	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D	N	D	N	D		
EB-01	9/22/20	1400	G	W			X	X	X	X	X	X		4	
ARGWC-22	↓	1552	G	W			X	X	X	X	X	X		4	pH=5.77
ARGWC-23	↓	1722	G	W			X	X	X	X	X	X		4	pH=6.29
DUP-01	↓	—	G	W			X	X	X	X	X	X		4	pH=6.29

180-111426 Chain of Custody

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

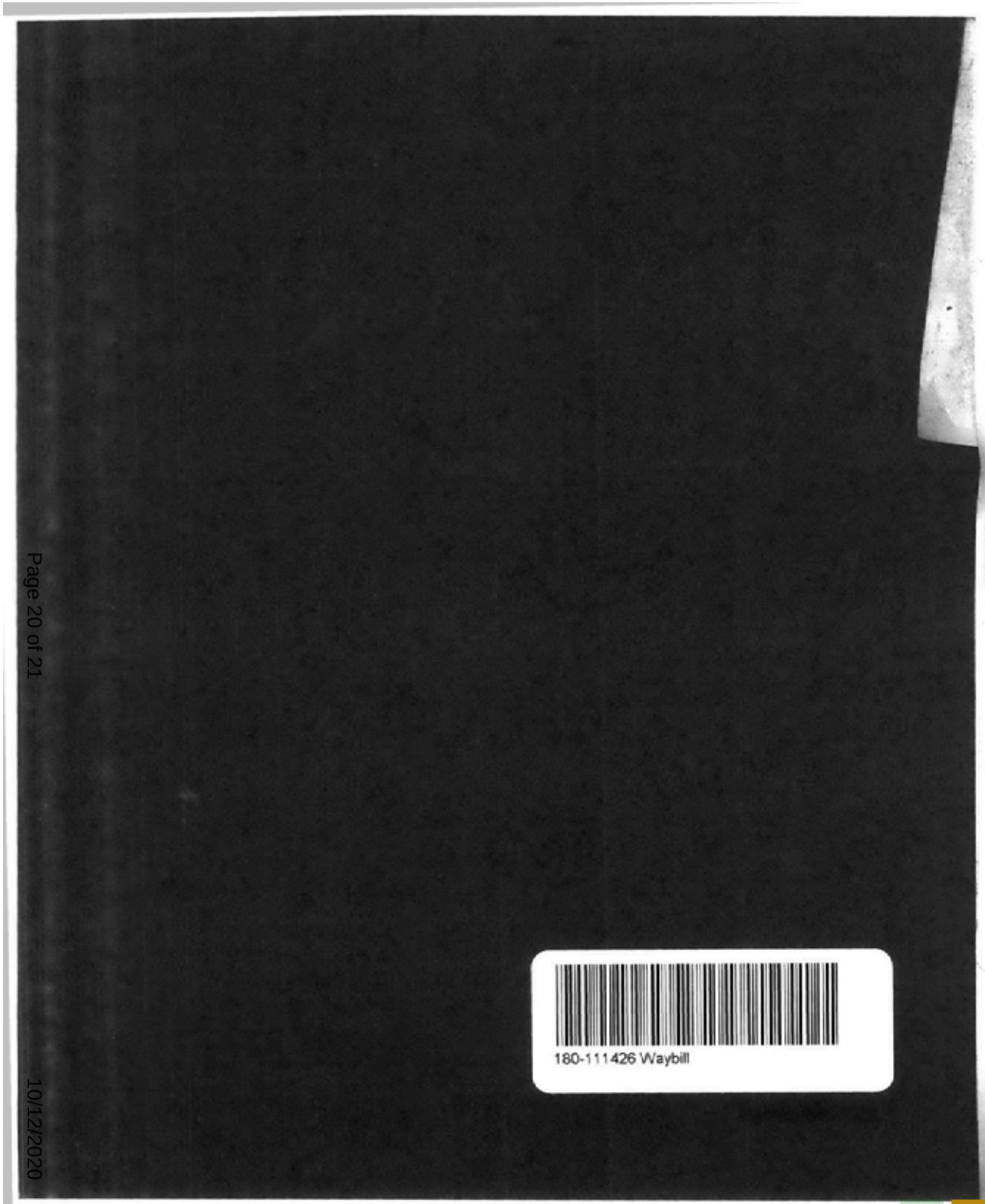
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by: Daniel Howard	Date/Time: 9/23/20 / 1245	Company:	Received by: [signature]	Date/Time: 9/24/20 915	Company: EORA
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



180-111426 Waybill

Do Not Lift Using This Tag

ORIGIN ID:NCDA (770) 421-3382
DANIEL HOWARD
WOOD E & IS
STE 100
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 23SEP20
ACTWGT: 57.90 LB
CAD: 6994634/SSFE2110
DIMS: 23x13x13 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058

INV:
PO:
REF:
DEPT:

FedEx Express

1 of 2

TRK# 0201 3971 2220 7888

MASTER

THU - 24 SEP 10:30A
PRIORITY OVERNIGHT

NA AGCA

15238
PA-US PIT

Uncorrected temp
Thermometer ID
CF 0
Initials
PT-WI-SR-001 effective 11/8/18

RT 97

FZ

09.24

Page 20 of 21

10/12/2020

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-111426-1

Login Number: 111426
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: 180-111426-2
Client Project/Site: Plant Arkwright Background Wells 22 23

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
11/5/2020 9:58:06 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-111426-2

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-111426-2

Comments
No additional comments.

Receipt
The samples were received on 9/24/2020 9:15 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

RAD
Methods 903.0, 9315: Radium-226 prep batch 160-484436;
The Ra-226 laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery (153%/134%) associated with the following sample is outside the upper QC limit of (125%) indicating a potential positive bias for that analyte. This analyte was observed above the MDC/RL in the associated sample. All other QC are within limits (MB, RER/RPD). Per client request, the data have been reported with this narrative. (LCS 160-484436/1-A), (LCSD 160-484436/2-A) and (MB 160-484436/23-A)

Methods 903.0, 9315: Radium-226 prep batch 160-484436:
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. (LCS 160-484436/1-A), (LCSD 160-484436/2-A) and (MB 160-484436/23-A)

Method 9315: Radium-226 prep batch 160-484436:
The Ra-226 laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery (153%/134%) associated with the following sample(s) is outside the upper QC limit of (125%) indicating a potential positive bias for that analyte. This analyte was not observed above the MDC/RL in the associated samples; therefore the sample data is not adversely affected by this excursion. The data have been reported with this narrative.
EB-01 (180-111426-1), ARGWC-22 (180-111426-2), ARGWC-23 (180-111426-3), (LCS 160-484436/1-A) and (LCSD 160-484436/2-A)

Method 9315: Radium-226 prep batch 160-484436:
The Ra-226 laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery (153%/134%) associated with the following sample(s) is outside the upper QC limit of (125%) indicating a potential positive bias for that analyte. This analyte was observed above the MDC/RL in the associated samples. All other QC are within limits (MB, RER/RPD). Per client request, the data have been reported with this narrative.
DUP-01 (180-111426-4), (LCS 160-484436/1-A) and (LCSD 160-484436/2-A)

Method 9315: Radium-226 prep batch 160-484436:
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. EB-01 (180-111426-1), ARGWC-22 (180-111426-2), ARGWC-23 (180-111426-3), DUP-01 (180-111426-4), (LCS 160-484436/1-A), (LCSD 160-484436/2-A) and (MB 160-484436/23-A)

Methods 904.0, 9320: Ra 228 prep batch: 160-484437
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. EB-01 (180-111426-1), ARGWC-22 (180-111426-2), ARGWC-23 (180-111426-3) and DUP-01 (180-111426-4)

Method PrecSep_0: Radium 228 Prep Batch 160-484437:
Insufficient sample volume was available to perform a sample duplicate for the following samples: EB-01 (180-111426-1), ARGWC-22 (180-111426-2), ARGWC-23 (180-111426-3) and DUP-01 (180-111426-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-484436:

Job ID: 180-111426-2 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Insufficient sample volume was available to perform a sample duplicate for the following samples: EB-01 (180-111426-1), ARGWC-22 (180-111426-2), ARGWC-23 (180-111426-3) and DUP-01 (180-111426-4). 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
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Qualifiers

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

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
Alaska (UST)	State	20-001	05-06-22
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	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-20
Iowa	State	373	12-01-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

Sample Summary

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-111426-1	EB-01	Water	09/22/20 14:00	09/24/20 09:15	
180-111426-2	ARGWC-22	Water	09/22/20 15:52	09/24/20 09:15	
180-111426-3	ARGWC-23	Water	09/22/20 17:22	09/24/20 09:15	
180-111426-4	DUP-01	Water	09/22/20 00:00	09/24/20 09:15	

Method Summary

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

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
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: EB-01
Lab Sample ID: 180-111426-1
Date Collected: 09/22/20 14:00
Matrix: Water
Date Received: 09/24/20 09:15

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			1000.95 mL	1.0 g	484436	10/02/20 06:38	AVB	TAL SL
Total/NA	Analysis	9315		1			486850	10/26/20 09:56	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.95 mL	1.0 g	484437	10/02/20 07:05	AVB	TAL SL
Total/NA	Analysis	9320		1			486425	10/20/20 12:49	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			487753	11/02/20 20:51	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-22
Lab Sample ID: 180-111426-2
Date Collected: 09/22/20 15:52
Matrix: Water
Date Received: 09/24/20 09:15

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			1000.70 mL	1.0 g	484436	10/02/20 06:38	AVB	TAL SL
Total/NA	Analysis	9315		1			486850	10/26/20 09:56	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.70 mL	1.0 g	484437	10/02/20 07:05	AVB	TAL SL
Total/NA	Analysis	9320		1			486271	10/20/20 12:55	SCB	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			487753	11/02/20 20:51	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-23
Lab Sample ID: 180-111426-3
Date Collected: 09/22/20 17:22
Matrix: Water
Date Received: 09/24/20 09:15

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			999.11 mL	1.0 g	484436	10/02/20 06:38	AVB	TAL SL
Total/NA	Analysis	9315		1			486850	10/26/20 09:56	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.11 mL	1.0 g	484437	10/02/20 07:05	AVB	TAL SL
Total/NA	Analysis	9320		1			486271	10/20/20 12:56	SCB	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			487753	11/02/20 20:51	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-01
Lab Sample ID: 180-111426-4
Date Collected: 09/22/20 00:00
Matrix: Water
Date Received: 09/24/20 09:15

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	484436	10/02/20 06:38	AVB	TAL SL
Total/NA	Analysis	9315		1			486850	10/26/20 09:57	SCB	TAL SL
	Instrument ID: GFPCRED									

Lab Chronicle

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: DUP-01
Date Collected: 09/22/20 00:00
Date Received: 09/24/20 09:15

Lab Sample ID: 180-111426-4
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			999.46 mL	1.0 g	484437	10/02/20 07:05	AVB	TAL SL
Total/NA	Analysis	9320		1			486271	10/20/20 12:56	SCB	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			487753	11/02/20 20:51	GRW	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
AVB = Amber Bleem
Batch Type: Analysis
GRW = George Witt
SCB = Sarah Bernsen

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-2

Client Sample ID: EB-01

Date Collected: 09/22/20 14:00
Date Received: 09/24/20 09:15

Lab Sample ID: 180-111426-1

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	0.0544	U *	0.105	0.106	1.00	0.189	pCi/L	10/02/20 06:38	10/26/20 09:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.5*		*40 - 110*	*10/02/20 06:38*	*10/26/20 09:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.109	U	0.313	0.313	1.00	0.542	pCi/L	10/02/20 07:05	10/20/20 12:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.5*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:49*	*1*
Y Carrier	*72.9*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:49*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.164	U	0.330	0.330	5.00	0.542	pCi/L		11/02/20 20:51	1

Client Sample Results

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: ARGWC-22
Lab Sample ID: 180-111426-2
Date Collected: 09/22/20 15:52
Matrix: Water
Date Received: 09/24/20 09:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.308	*	0.155	0.158	1.00	0.181	pCi/L	10/02/20 06:38	10/26/20 09:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.8*		*40 - 110*	*10/02/20 06:38*	*10/26/20 09:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.576		0.329	0.334	1.00	0.493	pCi/L	10/02/20 07:05	10/20/20 12:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.8*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:55*	*1*
Y Carrier	*75.1*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:55*	*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	0.884		0.364	0.369	5.00	0.493	pCi/L		11/02/20 20:51	1

Client Sample Results

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Client Sample ID: ARGWC-23
Lab Sample ID: 180-111426-3
Date Collected: 09/22/20 17:22
Matrix: Water
Date Received: 09/24/20 09:15

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	U *	0.119	0.119	1.00	0.175	pCi/L	10/02/20 06:38	10/26/20 09:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.7*		*40 - 110*	*10/02/20 06:38*	*10/26/20 09:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.119	U	0.304	0.304	1.00	0.565	pCi/L	10/02/20 07:05	10/20/20 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.7*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:56*	*1*
Y Carrier	*72.9*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:56*	*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	0.0177	U	0.326	0.326	5.00	0.565	pCi/L		11/02/20 20:51	1

Client Sample ID: DUP-01
Date Collected: 09/22/20 00:00
Date Received: 09/24/20 09:15

Lab Sample ID: 180-111426-4
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	1.28	*	0.287	0.309	1.00	0.202	pCi/L	10/02/20 06:38	10/26/20 09:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.9*		*40 - 110*	*10/02/20 06:38*	*10/26/20 09:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.874		0.393	0.402	1.00	0.563	pCi/L	10/02/20 07:05	10/20/20 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.9*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:56*	*1*
Y Carrier	*71.0*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:56*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.16		0.487	0.507	5.00	0.563	pCi/L		11/02/20 20:51	1

QC Sample Results

Client: Southern Company
Project/Site: Plant Arkwright Background Wells 22 23

Job ID: 180-111426-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-484436/23-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 484436

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1527	U	0.117	0.118	1.00	0.166	pCi/L	10/02/20 06:38	10/26/20 11:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/02/20 06:38*	*10/26/20 11:48*	*1*

Lab Sample ID: LCS 160-484436/1-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484436

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	17.39	*	1.87	1.00	0.187	pCi/L	153	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.0*		*40 - 110*

Lab Sample ID: LCSD 160-484436/2-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 484436

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			11.3	15.16	*	1.65	1.00	0.181	pCi/L	134	75 - 125	0.64	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*79.0*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-484437/23-A
Matrix: Water
Analysis Batch: 486271

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 484437

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2421	U	0.285	0.286	1.00	0.470	pCi/L	10/02/20 07:05	10/20/20 12:57	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:57*	*1*
Y Carrier	*79.6*		*40 - 110*	*10/02/20 07:05*	*10/20/20 12:57*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-484437/1-A
Matrix: Water
Analysis Batch: 486425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484437

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			7.72	8.355		1.08	1.00	0.498	pCi/L	108	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.0*		*40 - 110*
Y Carrier	*82.2*		*40 - 110*

Lab Sample ID: LCSD 160-484437/2-A
Matrix: Water
Analysis Batch: 486425

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 484437

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			7.72	7.414		0.983	1.00	0.465	pCi/L	96	75 - 125	0.46	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*79.0*		*40 - 110*
Y Carrier	*77.8*		*40 - 110*

QC Association Summary

Client: Southern Company
Job ID: 180-111426-2
Project/Site: Plant Arkwright Background Wells 22 23

Rad

Prep Batch: 484436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total/NA	Water	PrecSep-21	
180-111426-2	ARGWC-22	Total/NA	Water	PrecSep-21	
180-111426-3	ARGWC-23	Total/NA	Water	PrecSep-21	
180-111426-4	DUP-01	Total/NA	Water	PrecSep-21	
MB 160-484436/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-484436/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-484436/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 484437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111426-1	EB-01	Total/NA	Water	PrecSep_0	
180-111426-2	ARGWC-22	Total/NA	Water	PrecSep_0	
180-111426-3	ARGWC-23	Total/NA	Water	PrecSep_0	
180-111426-4	DUP-01	Total/NA	Water	PrecSep_0	
MB 160-484437/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-484437/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-484437/2-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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244-ATLANTA

Client Information	Sampler: Daniel Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64070-12387.1
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page 1 of 1
Company: Southern Company				Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone:	PO #: GPC11064570			
Email: JAbraham@southernco.com	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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 (Water, Solid, Oil/Waste, Air, Tissue, Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226 - Radium 226	Ra226Ra228_GFPC - Ra 226/228	9320_Ra228 - Radium 228	300_ORGFM_28D - Chloride Fluoride Sulfate	6020B, 7470A	2540C_Calcd - Solids, Total Dissolved (TDS)	6020B - Lead	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D	N	D	N	D		
EB-01	9/22/20	1400	G	W			X	X	X	X	X	X		4	
ARGWC-22		1552	G	W			X	X	X	X	X	X		4	pH=5.77
ARGWC-23		1722	G	W			X	X	X	X	X	X		4	pH=6.29
DUP-01		—	G	W			X	X	X	X	X	X		4	pH=6.29

180-111426 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
1	Daniel Howard	9/23/20 / 1245			9/24/20 915	EDMIN
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

Do Not Lift Using This Tag

ORIGIN ID:NCDA (770) 421-3382
DANIEL HOWARD
WOOD E & IS
STE 100
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 23SEP20
ACTWGT: 57.90 LB
CAD: 6994634/SSFE2110
DIMS: 23x13x13 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058

INV:
PO: REF:
DEPT:

FedEx Express

1 of 2
TRK# 0201 3971 2220 7888
MASTER

THU - 24 SEP 10:30A
PRIORITY OVERNIGHT

NA AGCA

15238
PA-US PIT

Uncorrected temp
Thermometer ID
CF 0 Initials
PT-WI-SR-001 effective 11/8/18

RT 97
FZ

09.24

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 (Sub Contract Lab)	Sampler:	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-412754.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin: Georgia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-111426-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/27/2020			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Plant Arkwright Background Wells 22 23	Project #: 18020201			
Site: Arkwright	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 (Wwater, Sssolid, Oowaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (GFPC) - 21 day decay	9320_Ra228/PrecSep_0 Radium 228	Ra226Ra228_GFPC/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
EB-01 (180-111426-1)	9/22/20	14:00 Eastern		Water			X	X	X	1	
ARGWC-22 (180-111426-2)	9/22/20	15:52 Eastern		Water			X	X	X	1	
ARGWC-23 (180-111426-3)	9/22/20	17:22 Eastern		Water			X	X	X	1	
DUP-01 (180-111426-4)	9/22/20	Eastern		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		9/25/20 1500		FedEx		
2	FedEx				9/26/20 08:20	ETASTL
3						

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: 180-111426-2

Login Number: 111426
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	

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-111426-2

Login Number: 111426
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 09/26/20 11:52 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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: 180-111648-1
Client Project/Site: CCR - Plant Arkwright AP-2DAS
Revision: 2

For:
Southern Company
241 Ralph McGill Blvd SE
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Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
1/15/2021 10:19:16 AM

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PA Lab ID: 02-00416

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Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Job ID: 180-111648-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-111648-1

Comments
011521 Revised report to add Cadmium at client request. This report replaces the report previously issued on 122920.
102920 Revised Report to correct silver units from ug/L to mg/L. This report replaces the report previously issued on 102720.

Receipt
The samples were received on 9/30/2020 9:00 AM, 10/1/2020 9:00 AM and 10/2/2020 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.0º C, 2.4º C, 2.7º C and 3.6º C.

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 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
Job ID: 180-111648-1
Project/Site: CCR - Plant Arkwright AP-2DAS

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-111648-1
Project/Site: CCR - Plant Arkwright AP-2DAS

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	12-21-20
Illinois	NELAP	004375	12-21-20
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	12-21-20
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	12-21-20
New Jersey	NELAP	PA005	12-21-20
New York	NELAP	11182	12-21-20
North Carolina (WW/SW)	State	434	11-01-20
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	12-21-20
Pennsylvania	NELAP	02-00416	11-15-20
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	11-23-20
Texas	NELAP	T104704528	12-21-20
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	12-21-20
Virginia	NELAP	10043	12-21-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-111648-1	ARGWA-19	Water	09/29/20 15:25	09/30/20 09:00	
180-111686-1	ARGWA-20	Water	09/30/20 11:28	10/01/20 09:00	
180-111686-2	EB-02	Water	09/30/20 12:20	10/01/20 09:00	
180-111686-3	ARGWC-22	Water	09/30/20 14:00	10/01/20 09:00	
180-111686-4	ARAMW-1	Water	09/30/20 15:56	10/01/20 09:00	
180-111740-1	FB-02	Water	10/01/20 09:35	10/02/20 09:00	
180-111740-2	ARGWC-23	Water	10/01/20 11:58	10/02/20 09:00	
180-111740-3	DUP-02	Water	10/01/20 00:00	10/02/20 09:00	
180-111741-1	ARAMW-2	Water	10/01/20 15:12	10/02/20 09:00	
180-111741-2	ARGWC-21	Water	10/01/20 16:08	10/02/20 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	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 = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWA-19
Date Collected: 09/29/20 15:25
Date Received: 09/30/20 09:00

Lab Sample ID: 180-111648-1
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			332371	10/06/20 17:47	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333113	10/12/20 15:58	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334462	10/22/20 14:59	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	331996	10/01/20 12:36	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333130	09/29/20 15:25	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-20
Date Collected: 09/30/20 11:28
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-1
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			332371	10/06/20 20:14	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 20:13	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332159	10/02/20 14:35	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333128	09/30/20 11:28	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: EB-02
Date Collected: 09/30/20 12:20
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-2
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			332371	10/06/20 08:45	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 20:17	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332159	10/02/20 14:35	GRB	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-22
Date Collected: 09/30/20 14:00
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-3
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			332371	10/06/20 21:16	MJH	TAL PIT
	Instrument ID: INTEGRION									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWC-22

Date Collected: 09/30/20 14:00
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-3

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		10			332371	10/06/20 21:37	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 20:21	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332159	10/02/20 14:35	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333128	09/30/20 14:00	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-1

Date Collected: 09/30/20 15:56
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-4

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			332371	10/06/20 22:39	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total/NA	Analysis	EPA 300.0 R2.1		5			332371	10/06/20 23:00	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 20:24	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332159	10/02/20 14:35	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333128	09/30/20 15:56	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FB-02

Date Collected: 10/01/20 09:35
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-1

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			333015	10/12/20 15:12	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 20:53	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			25 mL	25 mL	333418	10/14/20 13:01	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			333677	10/15/20 19:33	KEM	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332329	10/05/20 15:06	GRB	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWC-23

Date Collected: 10/01/20 11:58
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-2

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			333015	10/12/20 13:06	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 20:56	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			25 mL	25 mL	333418	10/14/20 13:01	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			333677	10/15/20 19:34	KEM	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332329	10/05/20 15:06	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333127	10/01/20 11:58	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-02

Date Collected: 10/01/20 00:00
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-3

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			333015	10/12/20 13:27	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 21:00	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332342	10/05/20 16:37	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333127	10/01/20 00:00	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-2

Date Collected: 10/01/20 15:12
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-1

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			333015	10/12/20 12:25	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total/NA	Analysis	EPA 300.0 R2.1		5			333147	10/13/20 07:56	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 21:03	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332329	10/05/20 15:06	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333127	10/01/20 15:12	AGJ	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWC-21

Date Collected: 10/01/20 16:08
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-2

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			333015	10/12/20 12:46	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total/NA	Analysis	EPA 300.0 R2.1		5			333147	10/13/20 08:17	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	333214	10/13/20 09:41	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			334271	10/21/20 21:07	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	332329	10/05/20 15:06	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			333127	10/01/20 16:08	AGJ	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

KHM = Kyle Mucroski
MM1 = Mary Beth Miller
TJO = Tyler Oliver

Batch Type: Analysis

AGJ = Andy Johnson
GRB = Gabriel Berghe
KEM = Kimberly Mahoney
MJH = Matthew Hartman
RSK = Robert Kurtz

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWA-19

Date Collected: 09/29/20 15:25
Date Received: 09/30/20 09:00

Lab Sample ID: 180-111648-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10**		1.0	0.32	mg/L			10/06/20 17:47	1
Fluoride	**0.051**	**J**	0.10	0.026	mg/L			10/06/20 17:47	1
Sulfate	**8.4**		1.0	0.38	mg/L			10/06/20 17:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/12/20 15:58	10/22/20 14:59	1
Barium	**0.040**		0.010	0.0016	mg/L		10/12/20 15:58	10/22/20 14:59	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/12/20 15:58	10/22/20 14:59	1
Boron	<0.039		0.080	0.039	mg/L		10/12/20 15:58	10/22/20 14:59	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/12/20 15:58	10/22/20 14:59	1
Calcium	**12**		0.50	0.13	mg/L		10/12/20 15:58	10/22/20 14:59	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/12/20 15:58	10/22/20 14:59	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		10/12/20 15:58	10/22/20 14:59	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/12/20 15:58	10/22/20 14:59	1
Lithium	**0.0041**	**J**	0.0050	0.0034	mg/L		10/12/20 15:58	10/22/20 14:59	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/12/20 15:58	10/22/20 14:59	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/12/20 15:58	10/22/20 14:59	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/12/20 15:58	10/22/20 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**110**		10	10	mg/L			10/01/20 12:36	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.83**				SU			09/29/20 15:25	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWA-20

Date Collected: 09/30/20 11:28
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.6		1.0	0.32	mg/L			10/06/20 20:14	1
Fluoride	0.032	J	0.10	0.026	mg/L			10/06/20 20:14	1
Sulfate	15		1.0	0.38	mg/L			10/06/20 20:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 20:13	1
Barium	0.080		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 20:13	1
Beryllium	0.00019	J	0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 20:13	1
Boron	0.083		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 20:13	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 20:13	1
Calcium	9.9		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 20:13	1
Chromium	0.0057		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 20:13	1
Cobalt	0.00031	J	0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 20:13	1
Lead	0.00022	J	0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 20:13	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 20:13	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 20:13	1
Selenium	0.0016	J	0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 20:13	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 20:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	82		10	10	mg/L			10/02/20 14:35	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.65				SU			09/30/20 11:28	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: EB-02

Date Collected: 09/30/20 12:20
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/06/20 08:45	1
Fluoride	<0.026		0.10	0.026	mg/L			10/06/20 08:45	1
Sulfate	<0.38		1.0	0.38	mg/L			10/06/20 08:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 20:17	1
Barium	<0.0016		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 20:17	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 20:17	1
Boron	<0.039		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 20:17	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 20:17	1
Calcium	<0.13		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 20:17	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 20:17	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 20:17	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 20:17	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 20:17	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 20:17	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 20:17	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 20:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			10/02/20 14:35	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWC-22

Date Collected: 09/30/20 14:00
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.0**		1.0	0.32	mg/L			10/06/20 21:16	1
Fluoride	**0.045**	**J**	0.10	0.026	mg/L			10/06/20 21:16	1
Sulfate	**650**		10	3.8	mg/L			10/06/20 21:37	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 20:21	1
Barium	**0.033**		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 20:21	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 20:21	1
Boron	**2.9**		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 20:21	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 20:21	1
Calcium	**200**		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 20:21	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 20:21	1
Cobalt	**0.0055**		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 20:21	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 20:21	1
Lithium	**0.014**		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 20:21	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 20:21	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 20:21	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1200**		10	10	mg/L			10/02/20 14:35	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.81**				SU			09/30/20 14:00	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARAMW-1

Date Collected: 09/30/20 15:56
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.2**		1.0	0.32	mg/L			10/06/20 22:39	1
Fluoride	**0.20**		0.10	0.026	mg/L			10/06/20 22:39	1
Sulfate	**230**		5.0	1.9	mg/L			10/06/20 23:00	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 20:24	1
Barium	**0.052**		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 20:24	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 20:24	1
Boron	**0.98**		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 20:24	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 20:24	1
Calcium	**100**		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 20:24	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 20:24	1
Cobalt	**0.0010**	**J**	0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 20:24	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 20:24	1
Lithium	**0.0091**		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 20:24	1
Molybdenum	**0.0054**	**J**	0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 20:24	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 20:24	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 20:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**520**		10	10	mg/L			10/02/20 14:35	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.16**				SU			09/30/20 15:56	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: FB-02
Date Collected: 10/01/20 09:35
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/12/20 15:12	1
Fluoride	<0.026		0.10	0.026	mg/L			10/12/20 15:12	1
Sulfate	<0.38		1.0	0.38	mg/L			10/12/20 15:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 20:53	1
Barium	<0.0016		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 20:53	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 20:53	1
Boron	**0.11**		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 20:53	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 20:53	1
Calcium	<0.13		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 20:53	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 20:53	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 20:53	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 20:53	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 20:53	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 20:53	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 20:53	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 20:53	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/14/20 13:01	10/15/20 19:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			10/05/20 15:06	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWC-23

Date Collected: 10/01/20 11:58
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.8**		1.0	0.32	mg/L			10/12/20 13:06	1
Fluoride	**0.32**		0.10	0.026	mg/L			10/12/20 13:06	1
Sulfate	**64**		1.0	0.38	mg/L			10/12/20 13:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 20:56	1
Barium	**0.17**		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 20:56	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 20:56	1
Boron	**0.49**		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 20:56	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 20:56	1
Calcium	**73**		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 20:56	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 20:56	1
Cobalt	**0.0052**		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 20:56	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 20:56	1
Lithium	**0.040**		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 20:56	1
Molybdenum	**0.064**		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 20:56	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 20:56	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 20:56	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/14/20 13:01	10/15/20 19:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**290**		10	10	mg/L			10/05/20 15:06	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.38**				SU			10/01/20 11:58	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: DUP-02

Date Collected: 10/01/20 00:00
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.8**		1.0	0.32	mg/L			10/12/20 13:27	1
Fluoride	**0.32**		0.10	0.026	mg/L			10/12/20 13:27	1
Sulfate	**63**		1.0	0.38	mg/L			10/12/20 13:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 21:00	1
Barium	**0.16**		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 21:00	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 21:00	1
Boron	**0.47**		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 21:00	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 21:00	1
Calcium	**72**		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 21:00	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 21:00	1
Cobalt	**0.0047**		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 21:00	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 21:00	1
Lithium	**0.039**		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 21:00	1
Molybdenum	**0.062**		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 21:00	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 21:00	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 21:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**290**		10	10	mg/L			10/05/20 16:37	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.38**				SU			10/01/20 00:00	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARAMW-2

Date Collected: 10/01/20 15:12
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		1.0	0.32	mg/L			10/12/20 12:25	1
Fluoride	0.098	J	0.10	0.026	mg/L			10/12/20 12:25	1
Sulfate	270		5.0	1.9	mg/L			10/13/20 07:56	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0085		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 21:03	1
Barium	0.075		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 21:03	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 21:03	1
Boron	0.95		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 21:03	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 21:03	1
Calcium	91		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 21:03	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 21:03	1
Cobalt	0.0036		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 21:03	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 21:03	1
Lithium	0.019		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 21:03	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 21:03	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 21:03	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 21:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	530		10	10	mg/L			10/05/20 15:06	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.96				SU			10/01/20 15:12	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

Client Sample ID: ARGWC-21

Date Collected: 10/01/20 16:08
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.3**		1.0	0.32	mg/L			10/12/20 12:46	1
Fluoride	**0.098**	**J**	0.10	0.026	mg/L			10/12/20 12:46	1
Sulfate	**210**		5.0	1.9	mg/L			10/13/20 08:17	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 21:07	1
Barium	**0.051**		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 21:07	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 21:07	1
Boron	**0.90**		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 21:07	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 21:07	1
Calcium	**79**		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 21:07	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 21:07	1
Cobalt	**0.00082**	**J**	0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 21:07	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 21:07	1
Lithium	**0.012**		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 21:07	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 21:07	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 21:07	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 21:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**500**		10	10	mg/L			10/05/20 15:06	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.99**				SU			10/01/20 16:08	1

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

Lab Sample ID: MB 180-332371/38
Matrix: Water
Analysis Batch: 332371

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/06/20 19:11	1
Fluoride	<0.026		0.10	0.026	mg/L			10/06/20 19:11	1
Sulfate	<0.38		1.0	0.38	mg/L			10/06/20 19:11	1

Lab Sample ID: MB 180-332371/6
Matrix: Water
Analysis Batch: 332371

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/06/20 05:29	1
Fluoride	<0.026		0.10	0.026	mg/L			10/06/20 05:29	1
Sulfate	<0.38		1.0	0.38	mg/L			10/06/20 05:29	1

Lab Sample ID: LCS 180-332371/37
Matrix: Water
Analysis Batch: 332371

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	48.4		mg/L		97	90 - 110
Fluoride	2.50	2.38		mg/L		95	90 - 110
Sulfate	50.0	47.0		mg/L		94	90 - 110

Lab Sample ID: LCS 180-332371/5
Matrix: Water
Analysis Batch: 332371

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Fluoride	2.50	2.40		mg/L		96	90 - 110
Sulfate	50.0	48.2		mg/L		96	90 - 110

Lab Sample ID: 180-111686-1 MS
Matrix: Water
Analysis Batch: 332371

Client Sample ID: ARGWA-20
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.6		50.0	54.0		mg/L		97	90 - 110
Fluoride	0.032	J	2.50	2.49		mg/L		98	90 - 110
Sulfate	15		50.0	62.8		mg/L		95	90 - 110

Lab Sample ID: 180-111686-1 MSD
Matrix: Water
Analysis Batch: 332371

Client Sample ID: ARGWA-20
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.6		50.0	53.7		mg/L		96	90 - 110	1	20
Fluoride	0.032	J	2.50	2.47		mg/L		98	90 - 110	0	20
Sulfate	15		50.0	62.4		mg/L		95	90 - 110	1	20

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

Lab Sample ID: MB 180-333015/6
Matrix: Water
Analysis Batch: 333015

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			10/12/20 06:06	1
Fluoride	<0.026		0.10	0.026	mg/L			10/12/20 06:06	1

Lab Sample ID: LCS 180-333015/5
Matrix: Water
Analysis Batch: 333015

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.3		mg/L		99	90 - 110
Fluoride	2.50	2.36		mg/L		95	90 - 110

Lab Sample ID: 180-111740-3 MS
Matrix: Water
Analysis Batch: 333015

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	3.8		50.0	56.1		mg/L		105	90 - 110
Fluoride	0.32		2.50	2.93		mg/L		105	90 - 110
Sulfate	63		50.0	112		mg/L		97	90 - 110

Lab Sample ID: 180-111740-3 MSD
Matrix: Water
Analysis Batch: 333015

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	3.8		50.0	57.1		mg/L		107	90 - 110	2	20
Fluoride	0.32		2.50	2.97		mg/L		106	90 - 110	1	20
Sulfate	63		50.0	114		mg/L		101	90 - 110	2	20

Lab Sample ID: MB 180-333147/6
Matrix: Water
Analysis Batch: 333147

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.38		1.0	0.38	mg/L			10/13/20 05:08	1

Lab Sample ID: LCS 180-333147/5
Matrix: Water
Analysis Batch: 333147

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	47.0		mg/L		94	90 - 110

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

Lab Sample ID: MB 180-333113/1-A
Matrix: Water
Analysis Batch: 334462

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 333113

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/12/20 15:58	10/22/20 14:08	1
Barium	<0.0016		0.010	0.0016	mg/L		10/12/20 15:58	10/22/20 14:08	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/12/20 15:58	10/22/20 14:08	1
Boron	<0.039		0.080	0.039	mg/L		10/12/20 15:58	10/22/20 14:08	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/12/20 15:58	10/22/20 14:08	1
Calcium	<0.13		0.50	0.13	mg/L		10/12/20 15:58	10/22/20 14:08	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/12/20 15:58	10/22/20 14:08	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		10/12/20 15:58	10/22/20 14:08	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/12/20 15:58	10/22/20 14:08	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/12/20 15:58	10/22/20 14:08	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/12/20 15:58	10/22/20 14:08	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/12/20 15:58	10/22/20 14:08	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/12/20 15:58	10/22/20 14:08	1

Lab Sample ID: LCS 180-333113/2-A
Matrix: Water
Analysis Batch: 334462

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 333113

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	1.02		mg/L		102	80 - 120
Barium	1.00	0.998		mg/L		100	80 - 120
Beryllium	0.500	0.516		mg/L		103	80 - 120
Boron	1.25	1.11		mg/L		89	80 - 120
Cadmium	0.500	0.522		mg/L		104	80 - 120
Calcium	25.0	27.6		mg/L		110	80 - 120
Chromium	0.500	0.502		mg/L		100	80 - 120
Cobalt	0.500	0.502		mg/L		100	80 - 120
Lead	0.500	0.505		mg/L		101	80 - 120
Lithium	0.500	0.489		mg/L		98	80 - 120
Molybdenum	0.500	0.525		mg/L		105	80 - 120
Selenium	1.00	1.05		mg/L		105	80 - 120
Silver	0.250	0.251		mg/L		101	80 - 120

Lab Sample ID: MB 180-333214/1-A
Matrix: Water
Analysis Batch: 334271

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 333214

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00031		0.0010	0.00031	mg/L		10/13/20 09:41	10/21/20 19:59	1
Barium	<0.0016		0.010	0.0016	mg/L		10/13/20 09:41	10/21/20 19:59	1
Beryllium	<0.00018		0.0025	0.00018	mg/L		10/13/20 09:41	10/21/20 19:59	1
Boron	<0.039		0.080	0.039	mg/L		10/13/20 09:41	10/21/20 19:59	1
Cadmium	<0.00022		0.0025	0.00022	mg/L		10/13/20 09:41	10/21/20 19:59	1
Calcium	<0.13		0.50	0.13	mg/L		10/13/20 09:41	10/21/20 19:59	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/13/20 09:41	10/21/20 19:59	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		10/13/20 09:41	10/21/20 19:59	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/13/20 09:41	10/21/20 19:59	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/13/20 09:41	10/21/20 19:59	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		10/13/20 09:41	10/21/20 19:59	1

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

Lab Sample ID: MB 180-333214/1-A
Matrix: Water
Analysis Batch: 334271

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 333214

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.0015		0.0050	0.0015	mg/L		10/13/20 09:41	10/21/20 19:59	1
Silver	<0.00018		0.0010	0.00018	mg/L		10/13/20 09:41	10/21/20 19:59	1

Lab Sample ID: LCS 180-333214/2-A
Matrix: Water
Analysis Batch: 334271

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 333214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	1.06		mg/L		106	80 - 120
Barium	1.00	1.06		mg/L		106	80 - 120
Beryllium	0.500	0.531		mg/L		106	80 - 120
Boron	1.25	1.34		mg/L		107	80 - 120
Cadmium	0.500	0.522		mg/L		104	80 - 120
Chromium	0.500	0.524		mg/L		105	80 - 120
Cobalt	0.500	0.524		mg/L		105	80 - 120
Lead	0.500	0.526		mg/L		105	80 - 120
Lithium	0.500	0.509		mg/L		102	80 - 120
Molybdenum	0.500	0.530		mg/L		106	80 - 120
Selenium	1.00	1.04		mg/L		104	80 - 120
Silver	0.250	0.257		mg/L		103	80 - 120

Lab Sample ID: LCS 180-333214/2-A
Matrix: Water
Analysis Batch: 334457

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 333214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25.0	27.7		mg/L		111	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-333418/1-A
Matrix: Water
Analysis Batch: 333677

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333418

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00013		0.00020	0.00013	mg/L		10/14/20 13:01	10/15/20 19:12	1

Lab Sample ID: LCS 180-333418/2-A
Matrix: Water
Analysis Batch: 333677

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333418

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00234		mg/L		94	80 - 120

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

Lab Sample ID: MB 180-331996/2
Matrix: Water
Analysis Batch: 331996

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		10	10	mg/L			10/01/20 12:36	1

Lab Sample ID: LCS 180-331996/1
Matrix: Water
Analysis Batch: 331996

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			714	606		mg/L		85	80 - 120		

Lab Sample ID: MB 180-332159/2
Matrix: Water
Analysis Batch: 332159

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		10	10	mg/L			10/02/20 14:35	1

Lab Sample ID: LCS 180-332159/1
Matrix: Water
Analysis Batch: 332159

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			714	742		mg/L		104	80 - 120		

Lab Sample ID: 180-111686-4 DU
Matrix: Water
Analysis Batch: 332159

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	520			516		mg/L				0.4	10

Lab Sample ID: MB 180-332329/2
Matrix: Water
Analysis Batch: 332329

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		10	10	mg/L			10/05/20 15:06	1

Lab Sample ID: LCS 180-332329/1
Matrix: Water
Analysis Batch: 332329

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			357	336		mg/L		94	80 - 120		

Lab Sample ID: MB 180-332342/2
Matrix: Water
Analysis Batch: 332342

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		10	10	mg/L			10/05/20 16:37	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

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

Lab Sample ID: LCS 180-332342/1
Matrix: Water
Analysis Batch: 332342

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			357	318		mg/L		89	80 - 120		

Lab Sample ID: 180-111740-3 DU
Matrix: Water
Analysis Batch: 332342

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	290			310		mg/L				8	10

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

HPLC/IC

Analysis Batch: 332371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	Total/NA	Water	EPA 300.0 R2.1	
180-111686-1	ARGWA-20	Total/NA	Water	EPA 300.0 R2.1	
180-111686-2	EB-02	Total/NA	Water	EPA 300.0 R2.1	
180-111686-3	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-111686-3	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-111686-4	ARAMW-1	Total/NA	Water	EPA 300.0 R2.1	
180-111686-4	ARAMW-1	Total/NA	Water	EPA 300.0 R2.1	
MB 180-332371/38	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 180-332371/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-332371/37	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-332371/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-111686-1 MS	ARGWA-20	Total/NA	Water	EPA 300.0 R2.1	
180-111686-1 MSD	ARGWA-20	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 333015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-1	FB-02	Total/NA	Water	EPA 300.0 R2.1	
180-111740-2	ARGWC-23	Total/NA	Water	EPA 300.0 R2.1	
180-111740-3	DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-111741-1	ARAMW-2	Total/NA	Water	EPA 300.0 R2.1	
180-111741-2	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
MB 180-333015/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-333015/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-111740-3 MS	DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-111740-3 MSD	DUP-02	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 333147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111741-1	ARAMW-2	Total/NA	Water	EPA 300.0 R2.1	
180-111741-2	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
MB 180-333147/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-333147/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 333113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	Total Recoverable	Water	3005A	
MB 180-333113/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-333113/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 333214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111686-1	ARGWA-20	Total Recoverable	Water	3005A	
180-111686-2	EB-02	Total Recoverable	Water	3005A	
180-111686-3	ARGWC-22	Total Recoverable	Water	3005A	
180-111686-4	ARAMW-1	Total Recoverable	Water	3005A	
180-111740-1	FB-02	Total Recoverable	Water	3005A	
180-111740-2	ARGWC-23	Total Recoverable	Water	3005A	
180-111740-3	DUP-02	Total Recoverable	Water	3005A	
180-111741-1	ARAMW-2	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 333214 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111741-2	ARGWC-21	Total Recoverable	Water	3005A	
MB 180-333214/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-333214/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 333418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-1	FB-02	Total/NA	Water	7470A	
180-111740-2	ARGWC-23	Total/NA	Water	7470A	
MB 180-333418/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-333418/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 333677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-1	FB-02	Total/NA	Water	EPA 7470A	333418
180-111740-2	ARGWC-23	Total/NA	Water	EPA 7470A	333418
MB 180-333418/1-A	Method Blank	Total/NA	Water	EPA 7470A	333418
LCS 180-333418/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	333418

Analysis Batch: 334271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111686-1	ARGWA-20	Total Recoverable	Water	EPA 6020B	333214
180-111686-2	EB-02	Total Recoverable	Water	EPA 6020B	333214
180-111686-3	ARGWC-22	Total Recoverable	Water	EPA 6020B	333214
180-111686-4	ARAMW-1	Total Recoverable	Water	EPA 6020B	333214
180-111740-1	FB-02	Total Recoverable	Water	EPA 6020B	333214
180-111740-2	ARGWC-23	Total Recoverable	Water	EPA 6020B	333214
180-111740-3	DUP-02	Total Recoverable	Water	EPA 6020B	333214
180-111741-1	ARAMW-2	Total Recoverable	Water	EPA 6020B	333214
180-111741-2	ARGWC-21	Total Recoverable	Water	EPA 6020B	333214
MB 180-333214/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	333214
LCS 180-333214/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	333214

Analysis Batch: 334457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-333214/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	333214

Analysis Batch: 334462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	Total Recoverable	Water	EPA 6020B	333113
MB 180-333113/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	333113
LCS 180-333113/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	333113

General Chemistry

Analysis Batch: 331996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	Total/NA	Water	SM 2540C	
MB 180-331996/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-331996/1	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-1

General Chemistry

Analysis Batch: 332159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111686-1	ARGWA-20	Total/NA	Water	SM 2540C	
180-111686-2	EB-02	Total/NA	Water	SM 2540C	
180-111686-3	ARGWC-22	Total/NA	Water	SM 2540C	
180-111686-4	ARAMW-1	Total/NA	Water	SM 2540C	
MB 180-332159/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-332159/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-111686-4 DU	ARAMW-1	Total/NA	Water	SM 2540C	

Analysis Batch: 332329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-1	FB-02	Total/NA	Water	SM 2540C	
180-111740-2	ARGWC-23	Total/NA	Water	SM 2540C	
180-111741-1	ARAMW-2	Total/NA	Water	SM 2540C	
180-111741-2	ARGWC-21	Total/NA	Water	SM 2540C	
MB 180-332329/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-332329/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 332342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-3	DUP-02	Total/NA	Water	SM 2540C	
MB 180-332342/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-332342/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-111740-3 DU	DUP-02	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 333127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-2	ARGWC-23	Total/NA	Water	Field Sampling	
180-111740-3	DUP-02	Total/NA	Water	Field Sampling	
180-111741-1	ARAMW-2	Total/NA	Water	Field Sampling	
180-111741-2	ARGWC-21	Total/NA	Water	Field Sampling	

Analysis Batch: 333128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111686-1	ARGWA-20	Total/NA	Water	Field Sampling	
180-111686-3	ARGWC-22	Total/NA	Water	Field Sampling	
180-111686-4	ARAMW-1	Total/NA	Water	Field Sampling	

Analysis Batch: 333130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	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

244- ATLANTA

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Client Information	Sampler: DHoward	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64149-11995.1
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page 1 of 3
Company: Southern Company		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			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: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone:	PO #: GPC11084570			
Email: JAbraham@southernco.com	WO #:			Other:
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	XD	XD		
ARGWA-19	9/29/20	1525	G	W			X	X	X	X	X	X		pH=5.83

180-111648 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
Daniel Howard	9/29/20 1745	Wood	[signature]	9-30-20 900	ESAT
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

244- ATLANTA

eurofins | Environment Testing America

Client Information

Field	Value
Sampler	D Howard
Phone	
Lab PM	Brown, Shali
E-Mail	Shali.Brown@Eurofinset.com
Carrier Tracking No(s)	
COC No	180-64149-11895.3
Page	Page 1 of 1
Job #	
Client Contact	Joju Abraham
Company	Southern Company
Address	241 Ralph McGill Blvd SE B10185
City	Atlanta
State, Zip	GA, 30308
Phone	
Email	JAbraham@southernco.com
Project Name	CCR - Plant Arkwright
Site	Georgia
Due Date Requested	Standard
TAT Requested (days)	
PO #	GPC11064570
WO #	
Project #	18020201
SSOW#	

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

Analysis Requested

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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	D	D		
ARGWA-20	9/30/20	1128	G	W			X	X	X	X	X	X	3	pH=5.65
EB-02	↓	1220	G	W			X	X	X	X	X	X		
ARGWC-22	↓	1400	G	W			X	X	X	X	X	X		pH=5.81
ARAMW-1	↓	1556	G	W			X	X	X	X	X	X		pH=6.16

180-111686 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
Daniel Howard	9/30/20 / 1815		Debbie Waters	10-1-20 900	ETA Pitt

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

244- ATLANTA

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Client Information	Sampler: D Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64149-11995.2
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page ~~2 of 2~~
Company: Southern Company		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			Preservation Codes:
City: Atlanta	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: GA, 30308				
Phone:	PO #: GPC11084570			Other:
Email: JAbraham@southernco.com	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	~~N~~	~~N~~		
FB-02	10/1/20	0935	G	W			X	X	X	X	X	X	3	
ARGWC-23	↓	1158	G	W			X	X	X	X	X	X	3	pH = 6.38
DUP-02	↓	—	G	W			X	X	X	X	X	X	3	pH = 6.38

180-111740 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
1	Daniel Howard	10/1/20/1820	Wood		10/2/20 900	Eurofins
2						
3						

Custody Seals Intact: △ Yes △ 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 244- ATLANTA

eurofins | Environment Testing America

Client Information	Sampler: D Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com	COC No: 180-64149-11995.3
Company: Southern Company		Analysis Requested	Page: Page ~~3 of 3~~
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard		Job #:
City: Atlanta	TAT Requested (days):		
State, Zip: GA, 30308			
Phone:	PO #: GPC11064570		
Email: JAbraham@southernco.com	WO #:		
Project Name: CCR - Plant Arkwright	Project #: 18020201		
Site: Georgia	SSOW#:		

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

Sample Identification	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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	ND	ND		
ARAMW-2	10/1/20	1512	G	W			X	X	X	X	X	X	3	pH=5.96
ARGWC-21	↓	1608	G	W			X	X	X	X	X	X	3	pH=5.99

180-111741 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: Daniel L Howard	Date/Time: 10/1/20 / 1820	Company: Wood	Received by: [signature]	Date/Time: 10/2/20 9:00	Company: EMAK
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

NA AGCA
TRK# 8121 9394 4867
PRIORITY OVERNIGHT
WED - 30 SEP 10:30A
DSR
15238
PIT
PA-US
Uncorrected temp
Thermometer ID
CF
Initials
PT-WI-SR-001 effective 11/8/18
180-111648 Waybill
FedEx Express
SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
ORIGIN ID:MCNA (770) 421-3382
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 29SEP20
ACTWGT: 58.30 LB
CAD: 6994493/SSFE2121
DIMS: 24x13x14 IN
BILL THIRD PARTY
fedex.com
Recipients Copy
Express Package Service
Next Business Day
2 or 3 Business Days
FedEx Envelope
FedEx Pak
FedEx Box
FedEx Tube
Other

ID:MCNA (770) 421-3382
HOWARD
WOOD E+IS)
100
BIG SHANTY RD NW STE 100
SAW, GA 30144
ED STATES US

SHIP DATE: 30SEP20
ACTWGT: 59.55 LB
CAD: 6994493/SSFE2121
DIMS: 24x13x14 IN

BILL THIRD PARTY

SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058

REF:
INV:
PO:
DEPT:

FedEx Express

TRK# 0215 8121 9394 4878

THU - 01 OCT 10:30A
PRIORITY OVERNIGHT
DSR
15238
PA-US PIT

NA AGCA

Uncorrected temp 3.6 °C
Thermometer ID IM
CF 0 Initials B

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

80-111686 Waybill

121 9394 5690
PRIORITY OVERNIGHT
AGCA
15238
PIT
PA-US
Uncorrected temp
Thermometer ID
°C
CF
Initials
180-111740 Waybill

Do Not Lift Using This Tag

Part # 156297-435 RRDB2 EXP 09/21

ORIGIN ID:MCNA (770) 421-3382
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100

KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 01OCT20
ACTWGT: 47.65 LB
CAD: 6994493/SSFE2121
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238

(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx
Express

E

FRI – 02 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0215 8121 9394 4812

AHS
15238
US PIT

NA AGCA

Uncorrected temp 2.4 °C
Thermometer ID 14
CF 0 Initials B
PT-WI-SR-001 effective 11/8/18

180-111741 Waybill

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-111648-1

Login Number: 111648
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: 180-111648-1

Login Number: 111686
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: 180-111648-1

Login Number: 111740
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	

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-111648-1

Login Number: 111741
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: 180-111648-2
Client Project/Site: CCR - Plant Arkwright AP-2DAS

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
11/18/2020 7:50:42 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-111648-2

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-111648-2

Comments
No additional comments.

Receipt
The samples were received on 9/30/2020 9:00 AM, 10/1/2020 9:00 AM and 10/2/2020 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.0º C, 2.4º C, 2.7º C and 3.6º C.

RAD
Methods 903.0, 9315: Ra-226 prep batch 160-484743:
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.
ARGWA-19 (180-111648-1), ARGWA-20 (180-111686-1), EB-02 (180-111686-2), ARGWC-22 (180-111686-3), ARAMW-1 (180-111686-4), (LCS 160-484743/1-A) and (MB 160-484743/24-A)

Methods 903.0, 9315: Radium-226 prep batch 160-485335:
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.
FB-02 (180-111740-1), ARGWC-23 (180-111740-2), DUP-02 (180-111740-3), ARGWC-21 (180-111741-2), (LCS 160-485335/1-A) and (MB 160-485335/22-A)

Method 9315: Radium-226 prep batch 160-485335:
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.
ARAMW-2 (180-111741-1)

Methods 904.0, 9320: Radium-228 prep batch 160-484744:
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.
ARGWA-19 (180-111648-1), ARGWA-20 (180-111686-1), ARGWC-22 (180-111686-3), ARAMW-1 (180-111686-4), (LCS 160-484744/1-A) and (MB 160-484744/24-A)

Method 9320: Radium-228 prep batch 160-484744:
The following sample has a yttrium carrier recovery (126%) above the upper QC limit (110%). The barium carrier recovery is within limits and the sample result is below the MDC and RL. The results are reported with this narrative. EB-02 (180-111686-2)

Method 9320: Radium-228 prep batch 160-484744:
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.
EB-02 (180-111686-2)

Methods 904.0, 9320: Radium-228 prep batch 160-485338:
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.FB-02 (180-111740-1), ARGWC-23 (180-111740-2), DUP-02 (180-111740-3), ARAMW-2 (180-111741-1), ARGWC-21 (180-111741-2), (LCS 160-485338/1-A) and (MB 160-485338/22-A)

Method PrecSep_0: Radium 228 prep batch 160-484744

Job ID: 180-111648-2 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

The Yttrium carrier recovery is outside the upper control limit (110%) for the following sample: EB-02 (180-111686-2). The sample did not appear to have a larger yttrium pellet than that of the QC but weighed up outside the limit.

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

Definitions/Glossary

Client: Southern Company
Job ID: 180-111648-2
Project/Site: CCR - Plant Arkwright AP-2DAS

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-111648-2
Project/Site: CCR - Plant Arkwright AP-2DAS

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
Alaska (UST)	State	20-001	05-06-22
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	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-20
Iowa	State	373	12-01-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-111648-1	ARGWA-19	Water	09/29/20 15:25	09/30/20 09:00	
180-111686-1	ARGWA-20	Water	09/30/20 11:28	10/01/20 09:00	
180-111686-2	EB-02	Water	09/30/20 12:20	10/01/20 09:00	
180-111686-3	ARGWC-22	Water	09/30/20 14:00	10/01/20 09:00	
180-111686-4	ARAMW-1	Water	09/30/20 15:56	10/01/20 09:00	
180-111740-1	FB-02	Water	10/01/20 09:35	10/02/20 09:00	
180-111740-2	ARGWC-23	Water	10/01/20 11:58	10/02/20 09:00	
180-111740-3	DUP-02	Water	10/01/20 00:00	10/02/20 09:00	
180-111741-1	ARAMW-2	Water	10/01/20 15:12	10/02/20 09:00	
180-111741-2	ARGWC-21	Water	10/01/20 16:08	10/02/20 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

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 Arkwright AP-2DAS

Job ID: 180-111648-2

Client Sample ID: ARGWA-19
Date Collected: 09/29/20 15:25
Date Received: 09/30/20 09:00

Lab Sample ID: 180-111648-1
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			999.04 mL	1.0 g	484743	10/06/20 11:14	AVB	TAL SL
Total/NA	Analysis	9315		1			487030	10/28/20 12:51	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.04 mL	1.0 g	484744	10/06/20 11:57	AVB	TAL SL
Total/NA	Analysis	9320		1			485907	10/15/20 12:55	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			487751	11/02/20 19:07	SCB	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-20
Date Collected: 09/30/20 11:28
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-1
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			999.06 mL	1.0 g	484743	10/06/20 11:14	AVB	TAL SL
Total/NA	Analysis	9315		1			487030	10/28/20 12:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.06 mL	1.0 g	484744	10/06/20 11:57	AVB	TAL SL
Total/NA	Analysis	9320		1			485907	10/15/20 12:56	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			487751	11/02/20 19:07	SCB	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: EB-02
Date Collected: 09/30/20 12:20
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-2
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			1000.04 mL	1.0 g	484743	10/06/20 11:14	AVB	TAL SL
Total/NA	Analysis	9315		1			487030	10/28/20 12:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.04 mL	1.0 g	484744	10/06/20 11:57	AVB	TAL SL
Total/NA	Analysis	9320		1			485907	10/15/20 12:56	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			487751	11/02/20 19:07	SCB	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-22
Date Collected: 09/30/20 14:00
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-3
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			999.27 mL	1.0 g	484743	10/06/20 11:14	AVB	TAL SL
Total/NA	Analysis	9315		1			487030	10/28/20 12:52	SCB	TAL SL
	Instrument ID: GFPCRED									

Client Sample ID: ARGWC-22

Lab Sample ID: 180-111686-3

Date Collected: 09/30/20 14:00

Matrix: Water

Date Received: 10/01/20 09:00

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			999.27 mL	1.0 g	484744	10/06/20 11:57	AVB	TAL SL
Total/NA	Analysis	9320		1			485907	10/15/20 12:56	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			487751	11/02/20 19:07	SCB	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-1

Lab Sample ID: 180-111686-4

Date Collected: 09/30/20 15:56

Matrix: Water

Date Received: 10/01/20 09:00

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			999.87 mL	1.0 g	484743	10/06/20 11:14	AVB	TAL SL
Total/NA	Analysis	9315		1			487030	10/28/20 12:52	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.87 mL	1.0 g	484744	10/06/20 11:57	AVB	TAL SL
Total/NA	Analysis	9320		1			485907	10/15/20 12:56	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			487751	11/02/20 19:07	SCB	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FB-02

Lab Sample ID: 180-111740-1

Date Collected: 10/01/20 09:35

Matrix: Water

Date Received: 10/02/20 09:00

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			999.23 mL	1.0 g	485335	10/13/20 08:06	AVB	TAL SL
Total/NA	Analysis	9315		1			488215	11/04/20 10:26	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.23 mL	1.0 g	485338	10/13/20 08:31	AVB	TAL SL
Total/NA	Analysis	9320		1			487365	10/30/20 11:47	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			489469	11/18/20 16:56	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-23

Lab Sample ID: 180-111740-2

Date Collected: 10/01/20 11:58

Matrix: Water

Date Received: 10/02/20 09:00

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			998.99 mL	1.0 g	485335	10/13/20 08:06	AVB	TAL SL
Total/NA	Analysis	9315		1			488215	11/04/20 10:26	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			998.99 mL	1.0 g	485338	10/13/20 08:31	AVB	TAL SL
Total/NA	Analysis	9320		1			487365	10/30/20 11:47	FLC	TAL SL
	Instrument ID: GFPCBLUE									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Client Sample ID: ARGWC-23
Date Collected: 10/01/20 11:58
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-2
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	Ra226_Ra228		1			489469	11/18/20 16:56	CAH	TAL SL

Client Sample ID: DUP-02
Date Collected: 10/01/20 00:00
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-3
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			1000.11 mL	1.0 g	485335	10/13/20 08:06	AVB	TAL SL
Total/NA	Analysis	9315		1			488215	11/04/20 10:27	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.11 mL	1.0 g	485338	10/13/20 08:31	AVB	TAL SL
Total/NA	Analysis	9320		1			487365	10/30/20 11:47	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			489469	11/18/20 16:56	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-2
Date Collected: 10/01/20 15:12
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-1
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			1000.73 mL	1.0 g	485335	10/13/20 08:06	AVB	TAL SL
Total/NA	Analysis	9315		1			488523	11/08/20 21:13	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.73 mL	1.0 g	485338	10/13/20 08:31	AVB	TAL SL
Total/NA	Analysis	9320		1			487365	10/30/20 11:47	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			489469	11/18/20 16:56	CAH	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-21
Date Collected: 10/01/20 16:08
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-2
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			1000.20 mL	1.0 g	485335	10/13/20 08:06	AVB	TAL SL
Total/NA	Analysis	9315		1			488215	11/04/20 10:28	SCB	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.20 mL	1.0 g	485338	10/13/20 08:31	AVB	TAL SL
Total/NA	Analysis	9320		1			487365	10/30/20 11:48	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			489469	11/18/20 16:56	CAH	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

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Analyst References:

Lab: TAL SL

Batch Type: Prep

AVB = Amber Bleem

Batch Type: Analysis

CAH = Chris Hough

FLC = Fernando Cruz

SCB = Sarah Bernsen

Client Sample ID: ARGWA-19

Date Collected: 09/29/20 15:25
Date Received: 09/30/20 09:00

Lab Sample ID: 180-111648-1

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	0.337		0.113	0.117	1.00	0.120	pCi/L	10/06/20 11:14	10/28/20 12:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*10/06/20 11:14*	*10/28/20 12:51*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0351	U	0.275	0.275	1.00	0.487	pCi/L	10/06/20 11:57	10/15/20 12:55	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:55*	*1*
Y Carrier	*77.8*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:55*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.372	U	0.297	0.299	5.00	0.487	pCi/L		11/02/20 19:07	1

Client Sample ID: ARGWA-20

Date Collected: 09/30/20 11:28
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-1

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	**0.267**		0.0949	0.0979	1.00	0.0894	pCi/L	10/06/20 11:14	10/28/20 12:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*10/06/20 11:14*	*10/28/20 12:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.413	U	0.304	0.306	1.00	0.475	pCi/L	10/06/20 11:57	10/15/20 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.3*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*1*
Y Carrier	*77.4*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*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	**0.679**		0.318	0.321	5.00	0.475	pCi/L		11/02/20 19:07	1

Client Sample ID: EB-02

Date Collected: 09/30/20 12:20
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-2

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	0.0245	U	0.0499	0.0500	1.00	0.0917	pCi/L	10/06/20 11:14	10/28/20 12:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.6*		*40 - 110*	*10/06/20 11:14*	*10/28/20 12:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00198	U	0.218	0.218	1.00	0.388	pCi/L	10/06/20 11:57	10/15/20 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.6*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*1*
Y Carrier	*126*	*X*	*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*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	0.0264	U	0.224	0.224	5.00	0.388	pCi/L		11/02/20 19:07	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Client Sample ID: ARGWC-22

Date Collected: 09/30/20 14:00
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-3

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	**0.180**		0.0877	0.0892	1.00	0.0970	pCi/L	10/06/20 11:14	10/28/20 12:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.9*		*40 - 110*	*10/06/20 11:14*	*10/28/20 12:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.421	U	0.357	0.359	1.00	0.568	pCi/L	10/06/20 11:57	10/15/20 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.9*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*1*
Y Carrier	*76.3*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*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	**0.602**		0.368	0.370	5.00	0.568	pCi/L		11/02/20 19:07	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Client Sample ID: ARAMW-1

Date Collected: 09/30/20 15:56
Date Received: 10/01/20 09:00

Lab Sample ID: 180-111686-4

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	0.0784	U	0.0628	0.0632	1.00	0.0896	pCi/L	10/06/20 11:14	10/28/20 12:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*40 - 110*	*10/06/20 11:14*	*10/28/20 12:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.170	U	0.273	0.274	1.00	0.462	pCi/L	10/06/20 11:57	10/15/20 12:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*1*
Y Carrier	*77.0*		*40 - 110*	*10/06/20 11:57*	*10/15/20 12:56*	*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	0.249	U	0.280	0.281	5.00	0.462	pCi/L		11/02/20 19:07	1

Client Sample ID: FB-02

Date Collected: 10/01/20 09:35
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-1

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	0.0846	U	0.0734	0.0738	1.00	0.108	pCi/L	10/13/20 08:06	11/04/20 10:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*10/13/20 08:06*	*11/04/20 10:26*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.747**		0.309	0.316	1.00	0.429	pCi/L	10/13/20 08:31	10/30/20 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*
Y Carrier	*74.0*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.832**		0.318	0.325	5.00	0.429	pCi/L		11/18/20 16:56	1

Client Sample ID: ARGWC-23

Date Collected: 10/01/20 11:58
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-2

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	0.228		0.107	0.109	1.00	0.123	pCi/L	10/13/20 08:06	11/04/20 10:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*10/13/20 08:06*	*11/04/20 10:26*	*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		0.293	0.297	1.00	0.441	pCi/L	10/13/20 08:31	10/30/20 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*
Y Carrier	*77.4*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.749		0.312	0.316	5.00	0.441	pCi/L		11/18/20 16:56	1

Client Sample ID: DUP-02

Date Collected: 10/01/20 00:00
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111740-3

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	0.122	U	0.0920	0.0926	1.00	0.132	pCi/L	10/13/20 08:06	11/04/20 10:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*40 - 110*	*10/13/20 08:06*	*11/04/20 10:27*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.216	U	0.291	0.292	1.00	0.485	pCi/L	10/13/20 08:31	10/30/20 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*
Y Carrier	*72.9*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.338	U	0.305	0.306	5.00	0.485	pCi/L		11/18/20 16:56	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Client Sample ID: ARAMW-2

Date Collected: 10/01/20 15:12
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-1

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	0.172		0.0950	0.0963	1.00	0.125	pCi/L	10/13/20 08:06	11/08/20 21:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*10/13/20 08:06*	*11/08/20 21:13*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.69		0.491	0.550	1.00	0.542	pCi/L	10/13/20 08:31	10/30/20 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*
Y Carrier	*77.0*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:47*	*1*

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.86		0.500	0.558	5.00	0.542	pCi/L		11/18/20 16:56	1

Client: Southern Company
Project/Site: CCR - Plant Arkwright AP-2DAS

Job ID: 180-111648-2

Client Sample ID: ARGWC-21

Date Collected: 10/01/20 16:08
Date Received: 10/02/20 09:00

Lab Sample ID: 180-111741-2

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	0.0439	U	0.0782	0.0783	1.00	0.138	pCi/L	10/13/20 08:06	11/04/20 10:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*10/13/20 08:06*	*11/04/20 10:28*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.452	U	0.327	0.329	1.00	0.509	pCi/L	10/13/20 08:31	10/30/20 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:48*	*1*
Y Carrier	*73.6*		*40 - 110*	*10/13/20 08:31*	*10/30/20 11:48*	*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	0.496	U	0.336	0.338	5.00	0.509	pCi/L		11/18/20 16:56	1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-484743/24-A
Matrix: Water
Analysis Batch: 487030

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 484743

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1797		0.0967	0.0981	1.00	0.112	pCi/L	10/06/20 11:14	10/28/20 14:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.2*		*40 - 110*	*10/06/20 11:14*	*10/28/20 14:42*	*1*

Lab Sample ID: LCS 160-484743/1-A
Matrix: Water
Analysis Batch: 487030

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484743

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.1	14.45		1.49	1.00	0.118	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*85.2*		*40 - 110*

Lab Sample ID: MB 160-485335/22-A
Matrix: Water
Analysis Batch: 488215

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 485335

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01934	U	0.0606	0.0606	1.00	0.116	pCi/L	10/13/20 08:06	11/04/20 12:24	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.6*		*40 - 110*	*10/13/20 08:06*	*11/04/20 12:24*	*1*

Lab Sample ID: LCS 160-485335/1-A
Matrix: Water
Analysis Batch: 488215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 485335

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.598		1.05	1.00	0.120	pCi/L	85	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-484744/24-A
Matrix: Water
Analysis Batch: 485729

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 484744

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1025	U	0.357	0.357	1.00	0.624	pCi/L	10/06/20 11:57	10/15/20 12:51	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	82.2		40 - 110	10/06/20 11:57	10/15/20 12:51	1
Y Carrier	79.3		40 - 110	10/06/20 11:57	10/15/20 12:51	1

Lab Sample ID: LCS 160-484744/1-A
Matrix: Water
Analysis Batch: 485907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484744

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			10.3	10.33		1.33	1.00	0.594	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	85.2		40 - 110
Y Carrier	80.0		40 - 110

Lab Sample ID: MB 160-485338/22-A
Matrix: Water
Analysis Batch: 487365

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 485338

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1071	U	0.271	0.272	1.00	0.469	pCi/L	10/13/20 08:31	10/30/20 11:50	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		40 - 110	10/13/20 08:31	10/30/20 11:50	1
Y Carrier	78.5		40 - 110	10/13/20 08:31	10/30/20 11:50	1

Lab Sample ID: LCS 160-485338/1-A
Matrix: Water
Analysis Batch: 487365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 485338

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			7.69	8.484		1.07	1.00	0.497	pCi/L	110	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	84.6		40 - 110
Y Carrier	77.8		40 - 110

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Prep Batch: 484743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	Total/NA	Water	PrecSep-21	
180-111686-1	ARGWA-20	Total/NA	Water	PrecSep-21	
180-111686-2	EB-02	Total/NA	Water	PrecSep-21	
180-111686-3	ARGWC-22	Total/NA	Water	PrecSep-21	
180-111686-4	ARAMW-1	Total/NA	Water	PrecSep-21	
MB 160-484743/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-484743/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 484744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111648-1	ARGWA-19	Total/NA	Water	PrecSep_0	
180-111686-1	ARGWA-20	Total/NA	Water	PrecSep_0	
180-111686-2	EB-02	Total/NA	Water	PrecSep_0	
180-111686-3	ARGWC-22	Total/NA	Water	PrecSep_0	
180-111686-4	ARAMW-1	Total/NA	Water	PrecSep_0	
MB 160-484744/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-484744/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 485335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-1	FB-02	Total/NA	Water	PrecSep-21	
180-111740-2	ARGWC-23	Total/NA	Water	PrecSep-21	
180-111740-3	DUP-02	Total/NA	Water	PrecSep-21	
180-111741-1	ARAMW-2	Total/NA	Water	PrecSep-21	
180-111741-2	ARGWC-21	Total/NA	Water	PrecSep-21	
MB 160-485335/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-485335/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 485338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-111740-1	FB-02	Total/NA	Water	PrecSep_0	
180-111740-2	ARGWC-23	Total/NA	Water	PrecSep_0	
180-111740-3	DUP-02	Total/NA	Water	PrecSep_0	
180-111741-1	ARAMW-2	Total/NA	Water	PrecSep_0	
180-111741-2	ARGWC-21	Total/NA	Water	PrecSep_0	
MB 160-485338/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-485338/1-A	Lab Control Sample	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

244- ATLANTA

eurofins | Environment Testing America

Client Information	Sampler: DHoward	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64149-11995.1
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page 1 of 3
Company: Southern Company				Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone:	PO #: GPC11084570			
Email: JAbraham@southernco.com	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

Analysis Requested

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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	XD	XD		
ARGWA-19	9/29/20	1525	G	W			X	X	X	X	X	X		pH=5.83

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:

180-111648 Chain of Custody

Possible Hazard Identification
[X] 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 [X] 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: Daniel Howard	Date/Time: 9/29/20 / 1745	Company: Wood	Received by: [signature]	Date/Time: 9-30-20 900	Company: EtAPitt
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

244- ATLANTA

eurofins | Environment Testing America

Client Information	Sampler: D Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64149-11895.3
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page 1 of 1
Company: Southern Company				Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone:	PO #: GPC11064570			
Email: JAbraham@southernco.com	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	SSOW#:			

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

Analysis Requested

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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D	N	N	D	D	X	
ARGWA-20	9/30/20	1128	G	W			X	X	X	X	X	X	3	pH=5.65
EB-02	↓	1220	G	W			X	X	X	X	X	X		
ARGWC-22	↓	1400	G	W			X	X	X	X	X	X		pH=5.81
ARAMW-1	↓	1556	G	W			X	X	X	X	X	X		pH=6.16

180-111686 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
Daniel Howard	9/30/20 / 1815		Debbie Watson	10-1-20 900	ETA-Pitt
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

244- ATLANTA

eurofins | Environment Testing America

Client Information	Sampler: D Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64149-11995.2
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page ~~2 of 2~~
Company: Southern Company		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			Preservation Codes:
City: Atlanta	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: GA, 30308				
Phone:	PO #: GPC11084570			Other:
Email: JAbraham@southernco.com	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	~~N~~ D	~~N~~ D		
FB-02	10/1/20	0935	G	W			X	X	X	X	X	X	3	
ARGWC-23	↓	1158	G	W			X	X	X	X	X	X	3	pH = 6.38
DUP-02	↓	—	G	W			X	X	X	X	X	X	3	pH = 6.38

180-111740 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
Daniel Howard	10/1/20/1820	Wood		10/2/20 900	Eurofins
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 244- ATLANTA

eurofins | Environment Testing America

Client Information	Sampler: D Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-64149-11995.3
Client Contact: Joju Abraham	Phone:	E-Mail: Shali.Brown@Eurofinset.com		Page: Page ~~6 of 6~~
Company: Southern Company		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested: Standard			Preservation Codes:
City: Atlanta	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: GA, 30308				
Phone:	PO #: GPC11064570			
Email: JAbraham@southernco.com	WO #:			Other:
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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 - Radium 226	6020B - Custom 15 (App III/AppIV + Silver)	300_ORGFM_28D - Chloride Fluoride Sulfate	2540C_Calcd - Total Dissolved Solids	9320_Ra228 - Radium 228	7470A - Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	~~N~~ D	~~N~~ D		
ARAMW-2	10/1/20	1512	G	W			X	X	X	X	X	X	3	pH=5.96
ARGWC-21	↓	1608	G	W			X	X	X	X	X	X	3	pH=5.99

180-111741 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
Daniel L Howard	10/1/20 1820	Wood		10/2/20 900	EDD Pitt
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:

Ver: 01/16/2019

FedEx Express
TRK# 8121 9394 4867
0215
WED - 30 SEP 10:30A
PRIORITY OVERNIGHT
DSR
15238
PIT
PA-US
NA AGCA
Uncorrected temp
Thermometer ID
°C
CF
Initials
PT-WI-SR-001 effective 11/8/18
180-111648 Waybill
SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
ORIGIN ID:MCNA (770) 421-3382
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 29SEP20
ACTWGT: 58.30 LB
CAD: 6994493/SSFE2121
DIMS: 24x13x14 IN
BILL THIRD PARTY
Recipients Copy
Express Package Service
Next Business Day
2 or 3 Business Days
FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight
FedEx 2Day A.M.
FedEx 2Day
FedEx Express Saver
Packaging
FedEx Envelope
FedEx Pak
FedEx Box
FedEx Tube
Other
fedex.com

ID:MCNA (770) 421-3382
HOWARD
WOOD E+IS)
100
BIG SHANTY RD NW STE 100
SAW, GA 30144
ED STATES US

SHIP DATE: 30SEP20
ACTWGT: 59.55 LB
CAD: 6994493/SSFE2121
DIMS: 24x13x14 IN

BILL THIRD PARTY

SAMPLE RECEIVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058

INV:
PO:
REF:
DEPT:

FedEx Express

TRK# 0215 8121 9394 4878

THU - 01 OCT 10:30A
PRIORITY OVERNIGHT

NA AGCA

DSR
15238
PA-US PIT

Uncorrected temp 3.6 °C
Thermometer ID IM
CF 0 Initials B

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

80-111686 Waybill

PRIORITY OVERNIGHT
15238
PIT
PA-US
AGCA
Uncorrected temp
Thermometer ID
°C
CF
Initials
180-111740 Waybill

Do Not Lift Using This Tag

ORIGIN ID:MCNA (770) 421-3382
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100

KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 01OCT20
ACTWGT: 47.65 LB
CAD: 6994493/SSFE2121
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058 REF:
INV:
PO: DEPT:

FedEx Express

E

FRI – 02 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0215 **8121 9394 4812**

AHS
15238
US PIT

NA AGCA

Uncorrected temp 2.4 °C
Thermometer ID 14
CF 0 Initials B
PT-WI-SR-001 effective 11/8/18

Part # 156297-435 RRDR2 EXP 08/21

180-111741 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 America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-413498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin: Georgia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-111648-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 10/12/2020			
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 Arkwright	Project #: 18020201			
Site: Arkwright	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)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (GFPC) - 21 day decay	9320_Ra228/PrecSep_0 Radium 228	Ra226Ra228_GFPC/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
ARGWA-19 (180-111648-1)	9/29/20	15:25 Eastern		Water				X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		10/1/20 1500		FedEx		
	Relinquished by: FedEx	Date/Time:	Company	Received by:	Date/Time: 10/2/20 09:22	Company ETASTL
	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 America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-413708.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin: Georgia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-111686-1
Address: 13715 Rider Trail North,	Due Date Requested: 10/13/2020			
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 Arkwright	Project #: 18020201			
Site: Arkwright	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 (Wwater, Ssolid, Owastetoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (GFPC) - 21 day decay	9320_Ra228/PrecSep_0 Radium 228	Ra226Ra228_GFPC/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
ARGWA-20 (180-111686-1)	9/30/20	11:28 Eastern		Water			X	X	X	1	
EB-02 (180-111686-2)	9/30/20	12:20 Eastern		Water			X	X	X	1	
ARGWC-22 (180-111686-3)	9/30/20	14:00 Eastern		Water			X	X	X	1	
ARAMW-1 (180-111686-4)	9/30/20	15:56 Eastern		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

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	Matthew Jacks FedEx	10/2/20 1700	ETA PH	FedEx		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/3/20 11:00	Company ETAST2
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

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 America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-414270.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin: Georgia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-111740-2
Address: 13715 Rider Trail North,	Due Date Requested: 11/3/2020			
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 Arkwright	Project #: 18020201			
Site: Arkwright	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)	9315_Ra226/PrecSep_21 Radium-226 (GFPC) - 21 day decay	9320_Ra228/PrecSep_0 Radium 228	Ra226Ra228_GFPC/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
FB-02 (180-111740-1)	10/1/20	09:35 Eastern		Water			X	X	X	1	
ARGWC-23 (180-111740-2)	10/1/20	11:58 Eastern		Water			X	X	X	1	
DUP-02 (180-111740-3)	10/1/20	Eastern		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

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: [signature]	Date/Time: 10/7/20 1500	Company: [signature]	Received by: FED EX	Date/Time:	Company:
Relinquished by: FED EX	Date/Time:	Company:	Received by: [signature]	Date/Time: OCT 08 2020 09:10	Company: DEA STL
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 America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-414270.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin: Georgia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-111741-2
Address: 13715 Rider Trail North,	Due Date Requested: 11/3/2020			
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 Arkwright	Project #: 18020201			
Site: Arkwright	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)	9315_Ra226/PrecSep_21 Radium-226 (GFPC) - 21 day decay	9320_Ra228/PrecSep_0 Radium 228	Ra226Ra228_GFPC/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
ARAMW-2 (180-111741-1)	10/1/20	15:12 Eastern		Water			X	X	X	1	
ARGWC-21 (180-111741-2)	10/1/20	16:08 Eastern		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/7/20 1500		FED EX		
2	FED EX				OCT 08 2020 09:0	
3						

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: 180-111648-2

Login Number: 111648
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: 180-111648-2

Login Number: 111648
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/03/20 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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: 180-111648-2

Login Number: 111686
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: 180-111648-2

Login Number: 111686
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/03/20 06:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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: 180-111648-2

Login Number: 111740
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	

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-111648-2

Login Number: 111740
List Number: 2
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/08/20 06:57 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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: 180-111648-2

Login Number: 111741
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	

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-111648-2

Login Number: 111741
List Number: 2
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/08/20 06:57 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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	

Georgia Power Site Sampling Data (GW)

Site Name: Plant Arkwright AP2 — Date: 9/29/20 – 10/1/20

Well ID	Sample Date	Sample Time	Field Blank	Equipment Blank	Field Dup.	Additional Comments
ARGWA-19	9/29/20	1525				
ARGWA-20	9/30/20	1128				
EB-02	9/30/20	1220		EB-02		Equip Blank of tubing used with peristaltic pump
ARGWC-22	9/30/20	1400				
ARAMW-1	9/30/20	1556				
FB-02	10/1/20	0935	FB-02			Field Blank For Ash Pond 2 samples
ARGWC-23	10/1/20	1158				
DUP-02	10/1/20	—			ARGWC-23	Duplicate of ARGWC-23 (DUP-02)
ARAMW-2	10/1/20	1512				
ARGWC-21	10/1/20	1608				

Additional comments: Equip Blank EB-02 was collected from the HDPE tubing used with the peristaltic pump. Tubing Lot# 12759-05. Reagent water used ASTM Type I/II RICCA B- and Lot# 4003C78, Exp 8/2021. Field Blank FB-02 was taken using ASTM Type I deionized water (7732-18-5). Field Blank For Ash Pond 2.

Date: 9/22/20
Time: 1005
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: 25467
Pine Handset ID: SN: 369323
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes_____ No ✓ Date:_____ Time:_____	
Current Air Temperature °C (meter reading):		19.7
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	759.1
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		~~8.61~~ 8.60
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	94.1
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0628

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot OGE438 5/21	1.413
Temperature (°C)		20.4
Reading before Calibration (mS/cm)		1.394
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		1.0123

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot OGD808 4/22	7.84
pH 7.0 value after calibration:	21.2°C	7.02
pH 7.0 mV **(range is -50 to +50 mV)**:		-50.3
pH 10 value before calibration:	Lot OGD851 4/22	10.68
pH 10 value after calibration:	21.5°C	10.04
pH 10 mV **(range is -130 to -230 mV)**:		-220.6
pH **4.0** value before calibration:	Lot OGE441 05/22	4.97
pH **4.0** value after calibration:	21.3°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		121.5

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		19.4
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	236
Reading before calibration (mV):		195.2
Reading after calibration (mV):		236

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A0013 Exp 4/21	Before Cal:	After Cal:	19.9
100 NTU Turbidity Standard Lot A0031 Exp 5/21	Before Cal:	After Cal:	101
800 NTU Turbidity Standard Lot A0028 Exp 4/21	Before Cal:	After Cal:	793
10 NTU Turbidity Check STD Lot A0029 Exp 4/21	Before Cal:	After Cal:	9.74
_____ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Hach 2100Q ID: R149476

Date: 9-29-20
Time: 740
Prepared By: EVER GUILLEN
Checked By:

Wood.
Project No.
6122201429

~~Pine~~ Sonde ID: 613229
Pine Handset ID:
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes No ✓ Date: Time:	
Current Air Temperature °C (meter reading):		22.50
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	749.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.57
DO concentration after Calibration (mg/L):		9.03
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	-
DO Charge (DO ch):	Acceptable Range is 25 to 75	-
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	-

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		22.7
Reading before Calibration (mS/cm)		1.432
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		-

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:		6.91
pH 7.0 value after calibration:		7.02
pH 7.0 mV **(range is -50 to +50 mV)**:		5.6
pH 10 value before calibration:		9.76
pH 10 value after calibration:		10.04
pH 10 mV **(range is -130 to -230 mV)**:		-165.1
pH 4.0 value before calibration:		3.54
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		205.9

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		21.2
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	228
Reading before calibration (mV):		232.1
Reading after calibration (mV):		234.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**

10 NTU Turbidity Standard	Before Cal:	9.56	After Cal:	9.92
20 NTU Turbidity Standard	Before Cal:	19.79	After Cal:	19.97
100 NTU Turbidity Standard	Before Cal:	92.0	After Cal:	99.0
800 NTU Turbidity Check STD	Before Cal:	803	After Cal:	799
10 NTU Turbidity Check STD	Before Cal:	9.94	After Cal:	10.0
CALIBRATION SUCCESSFUL?				YES

Date: 9-30-20
Time: 800
Prepared By: Ever Guillen
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 613229
Pine Handset ID:
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		15.30
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	10.34
DO concentration after Calibration (mg/L):		9.07
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	–
DO Charge (DO ch):	Acceptable Range is 25 to 75	–
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	–

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		16.6
Reading before Calibration (mS/cm)		1.981
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		–

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	6.92	~~7.02~~
pH **7.0** value after calibration:		7.02
pH **7.0** mV **(range is -50 to +50 mV)**:		5.10
pH 10 value before calibration:		10.08
pH 10 value after calibration:		9.73
pH 10 mV **(range is -130 to -230 mV)**:		-166.7
pH **4.0** value before calibration:		4.20
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		170.8

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		16.0
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	228
Reading before calibration (mV):		191.6
Reading after calibration (mV):		228

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
10 NTU Turbidity Standard	Before Cal: 10.0	After Cal:	10.0
20 NTU Turbidity Standard	Before Cal: 18.8	After Cal:	18.1
100 NTU Turbidity Standard	Before Cal: 102	After Cal:	101
800 NTU Turbidity Check STD	Before Cal: 809	After Cal:	813
10 NTU Turbidity Check STD	Before Cal: 8.0	After Cal:	10.1
CALIBRATION SUCCESSFUL?			YES

Date: 10-1-20
Time: 800
Prepared By: EVER GUILLEN
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 613229
Pine Handset ID: _____
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		15.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.1
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	9.84
DO concentration after Calibration (mg/L):		8.99
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		16.1
Reading before Calibration (mS/cm)		1.439
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		6.91
pH **7.0** value after calibration:		7.02
pH **7.0** mV **(range is -50 to +50 mV)**:		5.2
pH 10 value before calibration:		9.74
pH 10 value after calibration:		10.08
pH 10 mV **(range is -130 to -230 mV)**:		-167.0
pH **4.0** value before calibration:		4.22
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		169.1

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		16.7
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	228
Reading before calibration (mV):		237.7
Reading after calibration (mV):		240

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
____NTU Turbidity Standard	Before Cal:	10.9	After Cal:	9.96
____ NTU Turbidity Standard	Before Cal:	22.0	After Cal:	20.0
_____ NTU Turbidity Standard	Before Cal:	99.5	After Cal:	99.4
_____ NTU Turbidity Check STD	Before Cal:	791	After Cal:	801
_____ NTU Turbidity Check STD	Before Cal:	9.96	After Cal:	9.97
CALIBRATION SUCCESSFUL?				YES

Date: 9/29/20
Time: 0825
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: _____
Pine Handset ID: 541714
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date: ___ Time: ___	
Current Air Temperature °C (meter reading):		23.4
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	749.6
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	-
DO concentration after Calibration (mg/L):		7.76
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.4
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 19150155	1.413
Temperature (°C)		24.3
Reading before Calibration (mS/cm)		1.413
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9999

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 19340057 / 8/2021 25.0°C	7.09
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-5.5
pH 10 value before calibration:	Lot 19320102 / 8/2021 25.1°C	9.99
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-176.8
pH 4.0 value before calibration:	20010025 / 8/2021 24.5°C	4.13
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		170.4

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 / 8/2021	24.0
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	230
Reading before calibration (mV):		223.4
Reading after calibration (mV):		230

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	21.8
100 NTU Turbidity Standard	Before Cal:	After Cal:	99.3
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	806
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.85
___ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Date: 9/[illegible]30/20
Time: 0810
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: _____
Pine Handset ID: 541714
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes____ No ✓ Date:____ Time:____	
Current Air Temperature °C (meter reading):		13.3
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.4
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		9.39
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	90.4
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.1060

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e, pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 1915015-5	1.413
Temperature (°C)		12.6
Reading before Calibration (mS/cm)		1.428
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9898

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 / 8/2021	7.11
pH **7.0** value after calibration:	14.7°C	7.06
pH **7.0** mV **(range is -50 to +50 mV)**:		-6.4
pH 10 value before calibration:	Lot 19320102 / 8/21	9.90
pH 10 value after calibration:	14.6°C	10.08
pH 10 mV **(range is -130 to -230 mV)**:		-77.6
pH **4.0** value before calibration:	Lot 20010025 / 8/21	4.30
pH **4.0** value after calibration:	15.0°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		165.4

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 / 8/21	14.9
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	242
Reading before calibration (mV):		233.2
Reading after calibration (mV):		242

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	19.4
100 NTU Turbidity Standard	Before Cal:	After Cal:	102
800 NTU Turbidity Standard Lot A815-5	Before Cal:	After Cal:	808
10 NTU Turbidity Check STD	Before Cal:	After Cal:	10.1
< 0.1 NTU Turbidity Check STD	Before Cal:	After Cal:	0.0
CALIBRATION SUCCESSFUL?			

Date: 10/1/20
Time: 0800
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: _____
Pine Handset ID: 54014
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		13.5
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.3
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		9.54
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.3
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0830

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 19150155	1.413
Temperature (°C)		13.4
Reading before Calibration (mS/cm)		1.415
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9984

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 19340057 1/8/2021	7.10
pH 7.0 value after calibration:	17.4°C	7.02
pH 7.0 mV **(range is -50 to +50 mV)**:		-6.1
pH 10 value before calibration:	Lot 19320102 1/8/21	~~10.1~~ 9.95
pH 10 value after calibration:	17.6°C	10.04
pH 10 mV **(range is -130 to -230 mV)**:		-178.8
pH 4.0 value before calibration:	Lot 20010025 1/8/21	4.25
pH 4.0 value after calibration:	17.8°C	4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		166.6

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 1/8/21	17.6
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	239
Reading before calibration (mV):		230.3
Reading after calibration (mV):		239

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard	Before Cal:	After Cal:	23.2
100 NTU Turbidity Standard	Before Cal:	After Cal:	105
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	808
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.59
<0.1 NTU Turbidity Check STD	Before Cal:	After Cal:	0.0
CALIBRATION SUCCESSFUL?			

Date: 9/29/20
Time: 06:15
Prepared By: A SHOREDITS
Checked By: NA

Wood.
Project No. 6122201429

SMARTROLL MP
~~Pine Sonde~~ ID: 642533
Pine Handset ID: NA (Tablet)
Battery Voltage %: 100
Hach 2100Q S/N 16110C053543

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**	
Was DO membrane changed?	Yes____ No X Date:____ Time:____		
Current Air Temperature °C (meter reading):		22.49	
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):			
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	-3.9	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:			A.S. 9/29/20
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.4829	99.9%
DO concentration after Calibration (mg/L):		8.49	100 %
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery		
DO Charge (DO ch):	Acceptable Range is 25 to 75		
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants		

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 19150155 Exp. NA.	1.413
Temperature (°C)		23.55
Reading before Calibration (mS/cm)		1.464
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH			
pH **7.0** value before calibration:	Lot# 19340057 Exp. 08/21	7.04	23.8°C
pH **7.0** value after calibration:		7.00	
pH **7.0** mV **(range is -50 to +50 mV)**:		-2.4	
pH 10 value before calibration:	Lot # 19320102 Exp. 08/21	10.01	23.8°C
pH 10 value after calibration:		10.00	
pH 10 mV **(range is -130 to -230 mV)**:		-178.3	
pH **4.0** value before calibration:	Lot # 20010025 Exp. 08/21	4.01	23.2°C
pH **4.0** value after calibration:		4.00	
pH **4.0** mV **(range is 130 to 230 mV)**:		172.7	

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 228 mV)		
Calibration Temperature (°C):	Lot # 19460167 Exp. 08/21	23.20
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		225.1
Reading after calibration (mV):		228

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**						
20 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 20.0	After Cal:	20.0
100 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 102	After Cal:	101
800 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 797	After Cal:	805
10 NTU Turbidity Check STD	Lot # A0226	Exp. 11/21	Before Cal: 10.1	After Cal:	10.5
____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					

Date: 9/30/2020
Time: 07:30
Prepared By: A. SHOREDITS
Checked By: NA

Wood.
Project No. 6122201429

SMARTROLL MP
~~Pine Sonde~~ ID: 642533
Pine Handset ID: NA
Battery Voltage %: 100
Hach 2100Q S/N 16110C053543

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No X Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		~~17.14~~ 16.34
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		-9.2 mm Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	10.4 101 %
DO concentration after Calibration (mg/L):		9.42 100.1 %
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 19150155 Exp. NA	1.413
Temperature (°C)		12.8 AS. 9/30/20
Reading before Calibration (mS/cm)		~~1.3842~~ 1.405
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot # 19340057 Exp. 08/21	7.06
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-3.7
pH 10 value before calibration:	Lot # 19320102 Exp 08/21	9.92
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-177.9
pH 4.0 value before calibration:	Lot # 20010025 Exp 08/21	4.56
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		175.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std. 228 mV)		
Calibration Temperature (°C):	Lot # 19460167 Exp. 08/21	15.89
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	
Reading before calibration (mV):		239.0
Reading after calibration (mV):		228.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.					
20 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 20.6	After Cal:	~~20.2~~ 19.7
100 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 103	After Cal:	99.1
800 NTU Turbidity Standard	Lot # NA	Exp. NA	Before Cal: 787	After Cal:	793
10 NTU Turbidity Check STD	Lot # A0226	Exp. 11/21	Before Cal: 10.8	After Cal:	10.5
____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					YES

10/01
Date: 09/3[illegible]2020
Time: 07:40
Prepared By: A. SHOREDITS
Checked By: NA

Wood.
Project No. 6122201429

SMARTROLL MP
Pine Sonde ID: 642533
Pine Handset ID: NA
Battery Voltage %: 100
Hach 2100Q S/N 16110C053543

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**	
Was DO membrane changed?	Yes ____ No X Date: ____ Time: ____		
Current Air Temperature °C (meter reading):			
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		~8.4 mm Hg	
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg		
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:			
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	9.16	100.7 %
DO concentration after Calibration (mg/L):		9.34	100.2 %
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery		
DO Charge (DO ch):	Acceptable Range is 25 to 75		
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants		

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e, pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# 19150155 Exp. NA	1.413
Temperature (°C)		14.26
Reading before Calibration (mS/cm)		1.402
Reading AFTER Calibration (mS/cm)		1.416
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH			
pH **7.0** value before calibration:	Lot# 19340057 Exp 08/21	7.07	
pH **7.0** value after calibration:		7.00	
pH **7.0** mV **(range is -50 to +50 mV)**:		-41	
pH 10 value before calibration:	Lot# 19320102 Exp 08/21	9.94	18.1°C
pH 10 value after calibration:		10.00	
pH 10 mV **(range is -130 to -230 mV)**:		-178.4	
pH **4.0** value before calibration:	Lot# 20010025 Exp 08/21	4.02	17.00°C
pH **4.0** value after calibration:		4.00	
pH **4.0** mV **(range is 130 to 230 mV)**:		168.7	

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 228 mV)		
Calibration Temperature (°C):	Lot# 19460167 Exp 08/21	18.17
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		223.6
Reading after calibration (mV):		228

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
20 NTU Turbidity Standard	Lot# NA Exp NA	Before Cal: 20.4	After Cal:	19.9
100 NTU Turbidity Standard	Lot# NA Exp NA	Before Cal: 103	After Cal:	98
800 NTU Turbidity Standard	Lot# NA Exp NA	Before Cal: 811	After Cal:	775
10 NTU Turbidity Check STD	Lot# A0226 Exp. 11/21	Before Cal: 10.5	After Cal:	9.79
____ NTU Turbidity Check STD		Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?				YES

Date: 9-29-20
Time: 740
Prepared By: EVER GUILLEN
Checked By:

Wood.
Project No.
6122201429

~~Pine~~ Sonde ID: 613229
Pine Handset ID:
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes No ✓ Date: Time:	
Current Air Temperature °C (meter reading):		22.50
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	749.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.57
DO concentration after Calibration (mg/L):		9.03
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	-
DO Charge (DO ch):	Acceptable Range is 25 to 75	-
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	-

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		22.7
Reading before Calibration (mS/cm)		1.432
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		-

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:		6.91
pH 7.0 value after calibration:		7.02
pH 7.0 mV **(range is -50 to +50 mV)**:		5.6
pH 10 value before calibration:		9.76
pH 10 value after calibration:		10.04
pH 10 mV **(range is -130 to -230 mV)**:		-165.1
pH 4.0 value before calibration:		3.54
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		205.9

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		21.2
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	228
Reading before calibration (mV):		232.1
Reading after calibration (mV):		234.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**

10 NTU Turbidity Standard	Before Cal:	9.56	After Cal:	9.92
20 NTU Turbidity Standard	Before Cal:	19.79	After Cal:	19.97
100 NTU Turbidity Standard	Before Cal:	92.0	After Cal:	99.0
800 NTU Turbidity Check STD	Before Cal:	803	After Cal:	799
10 NTU Turbidity Check STD	Before Cal:	9.94	After Cal:	10.0
CALIBRATION SUCCESSFUL?				YES

Date: 9-30-20
Time: 800
Prepared By: Ever Guillen
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 613229
Pine Handset ID:
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		15.30
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	10.34
DO concentration after Calibration (mg/L):		9.07
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	–
DO Charge (DO ch):	Acceptable Range is 25 to 75	–
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	–

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		16.6
Reading before Calibration (mS/cm)		1.981
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		–

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	6.92	~~7.02~~
pH **7.0** value after calibration:		7.02
pH **7.0** mV **(range is -50 to +50 mV)**:		5.10
pH 10 value before calibration:		10.08
pH 10 value after calibration:		9.73
pH 10 mV **(range is -130 to -230 mV)**:		-166.7
pH **4.0** value before calibration:		4.20
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		170.8

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		16.0
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	228
Reading before calibration (mV):		191.6
Reading after calibration (mV):		228

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
10 NTU Turbidity Standard	Before Cal: 10.0	After Cal:	10.0
20 NTU Turbidity Standard	Before Cal: 18.8	After Cal:	18.1
100 NTU Turbidity Standard	Before Cal: 102	After Cal:	101
800 NTU Turbidity Check STD	Before Cal: 809	After Cal:	813
10 NTU Turbidity Check STD	Before Cal: 8.0	After Cal:	10.1
CALIBRATION SUCCESSFUL?			YES

Date: 10-1-20
Time: 800
Prepared By: EVER GUILLEN
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 613229
Pine Handset ID: _____
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		15.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.1
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	9.84
DO concentration after Calibration (mg/L):		8.99
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		16.1
Reading before Calibration (mS/cm)		1.439
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		6.91
pH **7.0** value after calibration:		7.02
pH **7.0** mV **(range is -50 to +50 mV)**:		5.2
pH 10 value before calibration:		9.74
pH 10 value after calibration:		10.08
pH 10 mV **(range is -130 to -230 mV)**:		-167.0
pH **4.0** value before calibration:		4.22
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		169.1

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		16.7
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	228
Reading before calibration (mV):		237.7
Reading after calibration (mV):		240

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
____NTU Turbidity Standard	Before Cal:	10.9	After Cal:	9.96
____ NTU Turbidity Standard	Before Cal:	22.0	After Cal:	20.0
_____ NTU Turbidity Standard	Before Cal:	99.5	After Cal:	99.4
_____ NTU Turbidity Check STD	Before Cal:	791	After Cal:	801
_____ NTU Turbidity Check STD	Before Cal:	9.96	After Cal:	9.97
CALIBRATION SUCCESSFUL?				YES

Date: 9/29/20
Time: 0825
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: _____
Pine Handset ID: 541714
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date: ___ Time: ___	
Current Air Temperature °C (meter reading):		23.4
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	749.6
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	-
DO concentration after Calibration (mg/L):		7.76
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.4
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 19150155	1.413
Temperature (°C)		24.3
Reading before Calibration (mS/cm)		1.413
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9999

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 19340057 / 8/2021 25.0°C	7.09
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-5.5
pH 10 value before calibration:	Lot 19320102 / 8/2021 25.1°C	9.99
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-176.8
pH 4.0 value before calibration:	20010025 / 8/2021 24.5°C	4.13
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		170.4

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 / 8/2021	24.0
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	230
Reading before calibration (mV):		223.4
Reading after calibration (mV):		230

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	21.8
100 NTU Turbidity Standard	Before Cal:	After Cal:	99.3
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	806
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.85
___ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Date: 9/[illegible]30/20
Time: 0810
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: _____
Pine Handset ID: 541714
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes____ No ✓ Date:____ Time:____	
Current Air Temperature °C (meter reading):		13.3
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.4
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		9.39
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	90.4
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.1060

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e, pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 1915015-5	1.413
Temperature (°C)		12.6
Reading before Calibration (mS/cm)		1.428
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9898

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 / 8/2021	7.11
pH **7.0** value after calibration:	14.7°C	7.06
pH **7.0** mV **(range is -50 to +50 mV)**:		-6.4
pH 10 value before calibration:	Lot 19320102 / 8/21	9.90
pH 10 value after calibration:	14.6°C	10.08
pH 10 mV **(range is -130 to -230 mV)**:		-77.6
pH **4.0** value before calibration:	Lot 20010025 / 8/21	4.30
pH **4.0** value after calibration:	15.0°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		165.4

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 / 8/21	14.9
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	242
Reading before calibration (mV):		233.2
Reading after calibration (mV):		242

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	19.4
100 NTU Turbidity Standard	Before Cal:	After Cal:	102
800 NTU Turbidity Standard Lot A815-5	Before Cal:	After Cal:	808
10 NTU Turbidity Check STD	Before Cal:	After Cal:	10.1
< 0.1 NTU Turbidity Check STD	Before Cal:	After Cal:	0.0
CALIBRATION SUCCESSFUL?			

Date: 10/1/20
Time: 0800
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: _____
Pine Handset ID: 54014
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		13.5
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.3
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		9.54
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.3
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0830

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 19150155	1.413
Temperature (°C)		13.4
Reading before Calibration (mS/cm)		1.415
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9984

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 19340057 1/8/2021	7.10
pH 7.0 value after calibration:	17.4°C	7.02
pH 7.0 mV **(range is -50 to +50 mV)**:		-6.1
pH 10 value before calibration:	Lot 19320102 1/8/21	~~10.1~~ 9.95
pH 10 value after calibration:	17.6°C	10.04
pH 10 mV **(range is -130 to -230 mV)**:		-178.8
pH 4.0 value before calibration:	Lot 20010025 1/8/21	4.25
pH 4.0 value after calibration:	17.8°C	4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		166.6

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 1/8/21	17.6
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	239
Reading before calibration (mV):		230.3
Reading after calibration (mV):		239

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard	Before Cal:	After Cal:	23.2
100 NTU Turbidity Standard	Before Cal:	After Cal:	105
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	808
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.59
<0.1 NTU Turbidity Check STD	Before Cal:	After Cal:	0.0
CALIBRATION SUCCESSFUL?			

Date: 9/29/20
Time: 06:15
Prepared By: A SHOREDITS
Checked By: NA

Wood.
Project No. 6122201429

SMARTROLL MP
~~Pine Sonde~~ ID: 642533
Pine Handset ID: NA (Tablet)
Battery Voltage %: 100
Hach 2100Q S/N 16110C053543

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**	
Was DO membrane changed?	Yes____ No X Date:____ Time:____		
Current Air Temperature °C (meter reading):		22.49	
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):			
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	-3.9	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:			A.S. 9/29/20
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.4829	99.9%
DO concentration after Calibration (mg/L):		8.49	100 %
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery		
DO Charge (DO ch):	Acceptable Range is 25 to 75		
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants		

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 19150155 Exp. NA.	1.413
Temperature (°C)		23.55
Reading before Calibration (mS/cm)		1.464
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH			
pH **7.0** value before calibration:	Lot# 19340057 Exp. 08/21	7.04	23.8°C
pH **7.0** value after calibration:		7.00	
pH **7.0** mV **(range is -50 to +50 mV)**:		-2.4	
pH 10 value before calibration:	Lot # 19320102 Exp. 08/21	10.01	23.8°C
pH 10 value after calibration:		10.00	
pH 10 mV **(range is -130 to -230 mV)**:		-178.3	
pH **4.0** value before calibration:	Lot # 20010025 Exp. 08/21	4.01	23.2°C
pH **4.0** value after calibration:		4.00	
pH **4.0** mV **(range is 130 to 230 mV)**:		172.7	

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 228 mV)		
Calibration Temperature (°C):	Lot # 19460167 Exp. 08/21	23.20
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		225.1
Reading after calibration (mV):		228

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**						
20 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 20.0	After Cal:	20.0
100 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 102	After Cal:	101
800 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 797	After Cal:	805
10 NTU Turbidity Check STD	Lot # A0226	Exp. 11/21	Before Cal: 10.1	After Cal:	10.5
____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					

Date: 9/30/2020
Time: 07:30
Prepared By: A. SHOREDITS
Checked By: NA

Wood.
Project No. 6122201429

SMARTROLL MP
~~Pine Sonde~~ ID: 642533
Pine Handset ID: NA
Battery Voltage %: 100
Hach 2100Q S/N 16110C053543

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No X Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		~~17.14~~ 16.34
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		-9.2 mm Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	10.4 101 %
DO concentration after Calibration (mg/L):		9.42 100.1 %
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 19150155 Exp. NA	1.413
Temperature (°C)		12.8 AS. 9/30/20
Reading before Calibration (mS/cm)		~~1.3842~~ 1.405
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot # 19340057 Exp. 08/21	7.06
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-3.7
pH 10 value before calibration:	Lot # 19320102 Exp 08/21	9.92
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-177.9
pH 4.0 value before calibration:	Lot # 20010025 Exp 08/21	4.56
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		175.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std. 228 mV)		
Calibration Temperature (°C):	Lot # 19460167 Exp. 08/21	15.89
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	
Reading before calibration (mV):		239.0
Reading after calibration (mV):		228.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.					
20 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 20.6	After Cal:	~~20.2~~ 19.7
100 NTU Turbidity Standard	Lot # NA	Exp NA	Before Cal: 103	After Cal:	99.1
800 NTU Turbidity Standard	Lot # NA	Exp. NA	Before Cal: 787	After Cal:	793
10 NTU Turbidity Check STD	Lot # A0226	Exp. 11/21	Before Cal: 10.8	After Cal:	10.5
____ NTU Turbidity Check STD			Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?					YES

10/01
Date: 09/3[illegible]2020
Time: 07:40
Prepared By: A. SHOREDITS
Checked By: NA

Wood.
Project No. 6122201429

SMARTROLL MP
Pine Sonde ID: 642533
Pine Handset ID: NA
Battery Voltage %: 100
Hach 2100Q S/N 16110C053543

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**	
Was DO membrane changed?	Yes ____ No X Date: ____ Time: ____		
Current Air Temperature °C (meter reading):			
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		~8.4 mm Hg	
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg		
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:			
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	9.16	100.7 %
DO concentration after Calibration (mg/L):		9.34	100.2 %
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery		
DO Charge (DO ch):	Acceptable Range is 25 to 75		
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants		

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e, pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# 19150155 Exp. NA	1.413
Temperature (°C)		14.26
Reading before Calibration (mS/cm)		1.402
Reading AFTER Calibration (mS/cm)		1.416
Conductivity Cell Constant (unitless):		—

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH			
pH **7.0** value before calibration:	Lot# 19340057 Exp 08/21	7.07	
pH **7.0** value after calibration:		7.00	
pH **7.0** mV **(range is -50 to +50 mV)**:		-41	
pH 10 value before calibration:	Lot# 19320102 Exp 08/21	9.94	18.1°C
pH 10 value after calibration:		10.00	
pH 10 mV **(range is -130 to -230 mV)**:		-178.4	
pH **4.0** value before calibration:	Lot# 20010025 Exp 08/21	4.02	17.00°C
pH **4.0** value after calibration:		4.00	
pH **4.0** mV **(range is 130 to 230 mV)**:		168.7	

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP) (Std 228 mV)		
Calibration Temperature (°C):	Lot# 19460167 Exp 08/21	18.17
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	—
Reading before calibration (mV):		223.6
Reading after calibration (mV):		228

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
20 NTU Turbidity Standard	Lot# NA Exp NA	Before Cal: 20.4	After Cal:	19.9
100 NTU Turbidity Standard	Lot# NA Exp NA	Before Cal: 103	After Cal:	98
800 NTU Turbidity Standard	Lot# NA Exp NA	Before Cal: 811	After Cal:	775
10 NTU Turbidity Check STD	Lot# A0226 Exp. 11/21	Before Cal: 10.5	After Cal:	9.79
____ NTU Turbidity Check STD		Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?				YES

Product Name: Low-Flow System

Date: 2020-09-22 15:54:27

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 CCR	Tubing Diameter	.17 in
Site Name	ARGWC-22	Tubing Length	27.8 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369323		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	22.8 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-22	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2140832 L
Well Total Depth	27.77 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.02 in
Depth to Water	13.03 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:30:45	600.03	20.01	5.78	1538.02	1.41	13.29	0.18	5.04
Last 5	15:35:45	900.02	19.89	5.78	1545.14	1.35	13.29	0.16	2.02
Last 5	15:40:45	1200.03	19.75	5.78	1539.72	1.19	13.31	0.14	0.58
Last 5	15:45:45	1500.02	19.61	5.77	1537.47	1.10	13.31	0.14	0.55
Last 5	15:50:45	1800.02	19.56	5.77	1536.29	0.74	13.31	0.13	0.05
Variance 0			-0.14	0.00	-5.42			-0.01	-1.44
Variance 1			-0.13	-0.00	-2.25			-0.01	-0.03
Variance 2			-0.05	-0.00	-1.18			-0.00	-0.50

Notes

ARGWC-22 sample time 1552

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-22 17:24:06

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 CCR	Tubing Diameter	.17 in
Site Name	ARGWC-23	Tubing Length	28.1 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369323		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	23.1 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-23	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2154222 L
Well Total Depth	28.11 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.2 in
Depth to Water	11.76 ft	Total Volume Pumped	3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	16:59:54	900.13	21.84	6.28	482.29	6.68	12.91	0.39	104.04
Last 5	17:04:54	1200.13	21.73	6.28	481.44	5.68	12.97	0.28	104.22
Last 5	17:09:54	1500.13	21.71	6.28	481.55	4.39	12.97	0.32	101.18
Last 5	17:14:54	1800.13	21.84	6.29	482.31	3.36	12.93	0.35	100.02
Last 5	17:19:54	2100.13	21.82	6.29	482.74	3.53	12.91	0.33	97.30
Variance 0			-0.03	0.00	0.11			0.05	-3.04
Variance 1			0.14	0.00	0.76			0.03	-1.17
Variance 2			-0.03	0.00	0.44			-0.03	-2.71

Notes: DUP-01 also collected
ARGWC-23 sample time 1722

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-30 15:56:32

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.17 in
Site Name	ARAMW-1	Tubing Length	45.3 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	40.3 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-1	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.682193 L
Well Total Depth	45.32 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	13.39 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:34:24	600.03	20.59	6.21	780.10	0.68	13.76	0.16	105.54
Last 5	15:39:24	900.03	20.50	6.22	780.53	1.78	13.76	0.16	105.53
Last 5	15:44:24	1200.00	20.52	6.19	775.81	1.12	13.76	0.18	108.70
Last 5	15:49:24	1500.02	20.46	6.18	769.31	0.42	13.76	0.17	107.72
Last 5	15:54:24	1800.02	20.41	6.16	768.24	0.09	13.76	0.17	109.28
Variance 0			0.02	-0.03	-4.72			0.02	3.18
Variance 1			-0.06	-0.01	-6.50			-0.00	-0.99
Variance 2			-0.05	-0.02	-1.07			0.00	1.56

Notes

ARAMW-1 sample time 1556

Grab Samples

Product Name: Low-Flow System

Date: 2020-10-01 15:13:03

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Alexis Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.17 in
Site Name	ARAMW-2	Tubing Length	24.9 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	19.8 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-2	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.5911392 L
Well Total Depth	24.84 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	13.58 ft	Total Volume Pumped	15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	14:49:21	3300.00	23.04	5.98	686.00	7.17	13.68	0.30	99.18
Last 5	14:54:21	3600.00	23.00	5.98	685.98	6.83	13.68	0.27	99.42
Last 5	14:59:21	3900.03	22.94	5.97	709.23	5.17	13.68	0.30	99.33
Last 5	15:04:21	4200.01	22.96	5.97	721.53	4.64	13.68	0.29	98.28
Last 5	15:09:21	4499.98	22.87	5.96	711.48	4.04	13.68	0.26	98.14
Variance 0			-0.07	-0.01	23.26			0.03	-0.09
Variance 1			0.02	0.00	12.29			-0.01	-1.05
Variance 2			-0.09	-0.01	-10.05			-0.03	-0.14

Notes

ARAMW-2 sample time 1512

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-29 15:27:14

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge dedicated
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.25 in
Site Name	ARGWA-19	Tubing Length	52.8 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	47.74 ft

Well Information:		Pumping Information:	
Well ID	ARGWA-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.9896642 L
Well Total Depth	52.74 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	26.6 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:03:49	600.02	19.44	5.84	169.59	1.00	26.62	3.08	103.23
Last 5	15:08:49	900.02	19.48	5.84	168.58	0.78	26.61	3.08	104.61
Last 5	15:13:49	1200.02	19.58	5.82	167.64	0.23	26.61	3.08	106.00
Last 5	15:18:49	1500.01	19.43	5.83	166.70	0.20	26.61	3.10	107.16
Last 5	15:23:49	1800.01	19.48	5.83	166.77	0.18	26.61	3.12	108.19
Variance 0			0.10	-0.01	-0.94			0.00	1.40
Variance 1			-0.14	0.01	-0.94			0.02	1.15
Variance 2			0.05	-0.00	0.06			0.02	1.03

Notes

ARGWA-19 sample time 1525

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-30 11:30:45

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge dedicated
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.25 in
Site Name	ARGWA-20	Tubing Length	37.7 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	32.7 ft

Well Information:		Pumping Information:	
Well ID	ARGWA-20	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.843908 L
Well Total Depth	37.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	14.24 ft	Total Volume Pumped	4.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	11:06:42	600.02	18.05	5.64	130.13	7.27	14.38	5.54	66.89
Last 5	11:11:42	900.02	18.10	5.64	130.17	4.23	14.38	5.57	67.80
Last 5	11:16:42	1200.02	18.14	5.65	130.23	4.37	14.38	5.59	68.95
Last 5	11:21:42	1500.01	18.17	5.64	130.22	3.60	14.38	5.56	70.68
Last 5	11:26:42	1800.01	18.22	5.65	130.37	4.66	14.38	5.55	72.36
Variance 0			0.04	0.00	0.06			0.02	1.15
Variance 1			0.02	-0.01	-0.02			-0.03	1.73
Variance 2			0.06	0.00	0.15			-0.01	1.68

Notes

ARGWA-20 sample time 1128

Grab Samples

Product Name: Low-Flow System

Date: 2020-10-01 16:09:15

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge dedicated
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.25 in
Site Name	ARGWC-21	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	22 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-21	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.7406238 L
Well Total Depth	26.98 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.1 in
Depth to Water	14.12 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:46:50	900.03	20.72	6.00	699.66	7.91	14.48	0.24	109.57
Last 5	15:51:50	1200.02	20.65	6.00	697.92	4.86	14.48	0.20	110.58
Last 5	15:56:50	1500.02	20.61	5.99	697.71	3.17	14.48	0.19	111.70
Last 5	16:01:50	1800.02	20.59	6.00	697.15	3.13	14.48	0.18	112.43
Last 5	16:06:50	2100.01	20.55	5.99	697.05	2.39	14.48	0.17	113.37
Variance 0			-0.04	-0.00	-0.21			-0.01	1.13
Variance 1			-0.02	0.00	-0.55			-0.01	0.72
Variance 2			-0.04	-0.00	-0.10			-0.01	0.94

Notes

ARGWC-21 sample time 1608.

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-30 14:00:16

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.17 in
Site Name	ARGWC-22	Tubing Length	27.8 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	22.8 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-22	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6040831 L
Well Total Depth	27.74 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.01 in
Depth to Water	13.67 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	13:37:07	600.02	20.06	5.75	1504.99	1.35	13.97	0.21	93.17
Last 5	13:42:07	900.02	20.01	5.76	1493.79	1.21	13.97	0.18	93.62
Last 5	13:47:07	1200.02	19.94	5.78	1479.67	1.10	13.97	0.17	93.79
Last 5	13:52:07	1500.01	19.96	5.80	1457.39	1.05	13.97	0.16	93.08
Last 5	13:57:07	1800.01	19.90	5.81	1447.27	0.80	13.97	0.16	92.81
Variance 0			-0.07	0.02	-14.12			-0.00	0.18
Variance 1			0.01	0.02	-22.28			-0.01	-0.71
Variance 2			-0.06	0.01	-10.13			-0.00	-0.27

Notes

ARGWC-22 sample time 1400

Grab Samples

Product Name: Low-Flow System

Date: 2020-10-01 12:00:51

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic pump
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP2	Tubing Diameter	.17 in
Site Name	ARGWC-23	Tubing Length	28.1 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	23 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-23	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6054222 L
Well Total Depth	28.08 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.3 in
Depth to Water	12.1 ft	Total Volume Pumped	4.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	11:35:26	1500.02	24.91	6.39	476.93	2.56	12.84	0.41	88.84
Last 5	11:40:26	1800.01	25.04	6.39	477.76	2.02	12.89	0.35	90.72
Last 5	11:45:26	2100.01	25.21	6.39	477.41	2.09	12.93	0.32	92.67
Last 5	11:50:26	2400.01	25.45	6.38	477.18	2.08	12.95	0.32	94.56
Last 5	11:55:26	2700.01	25.62	6.38	476.38	2.20	12.97	0.31	95.52
Variance 0			0.18	-0.00	-0.35			-0.03	1.95
Variance 1			0.24	-0.01	-0.23			-0.01	1.89
Variance 2			0.17	0.00	-0.80			-0.01	0.95

Notes

ARGWC-23 sample time 1158. DUP-02 also collected.

Grab Samples

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARAMW-1
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARAMW-2
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARGWA-19
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARGWA-20
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARGWC-21
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARGWC-22
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: ARGWC-23
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: DASP-1
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?			✓
b	Is the casing free of degradation or deterioration?			✓
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			✓
e	Is the well locked and is the lock in good condition?			✓
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?			✓
b	Is the well pad sloped away from the protective casing?			✓
c	Is the well pad in complete contact with the protective casing?			✓
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)			✓
e	Is the pad surface clean (not covered with sediment or debris)?			✓
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: DASP-2
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?			✓
b	Is the casing free of degradation or deterioration?			✓
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			✓
e	Is the well locked and is the lock in good condition?			✓
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?			✓
b	Is the well pad sloped away from the protective casing?			✓
c	Is the well pad in complete contact with the protective casing?			✓
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)			✓
e	Is the pad surface clean (not covered with sediment or debris)?			✓
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: DA55-1
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?			✓
b	Is the casing free of degradation or deterioration?			✓
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			✓
e	Is the well locked and is the lock in good condition?			✓
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?			✓
b	Is the well pad sloped away from the protective casing?			✓
c	Is the well pad in complete contact with the protective casing?			✓
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)			✓
e	Is the pad surface clean (not covered with sediment or debris)?			✓
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel L Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: DA55-3
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?			✓
b	Is the casing free of degradation or deterioration?			✓
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			✓
e	Is the well locked and is the lock in good condition?			✓
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?			✓
b	Is the well pad sloped away from the protective casing?			✓
c	Is the well pad in complete contact with the protective casing?			✓
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)			✓
e	Is the pad surface clean (not covered with sediment or debris)?			✓
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Groundwater Monitoring Well Integrity Form

Site Name: Plant ARKWRIGHT
Permit Number:
Well ID: DA53-4
Date: 9/28/20

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?			✓
b	Is the casing free of degradation or deterioration?			✓
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			✓
e	Is the well locked and is the lock in good condition?			✓
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?			✓
b	Is the well pad sloped away from the protective casing?			✓
c	Is the well pad in complete contact with the protective casing?			✓
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)			✓
e	Is the pad surface clean (not covered with sediment or debris)?			✓
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?			✓
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			N/A
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?			N/A
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			N/A
c	Does the well require redevelopment (low flow, turbid)?			N/A
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Daniel Howard

Data Evaluation Narrative
Project: Plant Arkwright Second Semiannual Event
Wood Project Number: 6122201429.2003.**
Site: Ash Pond No. 2 – Former Plant Arkwright, Georgia
Matrix: Groundwater

Eurofins TestAmerica SDG No: 180-111648-1

Introduction

A data quality evaluation (DQE) was performed on the laboratory data reported for the Second Semiannual groundwater sampling event conducted at Ash Pond No. 2 (Dry Ash Stockpile) at the former Plant Arkwright, located in Arkwright, Georgia in September/October 2020 for Southern Company Services (SCS). The samples were collected and analyzed per the protocols presented in the *Draft Former Plant Arkwright Field Sampling Plan* (FSP) (SCS, 2016) and in accordance with the monitoring requirements of §§ 257.90. through 257.95 as referenced in the Georgia Environmental Protection Division (EPD) Rules 391-3-4-10(6)(a)-(c) and 391-3-4-.14. GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D.

The following sections provide summary discussions of the required data qualifications for the analytical methods for samples collected. A Level II DQE validation was performed on the samples analyzed by the fixed-based laboratory within these sample delivery groups (SDGs). A Level II DQE consists of review of the following criteria: sample integrity, holding times, method blanks, laboratory control samples (LCSs), matrix spikes/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), post digestion spikes (PDS), where applicable, laboratory and field duplicate RPDs, field and/or equipment blanks, and reporting limits. Additionally, the data summary tables generated from the electronic data deliverable (EDD) were compared to the laboratory hardcopy data report to verify that the EDD and laboratory data report agree.

The data were reviewed using the laboratory's precision and accuracy limits, the method requirements, and the SCS Field Sampling Plan (FSP) (SCS, 2016). DQE data qualifications were applied, if necessary, using the procedures in USEPA Region IV *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy* (USEPA, 2011) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, 2017), as guidance, and professional judgment using the following qualifiers:

Qualifier	Usable Data
J	The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. *SCS Definition: Value J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce as reliable of a value. Therefore, the value displayed (value J) is qualified by the laboratory as estimated.*
UJ	The analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

Qualifier	Usable Data (continued)
U	Analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. *Note: SCS does not use the "U" flag except when reporting results for radium that are detected below the Minimum Detection Concentration (MDC).*
U*	This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Qualifier	Unusable Data
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be confirmed.
UR	The analyte was analyzed for but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

The analytical results for the samples reported in this SDG are usable with the qualifications discussed in this narrative. A summary of the data with associated qualifiers is presented in **Table 1**.

Deliverables

The data package as submitted to Wood Environment & Infrastructure Solutions, Inc. (Wood) is complete to perform a Level II DQE for USEPA Methods SW6020B, SW7470A, EPA 300.0 R2.1, and SM 2540C.

Sample Integrity

The groundwater samples were submitted to Eurofins TestAmerica in Pittsburgh, Pennsylvania (TAL PIT) and analyzed for CCR Appendix III and detected Appendix IV metals, plus silver, by Method SW6020B and mercury by Method SW7470A, anions (chloride, fluoride, and sulfate) by Method 300.0 R2.1, and total dissolved solids (TDS) by Method SM 2540C. The samples were also analyzed for radium-226 and 228 combined by Methods SW9315 and SW9320. The radium analyses were performed at Eurofins TAL St. Louis, Missouri laboratory (TAL SL) and reported in SDG 180-111648-2. The DQE for the radium analyses is presented separately.

Based on the information provided on the Chain-of-Custody (COC) forms, the field samples arrived at the laboratory intact and within the temperature range and preservation requirements. Completed COC documents are included in the data package.

Sample Identification

This SDG contains the following groundwater and/or quality control (QC) samples:

Sample ID	Sample Date	DQE Level	Sample ID	Sample Date	DQE Level
Ash Pond No. 2					
ARGWA-19	09/29/20	II	ARGWC-21	10/01/20	II
ARGWA-20	09/30/20	II			
ARGWC-22	09/30/20	II	**QC Samples**		
ARAMW-1	09/30/20	II	EB-02	09/30/20	II
ARGWC-23	10/01/20	II	FB-02	10/01/20	II
ARAMW-2	10/01/20	II	DUP-02	10/01/20	II

These samples were collected from the Ash Pond No. 2 monitoring wells listed above between September 29 and October 1, 2020. Each of the sample IDs above were amended with a sample date code (-mmddyy) by Wood to create unique IDs in the database. Sample DUP-2 is a field duplicate of ARGWC-23. Sample EB-02 is an equipment blank, and sample FB-02 is a field blank. The equipment blank sample associations are listed below:

Equipment Blank	Associated Samples
EB-02 (peristaltic pump)	ARAMW-1, ARAMW-2, ARGWC-22, ARGWC-23, DUP-2

The analytical results for the metals, anions, and TDS data are usable with the qualifications discussed in this narrative. A summary of the data quality is presented below.

Metals (SW6020B/7470A)

The samples were submitted to TAL PIT for CCR Appendix III and detected Appendix IV metals, plus silver (Ag), by Method SW6020B and mercury by SW7470A. The CCR Appendix III metals are boron (B) and calcium (Ca). The *detected* CCR Appendix IV metals are: arsenic (As), barium (Ba), beryllium (Be), chromium (Cr), cobalt (Co), lead (Pb), lithium (Li), mercury (Hg), molybdenum (Mo), and selenium (Se). Each of the Level II components were within QC limits except for field blank contamination.

Holding Times

The sample analyses were performed within the 6-month and 28-day (for mercury) analysis holding times.

Method Blanks

The method blanks associated with the samples analyzed within this SDG did not contain reportable concentrations of metals or mercury.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCSs.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Batch MS/MSD analyses for metals were not performed on project samples collected from Ash Pond No. 2 and were not provided in the laboratory report. An MS/MSD was performed on a sample from Ash Pond No. 3 and reported in SDG 180-111645-1, and the recoveries and RPDs were within QC limits.

Post Digestion Spike (PDS)

A PDS analysis was not available for review.

Field Duplicate Precision

One field duplicate/sample pair (DUP-02/ARGWC-23) was collected with this SDG, and the RPDs were within QC limits for results greater than or equal to five times the reporting limit.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

Field accuracy was measured through the collection of equipment/rinsate blanks and field blanks. Equipment rinsate blanks are collected to monitor the decontamination process on non-dedicated sampling equipment. Field blanks are collected to assess the water used to decontaminate the equipment and the containers into which samples are placed. Equipment blank EB-02 did not contain metals, and field blank FB-02 reported boron above the RL. Results less than ten times the blank are considered not detected as a possible field artifact: **Reason Code: BF**

> *Action: The B results for ARAMW-1, ARAMW-2, ARGWA-20, ARAWC-21, ARGWC-23, and DUP-2 were qualified as not detected due to blank contamination and flagged "U*".*

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of metals by USEPA Methods SW6020B and SW7470A. The laboratory RL was elevated where dilutions were required to place the constituent within the calibration range. None of the samples in this SDG required dilution.

Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

Total and Dissolved Metals Comparison

If total and dissolved metals samples were collected, comparison of the total and dissolved results can aid in the representativeness of the total metals value verses the metals that may be associated with suspended solids and metals actually dissolved within the water column. There were no dissolved metals collected from the wells at Ash Pond No. 2.

Anions (EPA 300.0 R2.1)

The samples were submitted to TAL PIT for anions (chloride, fluoride, and sulfate) by Method 300.0 R2.1. Each of the Level II components were within the QC limits.

Holding Times

The sample analyses were performed within the 28-day analysis holding time.

Method Blanks

The method blank associated with the samples analyzed in this SDG contained no reportable detections of anions.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Batch MS/MSDs for anions (fluoride) were performed on Ash Pond No. 2 samples ARGWA-20 and DUP-02, and the recoveries and RPD were within QC limits.

Field Duplicate Precision

One field duplicate/sample pair (DUP-2/ARGWC-23) was collected with this SDG, and the RPDs were within QC limits.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The equipment blank sample (EB-02) and field blank sample (FB-02) did not contain reportable concentrations of anions.

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of anions by USEPA Method 300 R2.1. One sample required a dilution for sulfate resulting in elevated RLs. The following sample dilution was performed:

Sample	**Anion**	**Dilution**
ARGWC-22	sulfate	10x
ARAMW-1	sulfate	5x
ARAMW-2	sulfate	5x
ARGWC-21	sulfate	5x

Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

TDS (SM 2540C)

The samples were submitted to TAL PIT for TDS by Method SM 2540C. Each of the Level II components were within the QC limits.

Holding Times

The sample analyses were performed within the 7-day analysis holding time.

Method Blanks

The method blank did not contain reportable levels of TDS.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Field Duplicate Precision

One field duplicate/sample pair in this SDG (DUP-2/ARGWC-23) was analyzed for TDS, and the RPD was within QC limits.

Laboratory Duplicate Precision

A laboratory duplicate was analyzed on project sample ARAMW-1 and DUP-02 and the RPDs were within QC limits.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The equipment blank sample (EB-02) and field blank sample (FB-02) did not contain TDS.

Reporting Limits

The laboratory RL met the SCS project RL and was below the screening value of 500 mg/L for samples submitted for the analysis of TDS by Method SM 2540C and no samples required dilutions; therefore, RLs were met for this project. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory, however there were none in this SDG.

Overall Site Evaluation and Professional Judgment Flagging Changes

The chemical data included in this SDG was validated in general accordance with the guidelines contained in the project work plan and validation SOPs. Professional judgment was not used to modify flags for results reported in samples presented in this SDG.

Completeness

A total of 7 wells, along with the required QC samples, were sampled and analyzed during the 2020 Second Semiannual event at Ash Pond No. 2 according to the FSP. The 7 well locations along with field duplicate, field blank, and equipment blank samples were reported in this SDG and were sampled and analyzed as scoped.

Therefore, both field and analytical completeness calculated for this SDG was 100%.

References

SCS, 2016, Draft Field Sampling Plan – Former Plant Arkwright, Georgia Power Company, Earth Science and Environmental Engineering Technical Services, Southern Company Services, Inc. (SCS), August 17, 2016. Permit modification to include the Appendix III and IV sampling requirements; approval of modified permit and FSP pending.

USEPA, 2011. Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy, Revision 2.0; September 2011.

USEPA, 2017. National Office of Superfund Remediation and Technology Innovation, National Functional Guidelines for Inorganic Superfund Methods Data Review, Revision 0.0; January 2017.

Prepared by/Date: JAH 11/12/2020
Checked by/Date: DWK 11/13/2020

TABLE 1
SUMMARY OF DATA QUALIFIERS

TABLE 1
SUMMARY OF DATA QUALIFIERS
SAMPLE DELIVERY GROUP 180-111648-1
SAMPLING DATES: September 29-30 and October 1, 2020
Plant Arkwright Ash Pond No. 2 - Second Semiannual Event

Field Sample ID	Location ID	Type	SDG	Method	Parameter Name	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
ARAMW-1	ARAMW-1	N	180-111648-1	6020B	boron	0.98		U*	BF	mg/L
ARAMW-1	ARAMW-1	N	180-111648-1	6020B	cobalt	0.001	J	J	--	mg/L
ARAMW-1	ARAMW-1	N	180-111648-1	6020B	molybdenum	0.0054	J	J	--	mg/L
ARAMW-2	ARAMW-2	N	180-111648-1	300.0 R2.1	fluoride	0.0980	J	J	--	mg/L
ARAMW-2	ARAMW-2	N	180-111648-1	6020B	boron	0.95		U*	BF	mg/L
ARGWA-19	ARGWA-20	N	180-111648-1	300.0 R2.1	fluoride	0.051	J	J	--	mg/L
ARGWA-19	ARGWA-20	N	180-111648-1	6020B	lithium	0.0041	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-111648-1	300.0 R2.1	fluoride	0.032	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-111648-1	6020B	beryllium	0.00019	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-111648-1	6020B	boron	0.083		U*	BF	mg/L
ARGWA-20	ARGWA-20	N	180-111648-1	6020B	cobalt	0.00031	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-111648-1	6020B	lead	0.00022	J	J	--	mg/L
ARGWA-20	ARGWA-20	N	180-111648-1	6020B	selenium	0.0016	J	J	--	mg/L
ARGWC-21	ARGWC-21	N	180-111648-1	300.0 R2.1	fluoride	0.098	J	J	--	mg/L
ARGWC-21	ARGWC-21	N	180-111648-1	6020B	boron	0.9		U*	BF	mg/L
ARGWC-21	ARGWC-21	N	180-111648-1	6020B	cobalt	0.00082	J	J	--	mg/L
ARGWC-22	ARGWC-22	N	180-111648-1	300.0 R2.1	fluoride	0.045	J	J	--	mg/L
ARGWC-23	ARGWC-23	N	180-111648-1	6020B	boron	0.49		U*	BF	mg/L
DUP-02-100120	ARGWC-23	FD	180-111648-1	6020B	boron	0.47		U*	BF	mg/L

Notes:
Metals results are total metals unless otherwise noted.

Laboratory Qualifiers:

J= Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Reason Codes:

BF = Field blank contamination. The result should be considered "not-detected".

-- = No Reason Code assigned for values detected between the method detection limit (MDL) and the reporting limit (RL);estimated quantitation.

Validation Qualifiers:

J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.The associated numerical value is the approximate concentration of the analyte in the sample.

U* = This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Prepared by/Date: JAH 11/12/20
Checked by/Date: DWK 11/13/20

DQE CHECKLISTS

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright AP2 CCR Second Semiannual Event
Project No: 6122201429.2003.****
Method: Metals and Mercury by SW6020B/SW7470
Laboratory and Lot: TAL PIT SDG: 180-111648-1
Reviewer/Date: J. Hartness 11/12/2020 **Senior Reviewer/Date:** D. Knaub 11/13/20

YES	NO	NA	COMMENTS

Hg analyzed on FB-02, ARGWC-23

X **Case Narrative and COC Completeness Review**
OK

X **Sample Preservation and cooler temperature met (HNO_3 to pH<2)**
OK, 2.0, 2.4, 2.7, 3.6°C

X **Holding times met (180 days; Hg = 28 days)**
Coll: 09/29/20, 09/30/20, 10/01/20
Prep: metals – 10/12/20, 10/13/20 Hg – 10/14/20
Anal: metals – 10/21/20, 10/22/20 Hg – 10/15/20

X **QC Blanks Review**
Method Blanks:
p. 24 MB 180-3331132/1-A = ND
p. 24 MB 180-333214/1-A = ND

Hg:
p. 25 MB 180-333418/1-A Hg = ND

Equipment Blanks: (non-dedicated equip.)
EB-02 (peristaltic) = ND
Field Blanks: (DI water)
FB-02 B = 0.11 mg/L x10 = **1.1 mg/L**
Flag assoc. results "U*": Reason Code: BF *ARAMW-1, ARAMW-2, ARGWA-20, ARAWC-21, ARGWC-23, DUP-2*

X **Laboratory Control Sample (LCS) recovery within limits (Metals 80-120%, Hg = 80-120%)**
p. 24 LCS 180-333113/2-A metals = All OK
p. 25 LCS 180-333214/2-A metals = All OK

Hg:
p. 25 LCS 180-333418/1-A Hg = 94%

Metals and Mercury by SW6020B/SW7470A (cont.)

YES NO NA COMMENTS

X **Lab Duplicate - Field Duplicate precision goals met (20%)**

Results in mg/L

metal	ARGWC-23	DUP-2-0820	RPD/Diff	RL
Ba	0.17	0.16	6%	
B	0.49 U*	0.47 U*	4.2%	
Ca	73	72	1.4%	
Co	0.0052	0.0047	10%	
Li	0.04	0.039	2.5%	
Mo	0.064	0.062	3.2%	
Hg	<0.00013	NA	-	

All RPDs/Diff OK

X **Matrix Spike recoveries and RPDs within limits (75-125%, RPD 20)**

No MS/MSDs submitted with this SDG – see 180-111645-1

X **Total metals vs dissolved metals within limits (RPD < 20% or diff. < RL)**

No samples were analyzed for dissolved metals in AP2

X **EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright AP2 CCR Second Semiannual Event
Project No: 6122201429.2003.****
Method: Anions (chloride, fluoride, and sulfate) by E300.0 R2.1
Laboratory and Lot: TAL PIT SDG: 180-111648-1
Reviewer/Date: J. Hartness 11/12/2020 **Senior Reviewer/Date:** D. Knaub 11/13/20

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6°C)** OK, 2.0, 2.4, 2.7, 3.6°C	
X			**Holding times met (Cl, SO_4, F – 28 days)** Coll: 09/29/20, 09/30/20, 10/01/20 Anal: 10/06/10, 10/12/20	
X			**QC Blanks Review** Method Blanks: p. 22 MB 180-332371/38 = ND p. 22 MB 180-332371/6 = ND p. 23 MB 180-333015/6 Cl, F = ND p. 23 MB 180-333147/6 SO_4 = ND Equipment Blanks: EB-02 = ND Field Blanks: FB-02 = ND	
X			**Laboratory Control Sample (LCS) recovery within limits (90-110%)** p. 22 LCS 180-332371/37 = All recoveries ok p. 22 LCS 180-332371/5 = All recoveries ok p. 23 LCS 180-333015/5 Cl, F = All recoveries ok p. 23 LCS 180-333147/5 SO_4 = All recoveries ok	
X			**Lab Duplicate - Field Duplicate precision goals met (20%)**	

Results in mg/L

anion	ARGWC-23	DUP-2-100120	RPD
Cl	3.8	3.8	0.0%
F	0.32	0.32	0.0%
SO_4	64	63	1.6%

All OK

Anions (chloride, fluoride, and sulfate) by E300.0 R2.1 (cont.)

YES	NO	NA	COMMENTS
X			**Matrix Spike recoveries and RPDs within limits (lab %Rec limits, RPD = 20)** p. 22 ARGWA-20 – all recoveries and RPDs ok p. 23 DUP-02 – all recoveries and RPDs ok
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

Sample	Anion	Dilution
ARGWC-22	sulfate	10x
ARAMW-1	sulfate	5x
ARAMW-2	sulfate	5x
ARGWC-21	sulfate	5x

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright AP2 CCR Second Semiannual Event
Project No: 6122201429.2003.****
Method: Total Dissolved Solids (TDS) by SM 2540C
Laboratory and Lot: TAL PIT SDG: 180-111648-1
Reviewer/Date: J. Hartness 11/12/2020 **Senior Reviewer/Date:** D. Knaub 11/13/20

YES NO NA COMMENTS

X **Case Narrative and COC Completeness Review**
OK

X **Sample Preservation and cooler temperature met (Cool to 6ºC)**
OK, 2.0, 2.4, 2.7, 3.6°C

X **Holding times met (7 days)**
Coll: 09/29/20, 09/30/20, 10/01/20
Anal: 10/01/20, 10/02/20, 10/05/20

X **QC Blanks Review**
Method Blanks
p. 25 MB 180-331996/2 TDS = ND
p. 26 MB 180-332159/2 TDS = ND
p. 26 MB 180-332329/2 TDS = ND
p. 26 MB 180-332342/2 TDS = ND

Equipment Blanks:
EB-02 TDS = ND

Field Blanks:
FB-02 TDS = ND

X **Laboratory Control Sample (LCS) recovery within lab limits (80-120%)**
p. 25 LCS 180-331996/1 TDS = 85% - OK
p. 26 LCS 180-332159/1 TDS = 104% - OK
p. 26 LCS 180-332329/1 TDS = 94% - OK
p. 26 LCS 180-332342/1 TDS = 89% - OK

X **Lab Duplicate - Field Duplicate precision goals met (20%)**

Results in mg/L

anion	ARGWC-23	DUP-2-100120	RPD
TDS	290	290	0.0%

p. 26 Lab dup on:
ARAMW-1 RPD = 0.4
DUP-02 RPD = 8

X **Matrix Spike recoveries and RPDs within limits (if applicable)**
MS/MSD not applicable for TDS

X **EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

Data Evaluation Narrative
Project: Plant Arkwright Second Semiannual Event
Wood Project Number: 6122201429.2003.**
Site: Ash Pond No. 2 – Former Plant Arkwright, Georgia
Matrix: Groundwater

Eurofins TestAmerica SDG No: 180-111648-2 (Radium)

Introduction

A data quality evaluation (DQE) was performed on the laboratory data reported for the Second Semiannual groundwater sampling event conducted at Ash Pond No. 2 (Dry Ash Stockpile) at the former Plant Arkwright, located in Arkwright, Georgia in September/October 2020 for Southern Company Services (SCS). The samples were collected and analyzed per the protocols presented in the *Draft Former Plant Arkwright Field Sampling Plan* (FSP) (SCS, 2016) and in accordance with the monitoring requirements of §§ 257.90 through 257.95 as referenced in the Georgia Environmental Protection Division (EPD) Rules 391-3-4-.10(6)(a)-(c) and 391-3-4-.14. GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D.

The following sections provide summary discussions of the required data qualifications for the analytical methods for samples collected. A Level II DQE validation was performed on the samples analyzed by the fixed-based laboratory within these sample delivery groups (SDGs). A Level II DQE consists of review of the following criteria: sample integrity, holding times, method blanks, laboratory control samples (LCSs), matrix spikes/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), post digestion spikes (PDS), where applicable, laboratory and field duplicate RPDs, field and/or equipment blanks, and reporting limits. Additionally, the data summary tables generated from the electronic data deliverable (EDD) were compared to the laboratory hardcopy data report to verify that the EDD and laboratory data report agree.

The data were reviewed using the laboratory's precision and accuracy limits, the method requirements, and the SCS Field Sampling Plan (FSP) (SCS, 2016). DQE data qualifications were applied, if necessary, using the procedures in USEPA Region IV *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy* (USEPA, 2011) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, 2017), as guidance, and professional judgment using the following qualifiers:

Qualifier	Usable Data
J	The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. *SCS Definition: Value J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce as reliable of a value. Therefore, the value displayed (value J) is qualified by the laboratory as estimated.*
UJ	The analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

Qualifier	Usable Data (continued)
U	Analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. *Note: SCS does not use the "U" flag except when reporting results for radium that are detected below the Minimum Detection Concentration (MDC).*
U*	This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Qualifier	Unusable Data
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be confirmed.
UR	The analyte was analyzed for but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

The analytical results for the samples reported in this SDG are usable with the qualifications discussed in this narrative. A summary of the data with associated qualifiers is presented in **Table 1**.

Deliverables

The data package as submitted to Wood Environment & Infrastructure Solutions, Inc. (Wood) is complete to perform a Level II DQE for USEPA Methods 9315 and 9320.

Sample Integrity

The groundwater samples were submitted to Eurofins TestAmerica laboratory located in St. Louis, Missouri (TAL SL) via the Pittsburgh, Pennsylvania location and analyzed for radium-226 and 228 combined by Methods SW9315 and SW9320. As requested by SCS, the radium data was reported separately from the other CCR Appendix III and IV parameters (reported in SDG 180-111648-1).

Based on the information provided on the Chain-of-Custody (COC) forms, the field samples arrived at the laboratory intact and within the temperature range and preservation requirements. Completed COC documents are included in the data package.

Sample Identification

This SDG contains the following groundwater and quality control (QC) samples:

Sample ID	Sample Date	DQE Level	Sample ID	Sample Date	DQE Level
Ash Pond No. 2					
ARGWA-19	09/29/20	II	ARGWC-21	10/01/20	II
ARGWA-20	09/30/20	II			
ARGWC-22	09/30/20	II	**QC Samples**		
ARAMW-1	09/30/20	II	EB-02	09/30/20	II
ARGWC-23	10/01/20	II	FB-02	10/01/20	II
ARAMW-2	10/01/20	II	DUP-02	10/01/20	II

These samples were collected from the Ash Pond No. 2 monitoring wells listed above between September 29 and October 1, 2020. Each of the sample IDs above were amended with a sample date code (-mmddyy) by Wood to create unique IDs in the database. Sample DUP-02 is a field duplicate of ARGWC-23. Sample EB-02 is an equipment blank, and sample FB-02 is a field blank. The equipment blank sample associations are listed below:

Equipment Blank	Associated Samples
EB-02 (peristaltic pump)	ARAMW-1, ARAMW-2, ARGWC-22, ARGWC-23, DUP-02

The analytical results for the radium data are usable with the qualifications discussed in this narrative. A summary of the data quality is presented below.

Radium (SW9315/SW9320)

The samples were submitted to TAL SL for radium-226, radium-228 and total radium by Methods SW9315 and SW9320. Total radium was measured by calculation. Each of the Level II components were within laboratory QC limits except for method blank contamination and LCS recoveries.

Holding Times

The sample analyses were performed within the 6 months analysis holding times.

Method Blanks

The laboratory method blanks did not contain reportable concentrations of radium-228 above the minimum detected concentration (MDC) indicating no interference from the analytical systems. One of the method blanks contained radium-226 above the MDC, and any result less than the two-sigma (2σ) normalized absolute difference (NAD) limit of 2.58 are considered "not detected" as possible lab artifacts: **Reason Code: BL**

> *Action: The radium-226 and/or total radium results for samples ARGWA-19, ARGWA-20, ARGWC-22 were qualified as not detected and flagged "U*".*

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits.

Laboratory Duplicate Precision

Laboratory duplicate analyses were performed via the analysis of LCSDs. The relative error ratios (RERs) between the LCS and LCSDs were within QC limits.

Field Duplicate Precision

One field duplicate pair (ARGWC-23/DUP-02) was submitted and the RER could not be calculated because the results in one or both samples were less than the MDCs.

Sampling Accuracy (Equipment Blanks, Field Blanks)

Field accuracy was measured through the collection of equipment/rinsate blanks and field blanks. Equipment rinsate blanks are collected to monitor the decontamination process on non-dedicated sampling equipment. Field blanks are collected to assess the water used to decontaminate the equipment and the containers into which samples are placed. The equipment blank (EB-02) did not contain radium-226 or radium-228 above the MDC. The field blank (FB-02) contained radium-228 above the MDC, and any result less than the two-sigma (2σ) normalized absolute difference (NAD) limit of 2.58 are considered "not detected" as possible field artifacts: **Reason Code: BF**

Action: The radium-228 and total radium results for sample ARGWC-23 were qualified as not detected and flagged "U".*

Carrier and Tracer Yield Recoveries

The carrier and tracer yield recoveries for the samples and QC were within the QC limits of 40% to 110% with the exception of Yttrium recovery in sample EB-02 for radium-228. Yttrium recovered above the QC limits indicating a possible high bias. High bias affects positive results only.

Action: No qualification was necessary because radium-228 was not detected in sample EB-02.

Reporting Limits/Minimum Detectable Concentrations

The RLs (MDCs) met the SCS project RLs and were below the screening level of 5 pCi/L for samples submitted for the analysis of radium-226 and radium-228 by Methods SW9315 and SW9320.

Sample results in which the values were reported at concentrations below the MDC were flagged "U" and considered not detected.

Total and Dissolved Radium Comparison

If total and dissolved radium samples were collected, comparison of the total and dissolved results can aid in the representativeness of the total radium value verses the radium that may be associated with suspended solids and radium actually dissolved within the water column. The dissolved radium results should be less than or equal to the total radium concentration for positive results greater than 5 times the RL. No total and dissolved samples were collected and reported in this SDG.

Overall Site Evaluation and Professional Judgment Flagging Changes

The chemical data included in this SDG was validated in general accordance with the guidelines contained in the project work plan and validation SOPs. Professional judgment was not used to modify flags for results reported in samples presented in this SDG.

Completeness

A total of 7 wells, along with the required QC samples, were sampled and analyzed during the September/October 2020 event in Ash Pond No. 2 according to the FSP. The 7 well locations along with field duplicate, equipment blank, and field blank samples were reported in this SDG and were sampled and analyzed as scoped.

Therefore, both field and analytical completeness calculated for this SDG was 100%.

References

SCS, 2016, Draft Field Sampling Plan – Former Plant Arkwright, Georgia Power Company, Earth Science and Environmental Engineering Technical Services, Southern Company Services, Inc. (SCS), August 17, 2016. Permit modification to include the Appendix III and IV sampling requirements; approval of modified permit and FSP pending.

USEPA, 2011. Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy, Revision 2.0; September 2011.

USEPA, 2017. National Office of Superfund Remediation and Technology Innovation, National Functional Guidelines for Inorganic Superfund Methods Data Review, Revision 0.0; January 2017.

Prepared by/Date: JAH 12/16/2020
Checked by/Date: DWK 12/17/2020

TABLE 1
SUMMARY OF DATA QUALIFIERS

TABLE 1
SUMMARY OF DATA QUALIFIERS
SAMPLE DELIVERY GROUP: 180-111648-2
SAMPLING DATES: September 29 through October 1, 2020
Plant Arkwright Ash Pond No. 2 - Second Semiannual Event

Field Sample ID	Location ID	Type	SDG	Method	Parameter Name	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
ARGWA-19	ARGWA-19	N	180-111648-2	9315	radium-226	0.337		U*	BL	pCi/L
ARGWA-20	ARGWA-20	N	180-111648-2	9315	radium-226	0.267		U*	BL	pCi/L
ARGWA-20	ARGWA-20	N	180-111648-2	9315 + 9320	total radium	0.679		U*	BL	pCi/L
ARGWC-22	ARGWC-22	N	180-111648-2	9315	radium-226	0.18		U*	BL	pCi/L
ARGWC-22	ARGWC-22	N	180-111648-2	9315 + 9320	total radium	0.602		U*	BL	pCi/L
ARGWC-23	ARGWC-23	N	180-111648-2	9320	radium-228	0.521		U*	BF	pCi/L
ARGWC-23	ARGWC-23	N	180-111648-2	9315 + 9320	total radium	0.749		U*	BF	pCi/L

Notes:

Reason Codes:
BF = Field blank contamination. The result should be considered "not-detected".
BL = Laboratory blank contamination. The result should be considered "not-detected".

Validation Qualifiers:
U* = This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

Prepared by/Date: JAH 12/16/20
Checked by/Date: DWK 12/17/20

DQE CHECKLISTS

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright CCR 2nd Semiannual Event
Project No: 6122201429.2003.****
Method: Radium-226, Radium-228 and Combined Radium by Methods 9315 and 9320
Laboratory and Lot: TAL PIT SDG: 180-111648-2
Reviewer/Date: J. Hartness 12/16/2020 **Senior Reviewer/Date:** D. Knaub 12/17/2020

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review**	
			OK – Samples anal. @ TAL-St. Louis	
X			**Sample Preservation and cooler temperature met (HNO_3 to pH<2)**	
			OK, 2.0, 2.4, 2.7, and 3.6° C.	
X			**Holding times met (180 days)**	
			Collected: 09/29/20-10/01/20	
		Ra-226:	prep: 10/06/20, 10/13/20;	
			anal: 10/28/20, 11/04/20, 11/08/20	
		Ra 228:	prep: 10/06/20, 10/13/20;	
			anal: 10/15/20, 10/30/20	
		Ra, combined:	anal: 11/02/20, 11/18/20	
	X		**QC Blanks Review (net blank value <MDC)**	
			Ra-226	
			p. 23 MB 160-48743/24-A Ra-226=0.1797 pCi/L	
			(assoc. samples: EB-02, ARGWA-19, ARGWA-20, ARGWC-22, ARAMW-1)	
			Assoc. results < NAD 2σ (2.58) flagged "U*"	
			Reason code: BL *ARGWA-19, ARGWA-20, ARGWC-22*	
			p. 23 MB 160-485335/22-A Ra-226 < MDC	
			Ra-228	
			p. 23 MB 160-484744/24-A Ra-228 < MDC	
			p. 24 MB 160-485338/22-A Ra-228 < MDC	
			Equipment Blanks: (non-dedicated equip.)	
			EB-02 - All < MDC	
			Field Blanks: (DI water)	
			FB-02 - Ra-228 = 0.747 pCi/L	
			Assoc. results < NAD 2σ (2.58) flagged "U*"	
			Reason code: BF ARGWC-23	

YES	NO	NA	COMMENTS
X			**Laboratory Control Sample (LCS) recovery within lab limits (75-125%; RPD = RER (2σ <3)** Ra-226 p. 23 LCS 160-484743/1-A Ra-226 = 96% p. 23 LCS 160-485335/1-A Ra-226 = 85% Ra-228 p. 24 LCS/160-484744/1-A, Ra-228 = 100% p. 24 LCS 160-485338/1-A Ra-228 = 110%
X			**Lab Duplicate - Field Duplicate precision goals met (lab limits); lab dup every 10 samples (RPD = RER (2σ) <3)** *Field Duplicate: ARGWC-23 = DUP-02-100120 RER* *Ra-226 0.228 <0.132 diff = 0.096-Ok, <RL(1.0)* *Ra-226 0.521 <0.485 diff = 0.036-Ok, <RL(1.0)* *Ra, total 0.749 <0.485 diff = 0.264-Ok, <RL(5.0)*
		X	**Matrix Spike recoveries and RPDs within limits (if applicable)** NA
	X		**Carrier/Tracer Yield Recovery Ra-226 (Carrier: Ba); Ra-228 (Carrier Ba, Tracer: Y) (40-110%)** EB-02 (Ra-228) Yttrium = 126% ***Flag positives "J"*** *No flag, Ra-228 ND in sample*
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)**

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ANALYTICAL REPORT

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

Laboratory Job ID: 180-113158-1
Client Project/Site: CCR - Arkwright Surfacewater

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
11/18/2020 9:17:33 AM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Job ID: 180-113158-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-113158-1

Comments
No additional comments.

Receipt
The samples were received on 11/4/2020 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

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 - Arkwright Surfacewater

Job ID: 180-113158-1

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.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-113158-1
Project/Site: CCR - Arkwright Surfacewater

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-113158-1	BC-0.8	Water	11/03/20 12:38	11/04/20 09:00	
180-113158-2	BC-0.5.5	Water	11/03/20 11:24	11/04/20 09:00	
180-113158-3	BC-BR	Water	11/03/20 11:49	11/04/20 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9040C	pH	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:

EPA = US Environmental Protection Agency

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 - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-0.8

Date Collected: 11/03/20 12:38
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-1

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			336722	11/11/20 18:17	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	336278	11/07/20 08:11	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			337118	11/13/20 20:09	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			336783	11/11/20 23:38	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336451	11/09/20 17:15	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			336113	11/05/20 18:39	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.5.5

Date Collected: 11/03/20 11:24
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-2

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			336638	11/11/20 13:41	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336278	11/07/20 08:11	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			337118	11/13/20 20:18	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			336799	11/11/20 19:53	PMH	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336451	11/09/20 17:15	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			336113	11/05/20 18:45	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-BR

Date Collected: 11/03/20 11:49
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-3

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			336638	11/11/20 13:58	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336278	11/07/20 08:11	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			337118	11/13/20 20:21	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			336799	11/11/20 22:00	PMH	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336451	11/09/20 17:15	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			336113	11/05/20 18:50	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

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

KHM = Kyle Mucroski

Batch Type: Analysis

AVS = Abbey Smith
GRB = Gabriel Berghe
MJH = Matthew Hartman
PMH = Paloma Hoelzle
RSK = Robert Kurtz
SAT = Stephen Tallam

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-0.8

Date Collected: 11/03/20 12:38
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.5		1.0	0.32	mg/L			11/11/20 18:17	1
Fluoride	0.066	J	0.10	0.044	mg/L			11/11/20 18:17	1
Sulfate	3.8		1.0	0.38	mg/L			11/11/20 18:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00042	J	0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 20:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/11/20 23:38	1
Total Dissolved Solids	84		10	10	mg/L			11/09/20 17:15	1
Total Alkalinity as CaCO3 to pH 4.5	55		5.0	5.0	mg/L			11/05/20 18:39	1
Bicarbonate Alkalinity as CaCO3	55		5.0	5.0	mg/L			11/05/20 18:39	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-0.5.5

Date Collected: 11/03/20 11:24
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.2		1.0	0.32	mg/L			11/11/20 13:41	1
Fluoride	0.050	J	0.10	0.044	mg/L			11/11/20 13:41	1
Sulfate	6.1		1.0	0.38	mg/L			11/11/20 13:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00047	J	0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 20:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			11/11/20 19:53	1
Total Dissolved Solids	88		10	10	mg/L			11/09/20 17:15	1
Total Alkalinity as CaCO3 to pH 4.5	55		5.0	5.0	mg/L			11/05/20 18:45	1
Bicarbonate Alkalinity as CaCO3	55		5.0	5.0	mg/L			11/05/20 18:45	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-BR

Date Collected: 11/03/20 11:49
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.3		1.0	0.32	mg/L			11/11/20 13:58	1
Fluoride	<0.044		0.10	0.044	mg/L			11/11/20 13:58	1
Sulfate	6.2		1.0	0.38	mg/L			11/11/20 13:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00048	J	0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			11/11/20 22:00	1
Total Dissolved Solids	85		10	10	mg/L			11/09/20 17:15	1
Total Alkalinity as CaCO3 to pH 4.5	55		5.0	5.0	mg/L			11/05/20 18:50	1
Bicarbonate Alkalinity as CaCO3	55		5.0	5.0	mg/L			11/05/20 18:50	1

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

Lab Sample ID: MB 180-336638/6
Matrix: Water
Analysis Batch: 336638

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/11/20 05:54	1
Fluoride	<0.044		0.10	0.044	mg/L			11/11/20 05:54	1
Sulfate	<0.38		1.0	0.38	mg/L			11/11/20 05:54	1

Lab Sample ID: LCS 180-336638/5
Matrix: Water
Analysis Batch: 336638

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.9		mg/L		102	90 - 110
Fluoride	2.50	2.49		mg/L		99	90 - 110
Sulfate	50.0	50.0		mg/L		100	90 - 110

Lab Sample ID: MB 180-336722/6
Matrix: Water
Analysis Batch: 336722

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/11/20 12:23	1
Fluoride	<0.044		0.10	0.044	mg/L			11/11/20 12:23	1
Sulfate	<0.38		1.0	0.38	mg/L			11/11/20 12:23	1

Lab Sample ID: LCS 180-336722/5
Matrix: Water
Analysis Batch: 336722

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.8		mg/L		104	90 - 110
Fluoride	2.50	2.52		mg/L		101	90 - 110
Sulfate	50.0	51.1		mg/L		102	90 - 110

Lab Sample ID: 180-113158-1 MS
Matrix: Water
Analysis Batch: 336722

Client Sample ID: BC-0.8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	9.5		50.0	60.1		mg/L		101	90 - 110
Fluoride	0.066	J	2.50	2.52		mg/L		98	90 - 110
Sulfate	3.8		50.0	54.5		mg/L		101	90 - 110

Lab Sample ID: 180-113158-1 MSD
Matrix: Water
Analysis Batch: 336722

Client Sample ID: BC-0.8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9.5		50.0	61.0		mg/L		103	90 - 110	2	20
Fluoride	0.066	J	2.50	2.60		mg/L		101	90 - 110	3	20
Sulfate	3.8		50.0	55.3		mg/L		103	90 - 110	1	20

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

Lab Sample ID: MB 180-336278/1-A
Matrix: Water
Analysis Batch: 337118

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 336278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.00013		0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 19:41	1

Lab Sample ID: LCS 180-336278/2-A
Matrix: Water
Analysis Batch: 337118

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 336278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.500	0.504		mg/L		101	80 - 120
Calcium	25.0	28.6		mg/L		114	80 - 120
Boron	1.25	1.21		mg/L		97	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-336783/1
Matrix: Water
Analysis Batch: 336783

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-336799/29
Matrix: Water
Analysis Batch: 336799

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-336799/3
Matrix: Water
Analysis Batch: 336799

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-113158-3 DU
Matrix: Water
Analysis Batch: 336799

Client Sample ID: BC-BR
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.5		SU		0.5	2

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

Lab Sample ID: MB 180-336451/2
Matrix: Water
Analysis Batch: 336451

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		10	10	mg/L			11/09/20 17:15	1

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

Lab Sample ID: LCS 180-336451/1
Matrix: Water
Analysis Batch: 336451

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			714	700		mg/L		98	80 - 120		

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-336113/53
Matrix: Water
Analysis Batch: 336113

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	<5.0		5.0	5.0	mg/L			11/05/20 16:59	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			11/05/20 16:59	1

Lab Sample ID: LCS 180-336113/52
Matrix: Water
Analysis Batch: 336113

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	236		mg/L		95	90 - 110		

HPLC/IC

Analysis Batch: 336638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-2	BC-0.5.5	Total/NA	Water	EPA 300.0 R2.1	
180-113158-3	BC-BR	Total/NA	Water	EPA 300.0 R2.1	
MB 180-336638/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-336638/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 336722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-336722/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-336722/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-113158-1 MS	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	
180-113158-1 MSD	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 336278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total Recoverable	Water	3005A	
180-113158-2	BC-0.5.5	Total Recoverable	Water	3005A	
180-113158-3	BC-BR	Total Recoverable	Water	3005A	
MB 180-336278/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-336278/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 337118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total Recoverable	Water	EPA 6020B	336278
180-113158-2	BC-0.5.5	Total Recoverable	Water	EPA 6020B	336278
180-113158-3	BC-BR	Total Recoverable	Water	EPA 6020B	336278
MB 180-336278/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	336278
LCS 180-336278/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	336278

General Chemistry

Analysis Batch: 336113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	SM2320 B	
180-113158-2	BC-0.5.5	Total/NA	Water	SM2320 B	
180-113158-3	BC-BR	Total/NA	Water	SM2320 B	
MB 180-336113/53	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-336113/52	Lab Control Sample	Total/NA	Water	SM2320 B	

Analysis Batch: 336451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	SM 2540C	
180-113158-2	BC-0.5.5	Total/NA	Water	SM 2540C	
180-113158-3	BC-BR	Total/NA	Water	SM 2540C	
MB 180-336451/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336451/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 336783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	EPA 9040C	

General Chemistry (Continued)

Analysis Batch: 336783 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-336783/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 336799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-2	BC-0.5.5	Total/NA	Water	EPA 9040C	
180-113158-3	BC-BR	Total/NA	Water	EPA 9040C	
LCS 180-336799/29	Lab Control Sample	Total/NA	Water	EPA 9040C	
LCS 180-336799/3	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-113158-3 DU	BC-BR	Total/NA	Water	EPA 9040C	

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

Chain of Custody Record

Client Information	Sampler: RAGO / JOHNSON	Lab PM: Lanier, Jerry A GAIL LANG	Carrier Tracking No(s):	COC No: 180-65384-13119.1
Client Contact: Warren Johnson	Phone: 678-485-5298	E-Mail: GAIL.LANG Jerry.Lanier@Eurofinset.com		Page: Page 1 of 1
Company: ARCADIS U.S., Inc.				Job #:
Address: 2839 Paces Ferry Road SE Suite 900	Due Date Requested:			
City: Atlanta	TAT Requested (days): 7 DAY			
State, Zip: GA, 30339	PO #: ~~Purchase Order Requested~~ 3CS10352606			
Phone: 404-952-1615(Tel)	WO #:			
Email: warren.johnson@arcadis.com	Project #: 18023144			
Project Name: Georgia Power CCR	SSOW#:			
Site: PLANT ARKWRIGHT				

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	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)	6020B - Metals COBALT ONLY	2320B, 9040C, 9056A_ORGFM_28D	2540C_Calcd - TDS	6020B - Cobalt, Molybdenum, Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N			
BC-0.8	11/3/20	1238	G	Water			X	X	X	X		32°55'22"N / -83°42'20"W
BC-0.5.5	11/3/20	1124	G	Water			X	X	X	X		32°55'14"N / -83°42'06"W
BC-BR	11/3/20	1149	G	Water			X	X	X			32°55'12"N / -83°41'59"W
				Water								
				Water								
				Water								

180-113158 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)

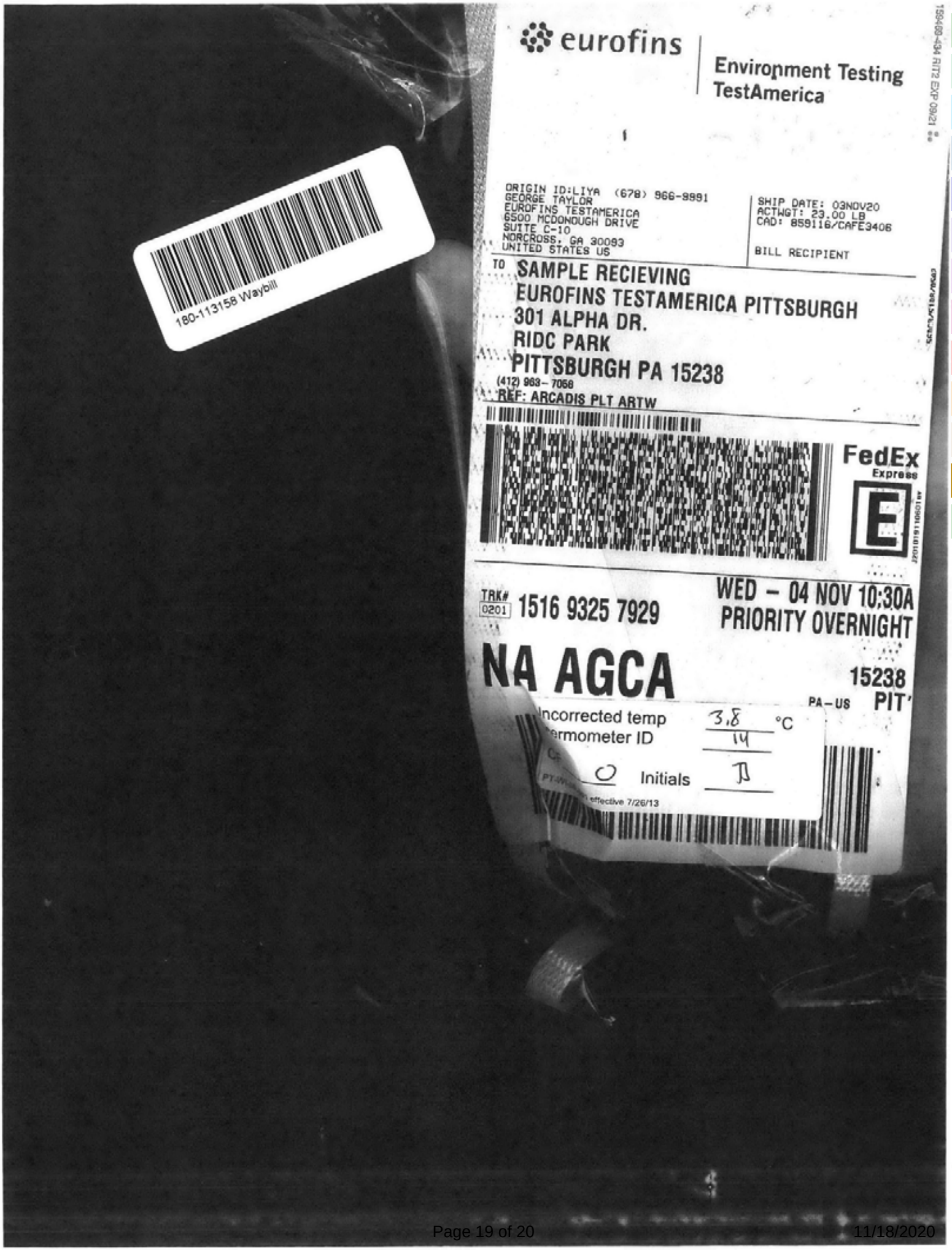
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		11/03/2020 17:40	Arcadis		11/3/20 17:40	ETA
2	11/3/20	18:00	ETA		11/4/20 900	ETA
3						

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

Ver: 01/16/2019


180-113158 Waybill
eurofins
Environment Testing
TestAmerica
ORIGIN ID:LIYA (678) 966-9991
GEORGE TAYLOR
EUROFINS TESTAMERICA
6500 MCDONOUGH DRIVE
SUITE C-10
NORCROSS, GA 30093
UNITED STATES US
SHIP DATE: 03NOV20
ACTWGT: 23.00 LB
CAD: 859116/CAFE3406
BILL RECIPIENT
TO SAMPLE RECIEVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DR.
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: ARCADIS PLT ARTW
FedEx
Express
TRK# 0201 1516 9325 7929
WED - 04 NOV 10:30A
PRIORITY OVERNIGHT
NA AGCA
15238
PA-US
PIT
Uncorrected temp 3.8 °C
Thermometer ID 14
Initials
effective 7/26/13

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-113158-1

Login Number: 113158
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	

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-114167-1
Client Project/Site: CCR - Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
12/15/2020 6:57:15 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

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

Job ID: 180-114167-1

Job ID: 180-114167-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-114167-1

Comments
No additional comments.

Receipt
The sample was received on 12/1/2020 10:00 AM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1º C.

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.

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 Arkwright

Job ID: 180-114167-1

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
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-114167-1

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

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

Job ID: 180-114167-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-114167-1	ARAMW-7	Water	11/30/20 15:30	12/01/20 10:00	

Method Summary

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

Job ID: 180-114167-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

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 Arkwright

Job ID: 180-114167-1

Client Sample ID: ARAMW-7

Date Collected: 11/30/20 15:30
Date Received: 12/01/20 10:00

Lab Sample ID: 180-114167-1

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			338905	12/01/20 13:19	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total/NA	Analysis	EPA 300.0 R2.1		10			338905	12/01/20 13:40	SAT	TAL PIT
	Instrument ID: INTEGRION									
Dissolved	Prep	3005A			50 mL	50 mL	339223	12/02/20 14:15	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			339557	12/04/20 16:44	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	339223	12/02/20 14:15	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			339557	12/04/20 16:40	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	9030B			50 mL	50 mL	339220	12/02/20 13:30	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			339592	12/02/20 15:30	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339384	12/03/20 17:39	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			339186	12/02/20 10:39	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			340395	11/30/20 15:30	AGJ	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

CMR = Carl Reagle
TJO = Tyler Oliver

Batch Type: Analysis

AGJ = Andy Johnson
AVS = Abbey Smith
CMR = Carl Reagle
GRB = Gabriel Berghe
RSK = Robert Kurtz
SAT = Stephen Tallam

Client Sample Results

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

Job ID: 180-114167-1

Client Sample ID: ARAMW-7

Date Collected: 11/30/20 15:30
Date Received: 12/01/20 10:00

Lab Sample ID: 180-114167-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.3		1.0	0.32	mg/L			12/01/20 13:19	1
Fluoride	0.044	J	0.10	0.044	mg/L			12/01/20 13:19	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/01/20 13:19	1
Nitrite as N	<0.029		0.050	0.029	mg/L			12/01/20 13:19	1
Sulfate	990		10	3.8	mg/L			12/01/20 13:40	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.1		0.080	0.039	mg/L		12/02/20 14:15	12/04/20 16:40	1
Calcium	260		0.50	0.13	mg/L		12/02/20 14:15	12/04/20 16:40	1
Cobalt	0.028		0.0025	0.00013	mg/L		12/02/20 14:15	12/04/20 16:40	1
Lithium	0.061		0.0050	0.0034	mg/L		12/02/20 14:15	12/04/20 16:40	1
Magnesium	74		0.50	0.083	mg/L		12/02/20 14:15	12/04/20 16:40	1
Molybdenum	0.0012	J	0.015	0.00061	mg/L		12/02/20 14:15	12/04/20 16:40	1
Potassium	13		0.50	0.16	mg/L		12/02/20 14:15	12/04/20 16:40	1
Sodium	27	B	0.50	0.35	mg/L		12/02/20 14:15	12/04/20 16:40	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	17	B	0.050	0.020	mg/L		12/02/20 14:15	12/04/20 16:44	1
Manganese	11		0.0050	0.00087	mg/L		12/02/20 14:15	12/04/20 16:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/02/20 13:30	12/02/20 15:30	1
Total Dissolved Solids	1600		10	10	mg/L			12/03/20 17:39	1
Total Alkalinity as CaCO3 to pH 4.5	120		5.0	5.0	mg/L			12/02/20 10:39	1
Bicarbonate Alkalinity as CaCO3	120		5.0	5.0	mg/L			12/02/20 10:39	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/02/20 10:39	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.00				SU			11/30/20 15:30	1

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

Lab Sample ID: MB 180-338905/6
Matrix: Water
Analysis Batch: 338905

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			12/01/20 06:47	1
Fluoride	<0.044		0.10	0.044	mg/L			12/01/20 06:47	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/01/20 06:47	1
Nitrite as N	<0.029		0.050	0.029	mg/L			12/01/20 06:47	1
Sulfate	<0.38		1.0	0.38	mg/L			12/01/20 06:47	1

Lab Sample ID: LCS 180-338905/5
Matrix: Water
Analysis Batch: 338905

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.1		mg/L		102	90 - 110
Fluoride	2.50	2.31		mg/L		92	90 - 110
Nitrate as N	2.50	2.47		mg/L		99	90 - 110
Nitrite as N	2.50	2.71		mg/L		108	90 - 110
Sulfate	50.0	51.2		mg/L		102	90 - 110

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

Lab Sample ID: MB 180-339223/1-A
Matrix: Water
Analysis Batch: 339557

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 339223

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		12/02/20 14:15	12/04/20 12:08	1
Iron	0.0349	J	0.050	0.020	mg/L		12/02/20 14:15	12/04/20 12:08	1
Calcium	<0.13		0.50	0.13	mg/L		12/02/20 14:15	12/04/20 12:08	1
Manganese	<0.00087		0.0050	0.00087	mg/L		12/02/20 14:15	12/04/20 12:08	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		12/02/20 14:15	12/04/20 12:08	1
Lithium	<0.0034		0.0050	0.0034	mg/L		12/02/20 14:15	12/04/20 12:08	1
Magnesium	<0.083		0.50	0.083	mg/L		12/02/20 14:15	12/04/20 12:08	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		12/02/20 14:15	12/04/20 12:08	1
Potassium	<0.16		0.50	0.16	mg/L		12/02/20 14:15	12/04/20 12:08	1
Sodium	0.449	J	0.50	0.35	mg/L		12/02/20 14:15	12/04/20 12:08	1

Lab Sample ID: LCS 180-339223/2-A
Matrix: Water
Analysis Batch: 339557

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 339223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.04		mg/L		83	80 - 120
Iron	5.00	5.13		mg/L		103	80 - 120
Calcium	25.0	26.9		mg/L		108	80 - 120
Manganese	0.500	0.482		mg/L		96	80 - 120
Cobalt	0.500	0.498		mg/L		100	80 - 120
Lithium	0.500	0.489		mg/L		98	80 - 120
Magnesium	25.0	25.4		mg/L		102	80 - 120
Molybdenum	0.500	0.501		mg/L		100	80 - 120
Potassium	25.0	25.4		mg/L		101	80 - 120

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

Lab Sample ID: LCS 180-339223/2-A
Matrix: Water
Analysis Batch: 339557

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 339223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	25.0	24.9		mg/L		99	80 - 120

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-339220/1-A
Matrix: Water
Analysis Batch: 339592

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339220

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/02/20 13:30	12/02/20 15:21	1

Lab Sample ID: LCS 180-339220/2-A
Matrix: Water
Analysis Batch: 339592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339220

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	14.8	13.0		mg/L		88	85 - 115

Lab Sample ID: 180-114167-1 MS
Matrix: Water
Analysis Batch: 339592

Client Sample ID: ARAMW-7
Prep Type: Total/NA
Prep Batch: 339220

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	<2.1		14.8	11.1		mg/L		75	75 - 125

Lab Sample ID: 180-114167-1 MSD
Matrix: Water
Analysis Batch: 339592

Client Sample ID: ARAMW-7
Prep Type: Total/NA
Prep Batch: 339220

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	<2.1		14.8	11.5		mg/L		78	75 - 125	3	20

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

Lab Sample ID: MB 180-339384/2
Matrix: Water
Analysis Batch: 339384

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		10	10	mg/L			12/03/20 17:39	1

Lab Sample ID: LCS 180-339384/1
Matrix: Water
Analysis Batch: 339384

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	624	600		mg/L		96	80 - 120

QC Sample Results

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

Job ID: 180-114167-1

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-339186/5
Matrix: Water
Analysis Batch: 339186

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	<5.0		5.0	5.0	mg/L			12/02/20 08:37	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/02/20 08:37	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/02/20 08:37	1

Lab Sample ID: LCS 180-339186/4
Matrix: Water
Analysis Batch: 339186

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	232		mg/L		93	90 - 110

QC Association Summary

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

Job ID: 180-114167-1

HPLC/IC

Analysis Batch: 338905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	EPA 300.0 R2.1	
180-114167-1	ARAMW-7	Total/NA	Water	EPA 300.0 R2.1	
MB 180-338905/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-338905/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 339223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Dissolved	Water	3005A	
180-114167-1	ARAMW-7	Total Recoverable	Water	3005A	
MB 180-339223/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-339223/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 339557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Dissolved	Water	EPA 6020B	339223
180-114167-1	ARAMW-7	Total Recoverable	Water	EPA 6020B	339223
MB 180-339223/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	339223
LCS 180-339223/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	339223

General Chemistry

Analysis Batch: 339186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	SM2320 B	
MB 180-339186/5	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-339186/4	Lab Control Sample	Total/NA	Water	SM2320 B	

Prep Batch: 339220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	9030B	
MB 180-339220/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-339220/2-A	Lab Control Sample	Total/NA	Water	9030B	
180-114167-1 MS	ARAMW-7	Total/NA	Water	9030B	
180-114167-1 MSD	ARAMW-7	Total/NA	Water	9030B	

Analysis Batch: 339384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	SM 2540C	
MB 180-339384/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-339384/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 339592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	EPA 9034	339220
MB 180-339220/1-A	Method Blank	Total/NA	Water	EPA 9034	339220
LCS 180-339220/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	339220
180-114167-1 MS	ARAMW-7	Total/NA	Water	EPA 9034	339220
180-114167-1 MSD	ARAMW-7	Total/NA	Water	EPA 9034	339220

QC Association Summary

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

Job ID: 180-114167-1

Field Service / Mobile Lab

Analysis Batch: 340395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	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

244- ATLANTA

Client Information	Sampler: Daniel Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested: Standard TAT			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300.0_RGFM_28D - Cl,F,SO4,NO2,NO3	2320B - Alk	2540C - TDS	9034 - Sulfide	6020B - Diss Fe/Mn	6020B - (B,Ca,Co,Li,Na,K	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	N	CB	D	D	X	
ARAMW-7	11/30/20	1530	G	W	Y		X	X	X	X	X	X	6	

180-114167 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
1	Daniel L Howard	11/30/20 / 1745	Wood		12/1/20 1000	EDM
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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-114167-1

Login Number: 114167
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: 180-114253-1
Client Project/Site: CCR - Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
12/15/2020 7:03:37 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

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

Job ID: 180-114253-1

Job ID: 180-114253-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-114253-1

Comments
No additional comments.

Receipt
The sample was received on 12/2/2020 10:30 AM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.1º C.

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.

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 Arkwright

Job ID: 180-114253-1

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.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-114253-1

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

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

Job ID: 180-114253-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-114253-1	ARAMW-8	Water	12/01/20 10:05	12/02/20 10:30	

Method Summary

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

Job ID: 180-114253-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

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 Arkwright

Job ID: 180-114253-1

Client Sample ID: ARAMW-8

Date Collected: 12/01/20 10:05
Date Received: 12/02/20 10:30

Lab Sample ID: 180-114253-1

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			339255	12/03/20 12:34	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		1			339100	12/02/20 23:10	SAT	TAL PIT
	Instrument ID: INTEGRION									
Dissolved	Prep	3005A			50 mL	50 mL	339431	12/04/20 07:38	KHM	TAL PIT
Dissolved	Analysis	EPA 6020B		1			339788	12/05/20 15:51	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	339431	12/04/20 07:38	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			339788	12/05/20 15:47	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	9030B			50 mL	50 mL	339874	12/08/20 12:30	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			340074	12/08/20 14:53	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339351	12/03/20 11:40	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			339624	12/04/20 15:57	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			340575	12/01/20 10:05	AGJ	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

CMR = Carl Reagle
KHM = Kyle Mucroski

Batch Type: Analysis

AGJ = Andy Johnson
AVS = Abbey Smith
CMR = Carl Reagle
GRB = Gabriel Berghe
RSK = Robert Kurtz
SAT = Stephen Tallam

Client Sample Results

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

Job ID: 180-114253-1

Client Sample ID: ARAMW-8

Date Collected: 12/01/20 10:05
Date Received: 12/02/20 10:30

Lab Sample ID: 180-114253-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		1.0	0.32	mg/L			12/02/20 23:10	1
Fluoride	0.14		0.10	0.044	mg/L			12/03/20 12:34	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/02/20 23:10	1
Nitrite as N	0.28		0.050	0.029	mg/L			12/02/20 23:10	1
Sulfate	120		1.0	0.38	mg/L			12/02/20 23:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.40		0.080	0.039	mg/L		12/04/20 07:38	12/05/20 15:47	1
Calcium	81		0.50	0.13	mg/L		12/04/20 07:38	12/05/20 15:47	1
Cobalt	0.0054		0.0025	0.00013	mg/L		12/04/20 07:38	12/05/20 15:47	1
Lithium	0.0044	J	0.0050	0.0034	mg/L		12/04/20 07:38	12/05/20 15:47	1
Magnesium	25		0.50	0.083	mg/L		12/04/20 07:38	12/05/20 15:47	1
Molybdenum	0.056		0.015	0.00061	mg/L		12/04/20 07:38	12/05/20 15:47	1
Potassium	7.0		0.50	0.16	mg/L		12/04/20 07:38	12/05/20 15:47	1
Sodium	22		0.50	0.35	mg/L		12/04/20 07:38	12/05/20 15:47	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.8		0.050	0.020	mg/L		12/04/20 07:38	12/05/20 15:51	1
Manganese	2.9		0.0050	0.00087	mg/L		12/04/20 07:38	12/05/20 15:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/08/20 12:30	12/08/20 14:53	1
Total Dissolved Solids	420		10	10	mg/L			12/03/20 11:40	1
Total Alkalinity as CaCO3 to pH 4.5	220		5.0	5.0	mg/L			12/04/20 15:57	1
Bicarbonate Alkalinity as CaCO3	220		5.0	5.0	mg/L			12/04/20 15:57	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/04/20 15:57	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.05				SU			12/01/20 10:05	1

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

Lab Sample ID: MB 180-339100/36
Matrix: Water
Analysis Batch: 339100

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			12/02/20 19:20	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/02/20 19:20	1
Nitrite as N	<0.029		0.050	0.029	mg/L			12/02/20 19:20	1
Sulfate	<0.38		1.0	0.38	mg/L			12/02/20 19:20	1

Lab Sample ID: LCS 180-339100/35
Matrix: Water
Analysis Batch: 339100

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Nitrate as N	2.50	2.40		mg/L		96	90 - 110
Nitrite as N	2.50	2.65		mg/L		106	90 - 110
Sulfate	50.0	50.1		mg/L		100	90 - 110

Lab Sample ID: MB 180-339255/6
Matrix: Water
Analysis Batch: 339255

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.044		0.10	0.044	mg/L			12/03/20 09:23	1

Lab Sample ID: LCS 180-339255/5
Matrix: Water
Analysis Batch: 339255

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.50	2.41		mg/L		96	90 - 110

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

Lab Sample ID: MB 180-339431/1-A
Matrix: Water
Analysis Batch: 339788

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 339431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		12/04/20 07:38	12/05/20 14:29	1
Iron	<0.020		0.050	0.020	mg/L		12/04/20 07:38	12/05/20 14:29	1
Calcium	<0.13		0.50	0.13	mg/L		12/04/20 07:38	12/05/20 14:29	1
Manganese	<0.00087		0.0050	0.00087	mg/L		12/04/20 07:38	12/05/20 14:29	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		12/04/20 07:38	12/05/20 14:29	1
Lithium	<0.0034		0.0050	0.0034	mg/L		12/04/20 07:38	12/05/20 14:29	1
Magnesium	<0.083		0.50	0.083	mg/L		12/04/20 07:38	12/05/20 14:29	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		12/04/20 07:38	12/05/20 14:29	1
Potassium	<0.16		0.50	0.16	mg/L		12/04/20 07:38	12/05/20 14:29	1
Sodium	<0.35		0.50	0.35	mg/L		12/04/20 07:38	12/05/20 14:29	1

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

Lab Sample ID: LCS 180-339431/2-A
Matrix: Water
Analysis Batch: 339788

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 339431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.15		mg/L		92	80 - 120
Iron	5.00	4.99		mg/L		100	80 - 120
Calcium	25.0	28.9		mg/L		116	80 - 120
Manganese	0.500	0.499		mg/L		100	80 - 120
Cobalt	0.500	0.465		mg/L		93	80 - 120
Lithium	0.500	0.490		mg/L		98	80 - 120
Magnesium	25.0	24.6		mg/L		98	80 - 120
Molybdenum	0.500	0.493		mg/L		99	80 - 120
Potassium	25.0	24.3		mg/L		97	80 - 120
Sodium	25.0	25.3		mg/L		101	80 - 120

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-339874/1-A
Matrix: Water
Analysis Batch: 340074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339874

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/08/20 12:30	12/08/20 14:14	1

Lab Sample ID: LCS 180-339874/2-A
Matrix: Water
Analysis Batch: 340074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339874

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	14.6	12.9		mg/L		88	85 - 115

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

Lab Sample ID: MB 180-339351/2
Matrix: Water
Analysis Batch: 339351

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		10	10	mg/L			12/03/20 11:40	1

Lab Sample ID: LCS 180-339351/1
Matrix: Water
Analysis Batch: 339351

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	624	618		mg/L		99	80 - 120

QC Sample Results

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

Job ID: 180-114253-1

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-339624/29
Matrix: Water
Analysis Batch: 339624

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	<5.0		5.0	5.0	mg/L			12/04/20 14:34	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/04/20 14:34	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/04/20 14:34	1

Lab Sample ID: LCS 180-339624/28
Matrix: Water
Analysis Batch: 339624

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	228		mg/L		91	90 - 110		

QC Association Summary

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

Job ID: 180-114253-1

HPLC/IC

Analysis Batch: 339100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-339100/36	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-339100/35	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 339255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-339255/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-339255/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 339431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Dissolved	Water	3005A	
180-114253-1	ARAMW-8	Total Recoverable	Water	3005A	
MB 180-339431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-339431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 339788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Dissolved	Water	EPA 6020B	339431
180-114253-1	ARAMW-8	Total Recoverable	Water	EPA 6020B	339431
MB 180-339431/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	339431
LCS 180-339431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	339431

General Chemistry

Analysis Batch: 339351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	SM 2540C	
MB 180-339351/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-339351/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 339624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	SM2320 B	
MB 180-339624/29	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-339624/28	Lab Control Sample	Total/NA	Water	SM2320 B	

Prep Batch: 339874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	9030B	
MB 180-339874/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-339874/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 340074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	EPA 9034	339874
MB 180-339874/1-A	Method Blank	Total/NA	Water	EPA 9034	339874
LCS 180-339874/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	339874

QC Association Summary

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

Job ID: 180-114253-1

Field Service / Mobile Lab

Analysis Batch: 340575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-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

244- ATLANTA

Client Information	Sampler: Daniel Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power		Analysis Requested		Job #:

Address: 241 Ralph McGill Blvd SE	Due Date Requested: Standard TAT		
City: Atlanta	TAT Requested (days):		
State, Zip: GA, 30308			
Phone: 404-506-7116(Tel)	PO #:		
Email: SCS Contacts	WO #:		
Project Name: CCR - Plant Arkwright	Project #: 18020201		
Site: Georgia	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)	Metals (B, Ca, Co, Li, Na, K) 6020B	Dissolved metals (Fe/Mn) 6020B	NO2/NO3, Cl, F, SO4 300.0 28D	Alk 2320B	TDS 2540C	Sulfide 9034	Total Number of containers	Special Instructions/Note:
			Preservation Code				D	D	N	N	N	B,C		
ARAMW-8	12/1/20	1005	G	W	Y		X	X	X	X	X	X	5	pH = 7.05

180-114253 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: Daniel Howard	Date/Time: 12/1/20 1720	Company: Wood	Received by:	Date/Time: 12/2/20 1020	Company: Eurofins
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:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-114253-1

Login Number: 114253
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	

Georgia Power Site Sampling Data (GW)

Site Name: Plant Arkwright — AP2 + AP3 — Date: 11/30/20 - 12/1/20

Well ID	Sample Date	Sample Time	Field Blank	Equipment Blank	Field Dup.	Additional Comments
ARAMW-7	11/30/20	1530				
ARAMW-8	12/1/20	1005				
FB-01	12/1/20	1140	FB-01			Field Blank For Ash Ponds 2+3
EB-01	12/1/20	1155		EB-01		Equip Blank of tubing used with peristaltic pump
ARGWA-24	12/1/20	1352				
DUP-1	12/1/20	—			ARGWA-24	Duplicate of ARGWA-24 (DUP-1)

Additional comments: Equip. Blank EB-01 was collected From the HDPE tubing used with the peristaltic pump. Tubing Lot #12759-05. Deionized water used ASTM Type I water meeting ASTM D5196 specification. Field Blank FB-01 was taken using ASTM Type I deionized water meeting ASTM D5196 specification.

Date: 11/30/20
Time: 1240
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: _____
Pine Handset ID: 512733
Battery Voltage %: 85

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes_____ No ✓ Date:_____ Time:_____	
Current Air Temperature °C (meter reading):		10.5
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	750.0
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		9.97
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	90.6
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.1057

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# 19410200	1.413
Temperature (°C)		14.4
Reading before Calibration (mS/cm)		1.434
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9855

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 8/21	7.13
pH **7.0** value after calibration:	17.0	7.02
pH **7.0** mV **(range is -50 to +50 mV)**:		-7.7
pH 10 value before calibration:	Lot 19320102 8/21	9.91
pH 10 value after calibration:	15.9	10.08
pH 10 mV **(range is -130 to -230 mV)**:		-177.4
pH **4.0** value before calibration:	Lot 20010025 8/21	4.35
pH **4.0** value after calibration:	14.7	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		162.5

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 8/21	14.5
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	243
Reading before calibration (mV):		241.6
Reading after calibration (mV):		243.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	19.8
100 NTU Turbidity Standard	Before Cal:	After Cal:	102
800 NTU Turbidity Standard Lot A5155	Before Cal:	After Cal:	805
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.55
_____ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Hach 2100Q ID: S/N 150300039370

Date: 12/1/20
Time: 0535
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: _____
Pine Handset ID: 5/2733
Battery Voltage %: 85

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		23.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.0
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.78
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.5
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0819

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 19410200	1.413
Temperature (°C)		23.2
Reading before Calibration (mS/cm)		1.380
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		1.0239

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 8/21	7.14
pH **7.0** value after calibration:	22.7°C	7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-8.5
pH 10 value before calibration:	Lot 19320102 8/21	10.05
pH 10 value after calibration:	21.9°C	10.04
pH 10 mV **(range is -130 to -230 mV)**:		-182.2
pH **4.0** value before calibration:	Lot 20010025 8/21	4.23
pH **4.0** value after calibration:	22.1°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		165.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 8/21	22.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	233
Reading before calibration (mV):		227.3
Reading after calibration (mV):		233.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	20.1
100 NTU Turbidity Standard	Before Cal:	After Cal:	102
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	798
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.70
____ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Hach 2100 Q ID: S/N 15030C039370

Product Name: Low-Flow System

Date: 2020-11-30 15:32:07

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP 2	Tubing Diameter	.17 in
Site Name	ARAMW-7	Tubing Length	51 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	45.8 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-7	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.3176346 L
Well Total Depth	50.82 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	12.17 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:07:46	900.02	15.27	6.00	1778.79	5.66	12.44	0.21	-43.32
Last 5	15:12:46	1200.02	15.48	6.00	1780.04	5.87	12.44	0.20	-45.57
Last 5	15:17:46	1500.02	15.37	6.00	1763.81	5.03	12.44	0.19	-45.55
Last 5	15:22:47	1801.03	15.41	6.00	1770.99	4.51	12.44	0.18	-47.37
Last 5	15:27:47	2101.03	15.42	6.00	1768.80	4.61	12.44	0.18	-43.75
Variance 0			-0.11	0.00	-16.23			-0.01	0.01
Variance 1			0.04	0.00	7.17			-0.01	-1.82
Variance 2			0.01	0.00	-2.19			-0.00	3.62

Notes

ARAMW-7 sample time 1530.

Grab Samples

Product Name: Low-Flow System

Date: 2020-12-01 10:08:02

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP 2	Tubing Diameter	.17 in
Site Name	ARAMW-8	Tubing Length	49.6 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	44.6 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-8	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.3113858 L
Well Total Depth	49.61 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.31 in
Depth to Water	10.92 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	09:42:36	900.03	11.20	7.00	718.40	3.24	12.30	0.40	-97.29
Last 5	09:47:36	1200.03	11.14	7.03	701.59	3.50	12.49	0.40	-92.28
Last 5	09:52:36	1500.03	11.11	7.04	718.46	3.85	12.65	0.37	-93.05
Last 5	09:57:36	1800.03	11.06	7.04	717.49	3.50	12.83	0.36	-95.66
Last 5	10:02:36	2100.03	11.63	7.05	709.33	3.53	12.96	0.48	-87.72
Variance 0			-0.04	0.01	16.87			-0.03	-0.77
Variance 1			-0.05	0.01	-0.97			-0.01	-2.60
Variance 2			0.57	0.01	-8.16			0.12	7.94

Notes

ARAMW-8 sample time 1005

Grab Samples

Data Evaluation Narrative
Project: Plant Arkwright AP2 Background and Delineation Sampling
Wood Project Number: 6122201429.2003.**
Site: Ash Pond No. 2 Dry Ash Stockpile – Former Plant Arkwright, Georgia
Matrix: Groundwater

Eurofins TestAmerica SDG Nos: 180-114167-1, 180-114253-1

Introduction

A data quality evaluation (DQE) was performed on the laboratory data reported for the Background and Delineation sampling event conducted at Ash Pond No. 2 Dry Ash Stockpile at the former Plant Arkwright, located in Arkwright, Georgia in November and December 2020 for Southern Company Services (SCS). The samples were collected and analyzed per the protocols presented in the *Draft Former Plant Arkwright Field Sampling Plan* (FSP) (SCS, 2016) and in accordance with the monitoring requirements of §§ 257.90 through 257.95 as referenced in the Georgia Environmental Protection Division (EPD) Rules 391-3-4-.10(6)(a)-(c) and 391-3-4-.14. GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D.

The following sections provide summary discussions of the required data qualifications for the analytical methods for samples collected. A Level II DQE validation was performed on the samples analyzed by the fixed-based laboratory within these sample delivery groups (SDGs). A Level II DQE consists of review of the following criteria: sample integrity, holding times, method blanks, laboratory control samples (LCSs), matrix spikes/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), post digestion spikes (PDS), where applicable, laboratory and field duplicate RPDs, field and/or equipment blanks, and reporting limits (RLs). Additionally, the data summary tables generated from the electronic data deliverable (EDD) were compared to the laboratory hardcopy data report to verify that the EDD and laboratory data report agree.

The data were reviewed using the laboratory's precision and accuracy limits, the method requirements, and the SCS Field Sampling Plan (FSP) (SCS, 2016). DQE data qualifications were applied, if necessary, using the procedures in United States Environmental Protection Agency (USEPA) Region IV *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy* (USEPA, 2011) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, 2017), as guidance, and professional judgment using the following qualifiers:

Qualifier	Usable Data
J	The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. *SCS Definition: Value J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce as reliable of a value. Therefore, the value displayed (value J) is qualified by the laboratory as estimated.*
UJ	The analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit (MDL) is approximate and may be inaccurate or imprecise.

Qualifier	Usable Data (continued)
U	Analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. *Note: SCS does not use the "U" flag except when reporting results for radium that are detected below the Minimum Detection Concentration (MDC).*
U*	This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Qualifier	Unusable Data
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control (QC) criteria. The presence or absence of the analyte cannot be confirmed.
UR	The analyte was analyzed for but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

The analytical results for the samples reported in this SDG are usable with the qualifications discussed in this narrative. A summary of the data with associated qualifiers is presented in **Table 1**.

Deliverables

The data package as submitted to Wood Environment & Infrastructure Solutions, Inc. (Wood) is complete to perform a Level II DQE for USEPA Methods SW6020B, EPA 300.0, SM 2320B, SW9034 and SM2540C.

Sample Integrity

The groundwater samples were submitted to Eurofins TestAmerica in Pittsburgh, Pennsylvania (TAL PIT) and analyzed for specific total and/or dissolved metals (including Appendix III and select Appendix IV) by Method SW6020B, anions (chloride, fluoride, nitrate, nitrite, and sulfate) by Method 300.0 R2.1, alkalinity (total, bicarbonate and carbonate as $CaCO_3$) by Method SM 2320B, sulfide by SW9034 and total dissolved solids by SM2540C.

Based on the information provided on the Chain-of-Custody (COC) forms, the field samples arrived at the laboratory intact, within temperature range, and properly preserved. Completed COC documents are included in the data package.

Sample Identification

This SDG contains the following groundwater and/or QC samples:

Sample ID	Sample Date	DQE Level
ARAMW-7	11/30/20	II
ARAMW-8	12/01/20	II

These samples were collected from the newly installed Ash Pond No. 2 monitoring wells listed above on November 30 and December 1, 2020. The field and equipment blanks associated with this event include FB-01-120120 and EB-01-062420 (reported in SDG 180-114251-1).

Metals (SW6020B)

The samples were submitted to TAL PIT for total CCR Appendix III metals, select total Appendix IV metals, and total or dissolved geochemical metals by Methods SW6020B. The CCR Appendix III metals are: boron (B) and calcium (Ca). The geochemical metals are: total magnesium (Mg), potassium (K), and sodium (Na), and dissolved iron (Fe) and manganese (Mn). The select Appendix IV metals are: cobalt (Co), and lithium (Li). Each of the Level II components were within QC limits except for method, field blank contamination.

Holding Times

The sample analyses were performed within the 6-month analysis holding time.

Method Blanks

One of the method blanks in SDG 180-114167-1 contained iron and sodium between the MDL and the RL, and associated results less than 10 times the method blank are considered "not detected" as a possible laboratory artifact.

> *Action: No qualification was necessary because the associated iron and sodium results were greater than 10 times the blank value.*

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

An MS/MSD analysis was not performed on any sample in this SDG.

Post Digestion Spike (PDS)

A PDS analysis was not available for review.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

Field accuracy was measured through the collection of one equipment/rinsate blank and one field blank. Equipment rinsate blanks are collected to monitor the decontamination process on non-dedicated sampling equipment. Field blanks are collected to assess the water used to decontaminate the equipment and the containers into which samples are placed. One field blank (FB-01-120120) and one equipment blank (EB-01-120120) are associated with this sampling event. The field blank sample was reported with detections of boron and thallium at estimated concentrations between the MDL and RL. Results less than 10 times the field blank are considered "not detected" as a possible field artifact. **Reason Code: BF:**

> *Action: The boron result for sample ARAMW-8 was qualified as not detected and flagged "U*". Thallium was not analyzed for the samples in this SDG.*

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of metals by USEPA Method SW6020B. The laboratory RL was elevated where dilutions were required to place the constituent within the calibration range. None of the samples in this SDG required dilution.

Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

Total and Dissolved Metals Comparison

If total and dissolved metals samples were collected, comparison of the total and dissolved results can aid in the representativeness of the total metals value verses the metals that may be associated with suspended solids and metals actually dissolved within the water column. The dissolved metals results should be less than or equal to the total metals concentration for positive results greater than 5 times the RL. *Although dissolved iron and manganese were collected and analyzed, total analyses were not scoped; therefore, no comparison was performed*.

Anions (EPA 300.0 R2.1)

The samples were submitted to TAL PIT for anions (chloride, fluoride, nitrate, nitrite, and sulfate) by Method 300.0 R2.1. Each of the Level II components were within the QC limits.

Holding Times

The sample analyses were performed within the 48-hour and 28 day holding times.

Method Blanks

The method blank associated with the samples analyzed in this SDG contained no reportable detections of anions.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

An MS/MSD analysis was not performed on any sample in this SDG.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The field blanks and equipment blank samples did not contain reportable detections of anions.

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of anions by USEPA Method 300 R2.1. No sample dilutions were required. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

Alkalinity (SM 2320B)

Samples were submitted to TAL PIT for alkalinity (total, carbonate, and bicarbonate) by Method SM 2320B to help determine aquifer characteristics. Each of the Level II components were within laboratory QC limits.

Holding Times

The sample analyses were performed within the 14-day analysis holding time.

Method Blanks

The laboratory method blanks did not contain reportable concentrations of alkalinity.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The field blanks and equipment blank samples did not contain reportable detections of alkalinity.

Reporting Limits

The laboratory RLs met the SCS project RLs for samples submitted for the analysis of alkalinity by Method SM 2230B. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated; however, no alkalinity results were reported between the MDL and RL in this SDG.

Sulfide (SW9034)

Samples were submitted to TAL PIT for sulfide by Method SW9034 to help determine aquifer characteristics. Each of the Level II components were within laboratory QC limits.

Holding Times

The sample analyses were performed within the 7-day analysis holding time.

Method Blanks

The laboratory method blanks did not contain reportable concentrations of sulfide.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The field blanks and equipment blank samples did not contain reportable detections of sulfide.

Reporting Limits

The laboratory RLs were met for samples submitted for the analysis of sulfide by Method SW9034 and no samples required dilutions. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated; however, no sulfide results were reported between the MDL and RL in this SDG.

Overall Site Evaluation and Professional Judgment Flagging Changes

The chemical data included in this SDG was validated in general accordance with the guidelines contained in the project work plan and validation SOPs. No professional judgment was used to modify flags for results reported in samples presented in this SDG.

Completeness

A total of 2 wells in Ash Pond No. 2, along with the required QC samples, were sampled and analyzed during the November and December 2020 event in Ash Pond No. 2 according to the Scope of Work provided for the background and delineation sampling. Of the 2 wells scoped to be sampled, one well was reported in two separate SDGs and were sampled and analyzed as scoped.

Completeness of the field sampling activities were assessed in terms of the actual number and type of sample results received from the field and laboratory, as compared with the planned number and type of sample results. All samples planned were collected which meets a field completeness of 100%.

Analytical completeness of data is a measure of the number of valid project-specific data results obtained in comparison to the total number of data results projected to achieve project DQOs. Valid data are defined as data that meet the project-specific DQOs. No data were qualified as unusable which equals a completeness of 100%, which exceeds the 90 percent goal for field and laboratory data expected for this project.

References

SCS, 2016, Draft Field Sampling Plan – Former Plant Arkwright, Georgia Power Company, Earth Science and Environmental Engineering Technical Services, Southern Company Services, Inc. (SCS), August 17, 2016. Permit modification to include the Appendix III and IV sampling requirements; approval of modified permit and FSP pending.

USEPA, 2011. Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy, Revision 2.0; September 2011.

USEPA, 2017. National Office of Superfund Remediation and Technology Innovation, National Functional Guidelines for Inorganic Superfund Methods Data Review, Revision 0.0; January 2017.

Prepared by/Date: DLH 01/14/21
Checked by/Date: DWK 01/27/21

TABLE 1
SUMMARY OF DATA QUALIFIERS

TABLE 1
SUMMARY OF DATA QUALIFIERS
SAMPLE DELIVERY GROUPS: 180-114167-1 and 180-114253-1
SAMPLING DATES: November 30 - December 1, 2020
Plant Arkwright Ash Pond No. 2 Background and Delineation Sampling

Field Sample ID	Location ID	Type	SDG	Method	Parameter Name	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
ARAMW-7	ARAMW-7	N	180-114167-1	300.0	fluoride	0.044	J	J	--	mg/L
ARAMW-7	ARAMW-7	N	180-114167-1	6020B	molybdenum	0.0012	J	J	--	mg/L
ARAMW-8	ARAMW-8	N	180-114253-1	6020B	boron	0.4		U*	BF	mg/L
ARAMW-8	ARAMW-8	N	180-114253-1	6020B	lithium	0.0044	J	J	--	mg/L

Notes:

Laboratory Qualifiers:

J= Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Reason Codes:

BF = Field blank contamination. The result should be considered "not-detected".

-- = No Reason Code assigned for values detected between the method detection limit (MDL) and the reporting limit (RL);estimated quantitation.

Validation Qualifiers:

J = The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U* = This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

Prepared by/Date: DLH 01/15/21
Checked by/Date: DWK 01/27/21

DQE CHECKLISTS

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Metals by SW6020B
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21
Anal for: B, Ca, Co, Li, Mg, Mo, K, Na, diss. Fe, and diss Mn

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (HNO_3 to pH<2)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (180 days)** Coll: 11/30/20, SDG 180-114167-1 Prep: Total and Diss. metals – 12/02/20 Anal: Total and Diss. metals – 12/04/20 Coll: 12/01/20, SDG 180-114253-1 Prep: Total and Diss. metals – 12/04/20 Anal: Total and Diss. metals – 12/05/20	
	X		**QC Blanks Review** Method Blanks: SDG 180-114167-1 p. 10 MB 180-339223/1-A = Fe – 0.0349 J x 10 = **0.349**, Na – 0.449 J x 10 =**4.49 mg/L** ***Flag results <10x blank "U":*** *No flag, assoc. result >10x* SDG 180-114253-1 p. 10 MB 180-339431/1-A = All ND Field Blanks: SDG: 180-114251-1 FB-01: B= 0.044 J x 10 = **0.44 mg/L**, Tl= 0.00019 J x 10 = **0.0019 mg/L** ***Flag results <10x blank "U": B - ARAMW-8*** *(Tl not anal for in assoc. samples)* Equipment Blank: SDG: 180-114251-1 EB-01 = All ND	
X			**Laboratory Control Sample (LCS) recovery within limits (Metals 80-120%, Hg = 80-120%)** SDG 180-114167-1 p. 10 LCS 180-339223/2-A = All OK SDG 180-114253-1 p. 11 LCS 180-339431/2-A = All OK	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	

Method: Metals by SW6020B (cont)

YES	NO	NA	COMMENTS
		X	**Matrix Spike recoveries and RPDs within limits (75-125%, RPD 20)** No MS/MSDs in this SDG for metals
		X	**Total metals vs dissolved metals within limits (RPD < 20% or diff. < RL)** *Although dissolved iron and manganese were collected and analyzed, total analyses were not scoped; therefore, no total results were available for comparison.*
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Anions (chloride, fluoride, nitrate, nitrite, and sulfate) by E300.0 R2.1
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (NO_2, NO_3 – 48 hrs; Cl, SO_4, F – 28 days)** Coll: 11/30/20 (SDG 180-114167-1) Anal: Cl, F NO_2, NO_3, SO_4: 12/02/20 (SDG 180-114167-1) Coll: 12/01/20 (SDG 180-114253-1) Anal: Cl, NO_2, NO_3, SO_4: 12/01/20 (SDG 180-114253-1) Anal: F: 12/03/20	
X			**QC Blanks Review** Method Blanks: p. 10 MB 180-338905/6 = All ND (SDG 114167-1) p. 10 MB 180-339100/36, All ND = ND, MB 180-339255/6, F =ND Field Blanks: SDG 180-114251-1 FB-01 = ND Equipment Blank: SDG 180-114251-1 EB-01 = ND	
X			**Laboratory Control Sample (LCS) recovery within limits (90-110%)** p. 10 LCS 180-338905/5 = All %rec OK (SDG 180-114167-1) p. 10 LCS 180-339100/5 = All %rec OK, LCS 180-339255/5, F =96% -OK	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
		X	**Matrix Spike recoveries and RPDs within limits (lab %Rec limits, RPD = 20)** No MS/MSDs were analyzed in this SDG	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Total, Bicarbonate and Carbonate Alkalinity by SM 2320B
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (14 days)** Coll: 11/30/20 (SDG 180-114167-1) Anal: 12/02/20 (SDG 180-114167-1) Coll: 12/01/20 (SDG 180-114253-1) Anal: 12/04/20 (SDG 180-114253-1)	
X			**QC Blanks Review** Method Blanks p. 12 MB 180-339186/5 = ND (SDG 180-114167-1) p. 12 MB 180-339624/29 = ND (SDG 180-114253-1) Field Blanks: SDG 180-114251-1 FB-01 = ND Equipment Blank: SDG 180-114251-1 EB-01= ND	
X			**Laboratory Control Sample (LCS) recovery within lab limits (80-120%)** p. 12 LCS 180-339186/4= 93% - OK (SDG 180-114251-1) p. 17 LCS 180-339624/4 = 91% - OK (SDG 180-114253-1)	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
		X	**Matrix Spike recoveries and RPDs within limits (if applicable)** MS/MSD not applicable for alkalinity	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Sulfide by SW9034
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (7 days)** Coll: 11/30/20 (SDG180-114167-1) Prep: 12/02/20 Anal: 12/02/20 Coll: 12/01/20 (SDG180-114253-1) Prep: 12/08/20 Anal: 12/08/20	
X			**QC Blanks Review** Method Blanks p. 17 MB 180-320115/1-A= ND p. 11 MB 180339874/1-A= ND (SDG 180-114253-1) Field Blanks: SDG 180114251-1 FB-01: ND Equipment Blank: SDG 180-114251-1 EB-01: ND	
X			**Laboratory Control Sample (LCS) recovery within lab limits (80-120%)** p. 17 LCS 180-320115/2-A = 89% - OK p. 11 LCS 180-339874/2-A = 88% - OK (SDG 180-114253-1)	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
X			**Matrix Spike recoveries and RPDs within limits (if applicable)** 180-114167-1 MS/MSD =75/78, RPD = 3 – OK (SDG 180-114167-1) No MS/MSDs were analyzed in SDG 180-114253-1	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Total Dissolved Solids (TDS) by SM2540C
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (7 days)** Coll: 11/30/20, SDG 180-114167-1 Anal: 12/03/20 Coll: 12/01/20, SDG 180-114253-1 Anal: 12/03/20	
X			**QC Blanks Review** Method Blanks p. 11 MB 180-339384/2 = ND (SDG 180-114167-1) p. 11 MB 180-339351/2 = ND (SDG 180-114167-1) Field and equipment blank were not analyzed for TDS	
X			**Laboratory Control Sample (LCS) recovery within lab limits (80-120%)** p. 11 LCS 180-339384/1 = 96% - OK (SDG 180-114167-1) p. 11 LCS 180-339351/1 = 99% - OK (SDG 180-114253-1)	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
		X	**Matrix Spike recoveries and RPDs within limits (if applicable)** MS/MSD not applicable to TDS	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

RELATIVE PERCENT DIFFERENCE (RPD) CALCULATIONS

Quality control procedures included calculating the relative percent difference (RPD) between sample and sample duplicate concentrations. This is calculated as:

$$RPD = \frac{Conc\ 1 - Conc\ 2}{(Conc\ 1 + Conc\ 2) / 2}$$

Where:

RPD = Relative Percent Difference (%)

Conc1 = Higher concentration of the sample or field duplicate

Conc2 = Lower concentration of the sample or field duplicate

The RPD calculations are provided in the RPD Calculations table for detected concentrations above the PQL for wells and corresponding duplicates for the August, September/October 2020, and December 2020 sampling events. Other constituents were below the PQL. For an RPD to be representative of the process, the concentrations have to be five times the PQL in accordance with US EPA guidance on inorganic data review, (US EPA August 2014). The RPD values of concentrations five times the PQL ranged within the allowable 20% RPD indicating good sampling precision.

RELATIVE PERCENT DIFFERENCE (RPD) CALCULATIONS

Ash Pond #3			
Parameter	**Concentration 1**	**Concentration 2**	
8/19/2019	**DUP-1**	**ARGWC-10**	**RPD**
Barium	0.034	0.034	0%
Chromium	0.0051	0.0049	4%
Parameter	**Concentration 1**	**Concentration 2**	
9/29/2020	**DUP-1**	**ARGWC-17**	**RPD**
Calcium	13	12	8%
Chloride	3.5	3.4	3%
Sulfate	69	66	4%
TDS	140	140	0%
Barium	0.058	0.056	4%
Cobalt	0.027	0.027	0%

Parameter	Concentration 1	Concentration 2	
12/01/2020	**DUP-1**	**ARGWA-24**	**RPD**
Chloride	12	12	0%
Sulfate	7.3	7.5	3%
Calcium	13	13	0%
Barium	0.037	0.038	3%
Cobalt	0.0055	0.0058	5%
TDS	110	120	9%
Ash Pond #2			
Parameter	**Concentration 1**	**Concentration 2**	
8/20/2020	DUP-2	ARGWC-23	**RPD**
Boron	0.40	0.44	10%
Calcium	68	69	1%
Chloride	3.9	3.9	0%
Fluoride	0.19	0.19	0%
Sulfate	70	69	1%
TDS	310	310	0%
Barium	0.16	0.16	0%
Lithium	0.035	0.036	3%
Molybdenum	0.061	0.061	0%
Parameter	**Concentration 1**	**Concentration 2**	
10/1/2020	DUP-2	ARGWC-23	**RPD**
Boron	0.47	0.49	4%
Calcium	72	73	1%
Chloride	3.8	3.8	0%
Fluoride	0.32	0.32	0%
Sulfate	63	64	2%
TDS	290	290	0%
Barium	0.16	0.17	6%
Cobalt	0.0047	0.0052	10%
Lithium	0.039	0.040	3%
Molybdenum	0.062	0.064	3%

concentrations in mg/L

Prepared by: NJM 12/17/2020

Checked by: RNQ 2/16/2021

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-117154-1
Client Project/Site: CCR - Arkwright Surfacewater

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
2/19/2021 2:59:43 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Job ID: 180-117154-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-117154-1

Comments
No additional comments.

Receipt
The samples were received on 2/12/2021 8:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2º C, 2.3º C and 3.2º C.

Receipt Exceptions
The container label for the 250ML container for the following sample did not match the information listed on the Chain-of-Custody (COC): BC-0.1 (180-117154-9). The container labels list a sample id of BC-0.4, while the COC lists BC-0.1. The id on the COC was used.

There are no sample collection dates or times listed on the labels. BT-1.6 (180-117154-1), BT-1.0 (180-117154-2), BC-0.8 (180-117154-3), BC-0.5.7 (180-117154-4), BC-0.5.6 (180-117154-5), BC-0.5.5 (180-117154-6), BC-BR (180-117154-7), BC-0.3 (180-117154-8) and BC-0.1 (180-117154-9)

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
Job ID: 180-117154-1
Project/Site: CCR - Arkwright Surfacewater

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.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-117154-1
Project/Site: CCR - Arkwright Surfacewater

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	06-27-21
California	State	2891	02-21-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20 *
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-21

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-117154-1	BT-1.6	Water	02/10/21 09:56	02/12/21 08:45	
180-117154-2	BT-1.0	Water	02/10/21 10:37	02/12/21 08:45	
180-117154-3	BC-0.8	Water	02/10/21 11:07	02/12/21 08:45	
180-117154-4	BC-0.5.7	Water	02/10/21 11:56	02/12/21 08:45	
180-117154-5	BC-0.5.6	Water	02/10/21 12:10	02/12/21 08:45	
180-117154-6	BC-0.5.5	Water	02/10/21 12:34	02/12/21 08:45	
180-117154-7	BC-BR	Water	02/10/21 12:56	02/12/21 08:45	
180-117154-8	BC-0.3	Water	02/10/21 15:49	02/12/21 08:45	
180-117154-9	BC-0.1	Water	02/10/21 14:06	02/12/21 08:45	

Method Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9040C	pH	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:

EPA = US Environmental Protection Agency

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 - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BT-1.6

Date Collected: 02/10/21 09:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-1

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	1 mL	1.0 mL	346485	02/13/21 16:27	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:39	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:31	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 20:48	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BT-1.0

Date Collected: 02/10/21 10:37
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-2

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	1 mL	1.0 mL	346485	02/13/21 17:29	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:50	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:33	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 20:56	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.8

Date Collected: 02/10/21 11:07
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-3

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	1 mL	1.0 mL	346485	02/13/21 17:50	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:54	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:34	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:05	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.7

Date Collected: 02/10/21 11:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-4

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	1 mL	1.0 mL	346485	02/13/21 18:11	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:57	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:35	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:13	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.5.6

Date Collected: 02/10/21 12:10
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-5

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	1 mL	1.0 mL	346485	02/13/21 18:32	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:01	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:36	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:22	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.5.5

Date Collected: 02/10/21 12:34
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-6

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	346485	02/13/21 18:53	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:05	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:37	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346849	02/17/21 13:17	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:31	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-BR

Date Collected: 02/10/21 12:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-7

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	346485	02/13/21 19:14	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:08	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:38	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:39	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.3

Date Collected: 02/10/21 15:49
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-8

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	346485	02/13/21 19:35	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:12	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:39	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 22:35	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.1

Date Collected: 02/10/21 14:06
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-9

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	1 mL	1.0 mL	346485	02/13/21 20:37	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:15	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:40	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 22:52	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

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

TJO = Tyler Oliver

Batch Type: Analysis

GRB = Gabriel Berghe
PMH = Paloma Hoelzle
REI = Rachel Innocenzi
RSK = Robert Kurtz
SAT = Stephen Tallam

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BT-1.6

Date Collected: 02/10/21 09:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.3		1.0	0.71	mg/L			02/13/21 16:27	1
Fluoride	0.050	J	0.10	0.026	mg/L			02/13/21 16:27	1
Sulfate	3.2		1.0	0.76	mg/L			02/13/21 16:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:39	1
Calcium	7.6		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:39	1
Cobalt	0.00028	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:39	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:39	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:39	1
Sodium	5.3		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:39	1
Potassium	1.7		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:39	1
Magnesium	4.7		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.1	HF	0.1	0.1	SU			02/16/21 14:31	1
Total Dissolved Solids	67		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 20:48	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 20:48	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BT-1.0
Date Collected: 02/10/21 10:37
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		1.0	0.71	mg/L			02/13/21 17:29	1
Fluoride	0.051	J	0.10	0.026	mg/L			02/13/21 17:29	1
Sulfate	41		1.0	0.76	mg/L			02/13/21 17:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.089		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:50	1
Calcium	12		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:50	1
Cobalt	0.0013	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:50	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:50	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:50	1
Sodium	6.9		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:50	1
Potassium	1.8		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:50	1
Magnesium	9.3		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.9	HF	0.1	0.1	SU			02/16/21 14:33	1
Total Dissolved Solids	120		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	42		5.0	5.0	mg/L			02/13/21 20:56	1
Bicarbonate Alkalinity as CaCO3	42		5.0	5.0	mg/L			02/13/21 20:56	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.8

Date Collected: 02/10/21 11:07
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.0		1.0	0.71	mg/L			02/13/21 17:50	1
Fluoride	0.050	J	0.10	0.026	mg/L			02/13/21 17:50	1
Sulfate	32		1.0	0.76	mg/L			02/13/21 17:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.27		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:54	1
Calcium	15		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:54	1
Cobalt	0.0019	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:54	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:54	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:54	1
Sodium	9.3		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:54	1
Potassium	1.6		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:54	1
Magnesium	8.0		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.2	HF	0.1	0.1	SU			02/16/21 14:34	1
Total Dissolved Solids	130		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 21:05	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 21:05	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.7
Date Collected: 02/10/21 11:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.5		1.0	0.71	mg/L			02/13/21 18:11	1
Fluoride	0.055	J	0.10	0.026	mg/L			02/13/21 18:11	1
Sulfate	6.4		1.0	0.76	mg/L			02/13/21 18:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.047	J	0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:57	1
Calcium	8.4		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:57	1
Cobalt	0.00056	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:57	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:57	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:57	1
Sodium	8.2		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:57	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:57	1
Magnesium	4.2		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1	0.1	SU			02/16/21 14:35	1
Total Dissolved Solids	85		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	44		5.0	5.0	mg/L			02/13/21 21:13	1
Bicarbonate Alkalinity as CaCO3	44		5.0	5.0	mg/L			02/13/21 21:13	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.6
Date Collected: 02/10/21 12:10
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.6		1.0	0.71	mg/L			02/13/21 18:32	1
Fluoride	0.055	J	0.10	0.026	mg/L			02/13/21 18:32	1
Sulfate	6.7		1.0	0.76	mg/L			02/13/21 18:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:01	1
Calcium	8.7		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:01	1
Cobalt	0.00057	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:01	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:01	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:01	1
Sodium	8.4		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:01	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:01	1
Magnesium	4.3		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			02/16/21 14:36	1
Total Dissolved Solids	96		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 21:22	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 21:22	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.5
Date Collected: 02/10/21 12:34
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		1.0	0.71	mg/L			02/13/21 18:53	1
Fluoride	0.062	J	0.10	0.026	mg/L			02/13/21 18:53	1
Sulfate	6.8		1.0	0.76	mg/L			02/13/21 18:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:05	1
Calcium	8.1		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:05	1
Cobalt	0.00050	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:05	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:05	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:05	1
Sodium	8.1		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:05	1
Potassium	1.8		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:05	1
Magnesium	4.2		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			02/16/21 14:37	1
Total Dissolved Solids	76		10	10	mg/L			02/17/21 13:17	1
Total Alkalinity as CaCO3 to pH 4.5	44		5.0	5.0	mg/L			02/13/21 21:31	1
Bicarbonate Alkalinity as CaCO3	44		5.0	5.0	mg/L			02/13/21 21:31	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-BR
Date Collected: 02/10/21 12:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.6		1.0	0.71	mg/L			02/13/21 19:14	1
Fluoride	0.056	J	0.10	0.026	mg/L			02/13/21 19:14	1
Sulfate	6.7		1.0	0.76	mg/L			02/13/21 19:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:08	1
Calcium	9.0		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:08	1
Cobalt	0.00052	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:08	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:08	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:08	1
Sodium	8.6		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:08	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:08	1
Magnesium	4.4		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			02/16/21 14:38	1
Total Dissolved Solids	88		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 21:39	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 21:39	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.3

Date Collected: 02/10/21 15:49
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.0		1.0	0.71	mg/L			02/13/21 19:35	1
Fluoride	0.051	J	0.10	0.026	mg/L			02/13/21 19:35	1
Sulfate	6.5		1.0	0.76	mg/L			02/13/21 19:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:12	1
Calcium	8.6		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:12	1
Cobalt	0.00050	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:12	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:12	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:12	1
Sodium	8.4		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:12	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:12	1
Magnesium	4.3		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			02/16/21 14:39	1
Total Dissolved Solids	98		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	44		5.0	5.0	mg/L			02/13/21 22:35	1
Bicarbonate Alkalinity as CaCO3	44		5.0	5.0	mg/L			02/13/21 22:35	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.1

Date Collected: 02/10/21 14:06
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		1.0	0.71	mg/L			02/13/21 20:37	1
Fluoride	0.056	J	0.10	0.026	mg/L			02/13/21 20:37	1
Sulfate	6.9		1.0	0.76	mg/L			02/13/21 20:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:15	1
Calcium	8.3		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:15	1
Cobalt	0.00057	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:15	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:15	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:15	1
Sodium	8.2		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:15	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:15	1
Magnesium	4.2		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			02/16/21 14:40	1
Total Dissolved Solids	92		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 22:52	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 22:52	1

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

Lab Sample ID: MB 180-346485/6
Matrix: Water
Analysis Batch: 346485

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			02/13/21 07:55	1
Fluoride	<0.026		0.10	0.026	mg/L			02/13/21 07:55	1
Sulfate	<0.76		1.0	0.76	mg/L			02/13/21 07:55	1

Lab Sample ID: LCS 180-346485/5
Matrix: Water
Analysis Batch: 346485

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.4		mg/L		103	90 - 110
Fluoride	2.50	2.49		mg/L		100	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: 180-117154-1 MS
Matrix: Water
Analysis Batch: 346485

Client Sample ID: BT-1.6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.3		50.0	57.9		mg/L		103	90 - 110
Fluoride	0.050	J	2.50	2.54		mg/L		99	90 - 110
Sulfate	3.2		50.0	54.4		mg/L		102	90 - 110

Lab Sample ID: 180-117154-1 MSD
Matrix: Water
Analysis Batch: 346485

Client Sample ID: BT-1.6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.3		50.0	57.0		mg/L		102	90 - 110	1	20
Fluoride	0.050	J	2.50	2.50		mg/L		98	90 - 110	1	20
Sulfate	3.2		50.0	53.5		mg/L		101	90 - 110	2	20

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

Lab Sample ID: MB 180-346673/1-A
Matrix: Water
Analysis Batch: 346915

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 346673

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 19:52	1
Calcium	<0.13		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 19:52	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 19:52	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 19:52	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 19:52	1
Sodium	<0.35		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 19:52	1
Potassium	<0.16		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 19:52	1
Magnesium	<0.083		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 19:52	1

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

Lab Sample ID: LCS 180-346673/2-A
Matrix: Water
Analysis Batch: 346915

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 346673

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.22		mg/L		98	80 - 120
Calcium	25.0	26.8		mg/L		107	80 - 120
Cobalt	0.500	0.487		mg/L		97	80 - 120
Lithium	0.500	0.489		mg/L		98	80 - 120
Molybdenum	0.500	0.512		mg/L		102	80 - 120
Sodium	25.0	24.9		mg/L		100	80 - 120
Potassium	25.0	25.2		mg/L		101	80 - 120
Magnesium	25.0	26.2		mg/L		105	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-346717/1
Matrix: Water
Analysis Batch: 346717

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-117154-1 DU
Matrix: Water
Analysis Batch: 346717

Client Sample ID: BT-1.6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.1	HF	7.1		SU		0.3	2

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

Lab Sample ID: MB 180-346820/2
Matrix: Water
Analysis Batch: 346820

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		10	10	mg/L			02/17/21 10:34	1

Lab Sample ID: LCS 180-346820/1
Matrix: Water
Analysis Batch: 346820

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	457	420		mg/L		92	80 - 120

Lab Sample ID: MB 180-346849/2
Matrix: Water
Analysis Batch: 346849

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		10	10	mg/L			02/17/21 13:17	1

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

Lab Sample ID: LCS 180-346849/1
Matrix: Water
Analysis Batch: 346849

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			457	438		mg/L		96	80 - 120		

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-346651/52
Matrix: Water
Analysis Batch: 346651

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	<5.0		5.0	5.0	mg/L			02/13/21 18:48	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/13/21 18:48	1

Lab Sample ID: MB 180-346651/76
Matrix: Water
Analysis Batch: 346651

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	<5.0		5.0	5.0	mg/L			02/13/21 22:26	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/13/21 22:26	1

Lab Sample ID: LCS 180-346651/51
Matrix: Water
Analysis Batch: 346651

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	268		mg/L		107	90 - 110		

Lab Sample ID: LCS 180-346651/75
Matrix: Water
Analysis Batch: 346651

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	257		mg/L		103	90 - 110		

Lab Sample ID: 180-117154-8 DU
Matrix: Water
Analysis Batch: 346651

Client Sample ID: BC-0.3
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	44			45.1		mg/L				3	20
Bicarbonate Alkalinity as CaCO3	44			45.1		mg/L				3	20

HPLC/IC

Analysis Batch: 346485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	EPA 300.0 R2.1	
180-117154-2	BT-1.0	Total/NA	Water	EPA 300.0 R2.1	
180-117154-3	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	
180-117154-4	BC-0.5.7	Total/NA	Water	EPA 300.0 R2.1	
180-117154-5	BC-0.5.6	Total/NA	Water	EPA 300.0 R2.1	
180-117154-6	BC-0.5.5	Total/NA	Water	EPA 300.0 R2.1	
180-117154-7	BC-BR	Total/NA	Water	EPA 300.0 R2.1	
180-117154-8	BC-0.3	Total/NA	Water	EPA 300.0 R2.1	
180-117154-9	BC-0.1	Total/NA	Water	EPA 300.0 R2.1	
MB 180-346485/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-346485/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-117154-1 MS	BT-1.6	Total/NA	Water	EPA 300.0 R2.1	
180-117154-1 MSD	BT-1.6	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 346673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total Recoverable	Water	3005A	
180-117154-2	BT-1.0	Total Recoverable	Water	3005A	
180-117154-3	BC-0.8	Total Recoverable	Water	3005A	
180-117154-4	BC-0.5.7	Total Recoverable	Water	3005A	
180-117154-5	BC-0.5.6	Total Recoverable	Water	3005A	
180-117154-6	BC-0.5.5	Total Recoverable	Water	3005A	
180-117154-7	BC-BR	Total Recoverable	Water	3005A	
180-117154-8	BC-0.3	Total Recoverable	Water	3005A	
180-117154-9	BC-0.1	Total Recoverable	Water	3005A	
MB 180-346673/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-346673/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 346915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total Recoverable	Water	EPA 6020B	346673
180-117154-2	BT-1.0	Total Recoverable	Water	EPA 6020B	346673
180-117154-3	BC-0.8	Total Recoverable	Water	EPA 6020B	346673
180-117154-4	BC-0.5.7	Total Recoverable	Water	EPA 6020B	346673
180-117154-5	BC-0.5.6	Total Recoverable	Water	EPA 6020B	346673
180-117154-6	BC-0.5.5	Total Recoverable	Water	EPA 6020B	346673
180-117154-7	BC-BR	Total Recoverable	Water	EPA 6020B	346673
180-117154-8	BC-0.3	Total Recoverable	Water	EPA 6020B	346673
180-117154-9	BC-0.1	Total Recoverable	Water	EPA 6020B	346673
MB 180-346673/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	346673
LCS 180-346673/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	346673

General Chemistry

Analysis Batch: 346651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	SM2320 B	
180-117154-2	BT-1.0	Total/NA	Water	SM2320 B	
180-117154-3	BC-0.8	Total/NA	Water	SM2320 B	
180-117154-4	BC-0.5.7	Total/NA	Water	SM2320 B	

General Chemistry (Continued)

Analysis Batch: 346651 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-5	BC-0.5.6	Total/NA	Water	SM2320 B	
180-117154-6	BC-0.5.5	Total/NA	Water	SM2320 B	
180-117154-7	BC-BR	Total/NA	Water	SM2320 B	
180-117154-8	BC-0.3	Total/NA	Water	SM2320 B	
180-117154-9	BC-0.1	Total/NA	Water	SM2320 B	
MB 180-346651/52	Method Blank	Total/NA	Water	SM2320 B	
MB 180-346651/76	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-346651/51	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-346651/75	Lab Control Sample	Total/NA	Water	SM2320 B	
180-117154-8 DU	BC-0.3	Total/NA	Water	SM2320 B	

Analysis Batch: 346717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	EPA 9040C	
180-117154-2	BT-1.0	Total/NA	Water	EPA 9040C	
180-117154-3	BC-0.8	Total/NA	Water	EPA 9040C	
180-117154-4	BC-0.5.7	Total/NA	Water	EPA 9040C	
180-117154-5	BC-0.5.6	Total/NA	Water	EPA 9040C	
180-117154-6	BC-0.5.5	Total/NA	Water	EPA 9040C	
180-117154-7	BC-BR	Total/NA	Water	EPA 9040C	
180-117154-8	BC-0.3	Total/NA	Water	EPA 9040C	
180-117154-9	BC-0.1	Total/NA	Water	EPA 9040C	
LCS 180-346717/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-117154-1 DU	BT-1.6	Total/NA	Water	EPA 9040C	

Analysis Batch: 346820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	SM 2540C	
180-117154-2	BT-1.0	Total/NA	Water	SM 2540C	
180-117154-3	BC-0.8	Total/NA	Water	SM 2540C	
180-117154-4	BC-0.5.7	Total/NA	Water	SM 2540C	
180-117154-5	BC-0.5.6	Total/NA	Water	SM 2540C	
180-117154-7	BC-BR	Total/NA	Water	SM 2540C	
180-117154-8	BC-0.3	Total/NA	Water	SM 2540C	
180-117154-9	BC-0.1	Total/NA	Water	SM 2540C	
MB 180-346820/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-346820/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 346849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-6	BC-0.5.5	Total/NA	Water	SM 2540C	
MB 180-346849/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-346849/1	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

244- ATLANTA

Eurofins

Client Information	Sampler: Johnson/Rago	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone: 678.485.5298	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power			Analysis Requested	Job #:

Address: 241 Ralph McGill Blvd SE	Due Date Requested: 02/16/2021
City: Atlanta	TAT Requested (days): 3 Day TAT
State, Zip: GA, 30308	
Phone: 404-506-7116(Tel)	PO #: SCS10382606
Email: SCS Contacts Ben Hodges	WO #:
Project Name: CCR - Plant Arkwright Surfacewater	Project #: 18023157
Site: Georgia	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)	CCR App IV (Co, Li,Mo ONLY)	CCR App III*	Major Ions*	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
BT-1.6	02/10/2021	0956	G	W			x	x	x		CCR App III - boron, calcium,
BT-1.0	02/10/2021	1037	G	W			x	x	x		chloride, sulfate, fluoride, pH,
BC-0.8	02/10/2021	1107	G	W			x	x	x		and total dissolved solids
BC-0.5.7	02/10/2021	1156	G	W			x	x	x		Major Ions - Mg, Na, K, total
BC-0.5.6	02/10/2021	1210	G	W			x	x	x		alkalinity, bicarbonate alkalinity
BC-0.5.5	02/10/2021	1234	G	W			x	x	x		
BC-BR	02/10/2021	1256	G	W			x	x	x		
BC-0.3	02/10/2021	1549	G	W			x	x	x		
BC-0.1	02/10/2021	1406	G	W			x	x	x		

* 3 DAY TAT

180-117154 Chain of Custody

Possible Hazard Identification
[X] 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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	2-11-21 10:00	ASCadis		2/11/21 10:00	ETA
Relinquished by	2/11/21 16:00	ETA	Received by	2-12-21 8:45	ETA Pitt
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


RT 97
FZ
16:30
1084
02.12
YA (678) 966-9991
TING AMERICA ATL SC
PARKWAY NW
30071
S US
SHIP DATE: 11FEB21
ACTWGT: 65.40 LB
CAD: 859116/CAFE3406
BILL RECIPIENT
E RECIEVING
INS TESTAMERICA PITTSBURGH
PHA DR.
ARK
BURGH PA 15238
DIS – PLAT – ARTW
FedEx
Express
FRI – 12 FEB 4:30P
STANDARD OVERNIGHT
69328 1084
16 9328 1073
0201
AGCA
15238
PIT
PA-US
Uncorrected temp
Thermometer ID
3.2
14
°C
CF 0
Initials
PT-WI-SR-001 effective 11/8/18
180-117154 Waybill
eurofins
ORIGIN ID:LIYA (678) 966-9991
GEORGE TAYLOR
EUROFINS TESTING AMERICA ATL SC
6215 REGENCY PARKWAY NW
SUITE 900
NORCROSS, GA 30071
UNITED STATES US
SHIP DATE: 11FEB21
ACTWGT: 65.40 LB
CAD: 859116/CAFE3406
BILL RECIPIENT
TO SAMPLE RECIEVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DR.
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: ARCADIS – PLAT – ARTW
FedEx
Express
FRI – 12 FEB 4:30P A
STANDARD OVERNIGHT T
3 of 3
1516 9328 1095
1516 9328 1073
0201
NA AGCA
15238 3
PIT L
PA-US
Uncorrected temp
Thermometer ID
2.3
14
°C
CF 0
Initials
PT-WI-SR-001 effective 11/8/18

2/19/2021

eurofins | Environment Testing

RT 97 1 16:30 A 1073 02.12

FZ

Part # 159469-434 RIT2 EXP 11/21

ORIGIN ID:LIYA (678) 966-9991
GEORGE TAYLOR
EUROFINS TESTING AMERICA ATL SC
6215 REGENCY PARKWAY NW
SUITE 900
NORCROSS, GA 30071
UNITED STATES US

DATE: 11FEB21
ACTWGT: 65.40 LB
CAD: 859116/CAFE3406

BILL RECIPIENT

TO SAMPLE RECIEVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DR.
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: ARCADIS - PLAT - ARTW

FedEx Express

1 of 3

TRK# 0201 1516 9328 1073

FRI - 12 FEB 4:30P
STANDARD OVERNIGHT

MASTER

NA AGCA

15238
PA-US PIT

Uncorrected temp 13 °C
Thermometer ID 14
CF 0 Initials
PT-WI-SR-001 effective 11/8/18

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-117154-1

Login Number: 117154
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.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	

APPENDIX C

STATISTICAL ANALYSES

GROUNDWATER STATS CONSULTING

February 23, 2021

Southern Company Services
Attn: Mr. Joju Abraham
241 Ralph McGill Blvd NE, Bin 10160
Atlanta, Georgia 30308-3374

Re: Plant Arkwright Ash Pond 2/Dry Ash Stockpile
September/October 2020 Statistical Analysis 1st Semi-Annual Sample Event

Dear Mr. Abraham,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the September/October 2020 1st Semi-Annual Groundwater statistical analysis of monitoring data for Georgia Power Company's Plant Arkwright Ash Pond 2/Dry Ash Stockpile. The analysis complies with the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10 and follows the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Semi-annual sampling is conducted for USEPA's CCR Appendix III and IV, parameters in addition to Appendix I parameters in accordance with the Georgia Department of Natural Resources, Environmental Protection Division groundwater monitoring regulations. The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient wells:** ARGWA-19 and ARGWA-20
- **Downgradient wells:** ARGWC-21, ARGWC-22, and ARGWC-23
- **Delineation wells:** ARAMW-1 and ARAMW-2

When a minimum of 4 samples is available, delineation wells are evaluated using confidence intervals for the Appendix IV constituents. Wells ARGWC-22 and ARGWC-23 were installed in late 2019 and are currently in their background data collection period.

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting (GSC).

The CCR program consists of the following constituents:

- **Georgia Appendix I:** arsenic, barium, cadmium, lead, selenium, and silver
- **CCR Appendix III:** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **CCR Appendix IV:** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lithium, lead, mercury, molybdenum, selenium, and thallium

Data for Appendix III constituents were analyzed using prediction limits; data for Appendix I constituents were analyzed using prediction limits and confidence intervals; and data for Appendix IV metals were analyzed using confidence intervals. Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. Summaries of well/constituent pairs with 100% nondetects since 2016 for all constituents follow this letter. Additionally, when Appendix IV constituents are not detected during a scheduled Scan event, no statistical analyses are required during the semi-annual sample event. During the annual Scan event conducted in August 2020, antimony, cadmium, mercury, and thallium were not detected, and therefore, were not required to be sampled during the September/October 2020 event. While no statistical analyses were required, data for these parameters were plotted on the time series graphs and box plots. Antimony, cadmium, mercury, and thallium were sampled during the September/October 2020 sampling event at newer wells (ARGWC-22 and ARGWC-23) because these wells are currently in the background data collection period.

For all constituents, a substitution of the most recent reporting limit is used for nondetect data. For calculating prediction limits, the substitution is performed for individual wells and may differ across wells. This generally gives the most conservative limit in each case and in the time series plots, a single reporting limit substitution is used across all wells for a given parameter since the wells are plotted as a group. In the case of cobalt, due to varying reporting limits in individual wells; a reporting limit of 0.0025 mg/L was substituted across all respective wells, which is consistent with historical reporting limits.

Time series plots for all well/constituent pairs are provided and are particularly useful for screening parameters detected in downgradient wells which require statistical analyses (Figure A). Time series were also used to screen data during this analysis in newer wells ARGWC-22 and ARGWC-23 and no adjustments were required to any of those records. Additionally, a separate section of box plots is included for all constituents at upgradient

and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. A summary of flagged outliers follows this report (Figure C).

Based on the previous screening described below, data at all wells for constituents detected in downgradient wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves are provided to demonstrate that the selected statistical methods for the parameters listed above comply with the USEPA Unified Guidance and the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations. Power curves were based on the following:

Georgia EPD Appendix I Constituents:

- Semi-Annual Sampling
- Interwell Prediction Limits with 1-of-2 resample plan (all parameters)
- # Constituents: 4 (cadmium was not detected during the August 2020 Scan event and selenium was 100% non-detect in downgradient wells)
- # Downgradient wells: 3

CCR Appendix III Constituents:

- Semi-Annual Sampling
- Interwell Prediction Limits with 1-of-2 resample plan (all parameters)
- # Constituents: 7
- # Downgradient wells: 3

The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. Parametric prediction limits (or tolerance limits or confidence intervals, as applicable) are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. While the false positive rate associated with parametric limits is based on an annual 10% (5% per semi-annual event) as recommend by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number

of future comparisons, and verification resample plan. The following approaches are used for handling nondetects (USEPA, 2009).

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated with upgradient well data during each event after careful screening for any new outliers. In some cases, the earlier portion of data are deselected prior to construction of limits to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Summary of Background Screening – Conducted in 2019

Outlier and Trend Testing

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at wells ARGWA-19, ARGWA-20, and ARGWC-21 for Appendix I, Appendix III, and Appendix IV parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. Outliers were flagged in downgradient wells, though there are no intrawell statistical analyses in the current report. This improves the estimate of downgradient confidence intervals and provides for possible future application of intrawell statistics. As noted below, current values that could result in exceedances were not flagged.

A summary of flagged values is included in Figure C. When the most recent values are identified as outliers, those values are not flagged in the database at this that time (except in cases where they would cause background limits to be elevated) as they may represent a possible exceedance in a downgradient well or a possible trend in an upgradient well. If future values (resampling in the case of an exceedance) do not remain at similar concentrations, these values will be flagged as outliers and deselected. Several low values exist in the data sets and appear on the graphs as possible low outliers relative to the laboratory's Practical Quantitation Limit. However, these values are observed trace values (i.e. measurements reported by the laboratory between the Method Detection Limit and the Practical Quantitation Limit) and, therefore, were not flagged as outliers. Due to changing reporting limits, when nondetects are replaced with the most recent reporting limit, previously flagged "J" values (or estimated values) are sometimes flagged as outliers if they are much higher than current reporting limits.

Additionally, when any values are flagged in the database as outliers, they are plotted in a disconnected and lighter symbol on the time series graph. The accompanying data pages display the flagged value in a lighter font as well. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at wells ARGWA-19, ARGWA-20, and ARGWC-21 to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, all available data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses were included with the previous screenings and showed a few statistically significant trends, both increasing and decreasing. No adjustments to

the background period were made because the overall changes were relatively small. Since intrawell tests are not used in this current analysis, the background levels are not affected by trends in downgradient wells. Trends in downgradient wells are monitored, however, for possible application of intrawell methods in the future and because of their effect on confidence intervals.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from upgradient wells are not representative of the current background data population; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The ANOVA identified significant differences among upgradient well data for several constituents. While data were further tested for intrawell eligibility during the screening, interwell methods will be used for all Appendix I and Appendix III constituents in accordance with Georgia EPD requirements.

Statistical Limits Appendix I Metals & Appendix III Parameters – September/October 2020

All Appendix I metals and Appendix III parameters are analyzed using interwell prediction limits. Data were re-assessed for potential outliers during this analysis. For selenium, a value of 0.0043 mg/L was unflagged in well ARGWA-19 for being below the reporting limit of 0.005 mg/L, An updated summary of flagged outliers follows this report (Figure C).

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all historical upgradient well data through October 2020 for Appendix I metals and Appendix III constituents (Figures D & E, respectively). As mentioned above, wells with 100% non-detects did not require statistical analyses. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When a resample confirms the initial exceedance, a statistically significant increase is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result; therefore, no exceedance is noted, and no further action is necessary. If no resample is collected, the original result is considered a confirmed exceedance. Summary tables and graphical results for the Appendix I metals and Appendix III constituents interwell prediction limits follow this letter. The following exceedances were noted for Appendix I and Appendix III well/constituent pairs:

Appendix I:

- Barium: ARGWC-23

Appendix III:

- Boron: ARGWC-21, ARGWC-22, and ARGWC-23
- Calcium: ARGWC-21, ARGWC-22, and ARGWC-23
- Fluoride: ARGWC-23
- pH: ARGWC-23
- Sulfate: ARGWC-21, ARGWC-22, and ARGWC-23
- TDS ARGWC-21, ARGWC-22, and ARGWC-23

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure F). Upgradient well data are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells to identify whether similar patterns exist upgradient of the site. Upgradient trends are an indication of natural variability in groundwater quality unrelated to practices at the site. Both a summary and graphical display of the trend test results follows this letter. Statistically significant trends were identified for the following well/constituent pairs:

Increasing:

- Boron: ARGWA-20 (upgradient) and ARGWC-21
- Calcium: ARGWC-21
- Sulfate: ARGWC-21
- TDS: ARGWC-21

Decreasing:

- Sulfate: ARGWA-19 (upgradient)

Statistical Analysis of Appendix I Metals & Appendix IV Parameters – September/October 2020

For Appendix I metals and Appendix IV parameters, confidence intervals for each downgradient well/constituent were compared against corresponding Ground Water Protection Standards (GWPS). GWPS were developed as described below. Downgradient and delineation well/constituent pairs that have 100% ND or trace values below the reporting limits do not require analysis. Data from all wells for Appendix I and IV parameters are reassessed for outliers during each analysis. No new values were flagged, and a summary of previously flagged outliers follows this report (Figure C).

First, interwell tolerance limits were used to calculate site-specific background limits from all available pooled upgradient well data through October 2020 for Appendix I metals and Appendix IV constituents (Figure G). Parametric tolerance limits are used when data follow a normal or transformed-normal distribution. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under Georgia EPD Rule 391-3-4-.10(6)(a). Georgia EPD has not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above Georgia EPD Rule requirements, GWPS were established for statistical comparison of Appendix I metals and Appendix IV constituents for the September/October 2020 sample event for the state rules (Figure H). To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix I metals and Appendix IV constituents in accordance with the state requirements in each downgradient well and only delineation well with a minimum of 4 samples (Figure I). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. Those confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a). Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level

(SSL) exceedance is identified. For state confidence intervals, exceedances were identified for the following well/constituent pairs:

- Cobalt: ARGWC-22
- Lithium: ARGWC-23
- Molybdenum: ARGWC-23

Note that the summary table indicates the confidence interval exceeded for well ARGWC-21; however, the upper and lower confidence interval limits for silver in well ARGWC-21 match the GWPS and there are no reported detections above the reporting limit at this well. Therefore, this confidence interval is not above the GWPS. Additionally, the lower confidence limit for lithium at well ARAMW-2 is parametric and computes as negative (due to the standard deviation and sample size), but, of course, may be regarded as zero.

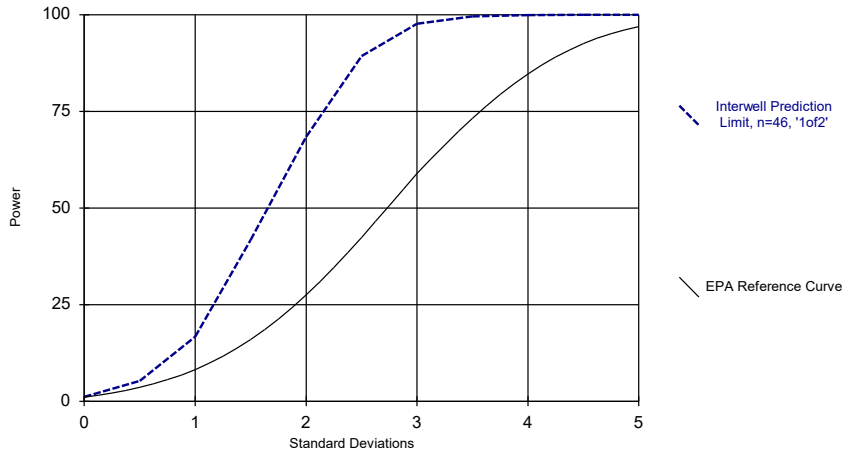
Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Plant Arkwright Ash Pond 2/Dry Ash Stockpile. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Andrew Collins
Project Manager

Kristina Rayner
Groundwater Statistician

Appendix I Power Curve



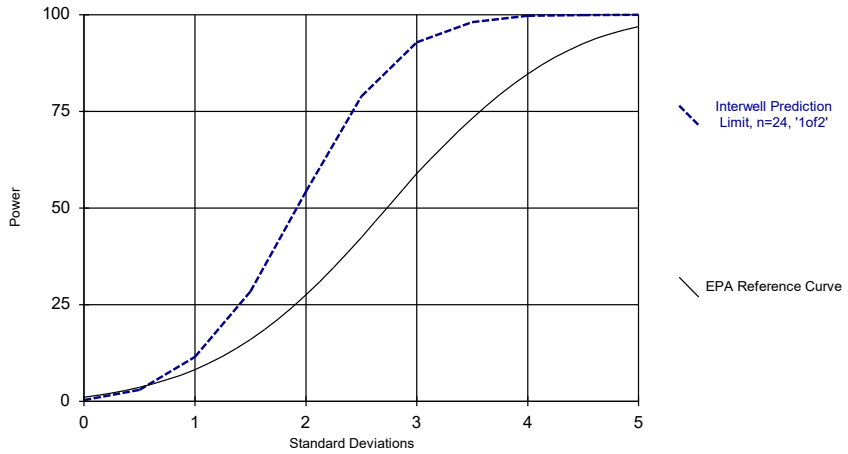
Kappa = 1.568, based on 3 compliance wells and 4 constituents, evaluated semi-annually (this report reflects annual total).

Analysis Run 12/4/2020 12:40 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Appendix III Power Curve



Kappa = 1.845, based on 3 compliance wells and 7 constituents, evaluated semi-annually (this report reflects annual total).

Analysis Run 12/4/2020 12:40 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

100% Non-Detects: Appendix I

Analysis Run 12/2/2020 4:39 PM View: Appendix I
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Antimony (mg/L)
ARGWA-19, ARGWA-20, ARGWC-21, ARGWC-22, ARGWC-23

Beryllium (mg/L)
ARGWA-19, ARGWC-21

Cadmium (mg/L)
ARGWA-20, ARGWC-21, ARGWC-22, ARGWC-23

Chromium (mg/L)
ARGWC-23

Mercury (mg/L)
ARGWC-22, ARGWC-23

Molybdenum (mg/L)
ARGWA-20, ARGWC-21

Selenium (mg/L)
ARGWC-21, ARGWC-22, ARGWC-23

Silver (mg/L)
ARGWC-22, ARGWC-23

Thallium (mg/L)
ARGWA-19, ARGWA-20, ARGWC-21

100% Non-Detects: Appendix I & IV

Analysis Run 12/3/2020 9:14 AM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Antimony (mg/L)
ARAMW-1, ARAMW-2, ARGWC-21, ARGWC-22, ARGWC-23

Arsenic (mg/L)
ARAMW-1

Beryllium (mg/L)
ARAMW-1, ARAMW-2, ARGWC-21

Cadmium (mg/L)
ARAMW-1, ARAMW-2, ARGWC-21, ARGWC-22, ARGWC-23

Chromium (mg/L)
ARAMW-1, ARAMW-2, ARGWC-23

Lead (mg/L)
ARAMW-1, ARAMW-2

Mercury (mg/L)
ARAMW-1, ARAMW-2, ARGWC-22, ARGWC-23

Molybdenum (mg/L)
ARGWC-21

Selenium (mg/L)
ARAMW-1, ARAMW-2, ARGWC-21, ARGWC-22, ARGWC-23

Silver (mg/L)
ARAMW-1, ARAMW-2, ARGWC-22, ARGWC-23

Thallium (mg/L)
ARAMW-1, ARAMW-2, ARGWC-21

Appendix I - Interwell Prediction Limits - Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:31 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Barium (mg/L)	**ARGWC-23**	**0.1**	**n/a**	**10/1/2020**	**0.17**	**Yes**	**56**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000614**	**NP Inter (normality) 1 of 2**

Appendix I - Interwell Prediction Limits - All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:31 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	ARGWC-21	0.0015	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	83.93	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-22	0.0015	n/a	9/30/2020	0.001ND	No	56	n/a	n/a	83.93	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-23	0.0015	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	83.93	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Barium (mg/L)	ARGWC-21	0.1	n/a	10/1/2020	0.051	No	56	n/a	n/a	0	n/a	n/a	0.000614	NP Inter (normality) 1 of 2
Barium (mg/L)	ARGWC-22	0.1	n/a	9/30/2020	0.033	No	56	n/a	n/a	0	n/a	n/a	0.000614	NP Inter (normality) 1 of 2
Barium (mg/L)	**ARGWC-23**	**0.1**	**n/a**	**10/1/2020**	**0.17**	**Yes**	**56**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000614**	**NP Inter (normality) 1 of 2**
Lead (mg/L)	ARGWC-21	0.001	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	87.5	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Lead (mg/L)	ARGWC-22	0.001	n/a	9/30/2020	0.001ND	No	56	n/a	n/a	87.5	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Lead (mg/L)	ARGWC-23	0.001	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	87.5	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Silver (mg/L)	ARGWC-21	0.001	n/a	10/1/2020	0.001ND	No	46	n/a	n/a	89.13	n/a	n/a	0.0009064	NP Inter (NDs) 1 of 2

Appendix III - Interwell Prediction Limits - Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:47 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	ARGWC-21	0.0814	n/a	10/1/2020	0.9	Yes	26	0.04196	0.0216	30.77	Kaplan-Meier	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	ARGWC-22	0.0814	n/a	9/30/2020	2.9	Yes	26	0.04196	0.0216	30.77	Kaplan-Meier	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	ARGWC-23	0.0814	n/a	10/1/2020	0.49	Yes	26	0.04196	0.0216	30.77	Kaplan-Meier	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	ARGWC-21	14.75	n/a	10/1/2020	79	Yes	26	10.98	2.064	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	ARGWC-22	14.75	n/a	9/30/2020	200	Yes	26	10.98	2.064	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	ARGWC-23	14.75	n/a	10/1/2020	73	Yes	26	10.98	2.064	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	ARGWC-23	0.14	n/a	10/1/2020	0.32	Yes	30	n/a	n/a	56.67	n/a	n/a	0.00197	NP Inter (NDs) 1 of 2
pH (SU)	ARGWC-23	6.099	5.418	10/1/2020	6.38	Yes	29	5.759	0.1888	0	None	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	ARGWC-21	21	n/a	10/1/2020	210	Yes	51	n/a	n/a	0	n/a	n/a	0.000725	NP Inter (normality) 1 of 2
Sulfate (mg/L)	ARGWC-22	21	n/a	9/30/2020	650	Yes	51	n/a	n/a	0	n/a	n/a	0.000725	NP Inter (normality) 1 of 2
Sulfate (mg/L)	ARGWC-23	21	n/a	10/1/2020	64	Yes	51	n/a	n/a	0	n/a	n/a	0.000725	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-21	152.3	n/a	10/1/2020	500	Yes	24	110.2	22.86	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-22	152.3	n/a	9/30/2020	1200	Yes	24	110.2	22.86	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-23	152.3	n/a	10/1/2020	290	Yes	24	110.2	22.86	0	None	No	0.002505	Param Inter 1 of 2

Appendix III - Interwell Prediction Limits - All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:47 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	**ARGWC-21**	**0.0814**	**n/a**	**10/1/2020**	**0.9**	**Yes**	**26**	**0.04196**	**0.0216**	**30.77**	**Kaplan-Meier**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**ARGWC-22**	**0.0814**	**n/a**	**9/30/2020**	**2.9**	**Yes**	**26**	**0.04196**	**0.0216**	**30.77**	**Kaplan-Meier**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**ARGWC-23**	**0.0814**	**n/a**	**10/1/2020**	**0.49**	**Yes**	**26**	**0.04196**	**0.0216**	**30.77**	**Kaplan-Meier**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**ARGWC-21**	**14.75**	**n/a**	**10/1/2020**	**79**	**Yes**	**26**	**10.98**	**2.064**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**ARGWC-22**	**14.75**	**n/a**	**9/30/2020**	**200**	**Yes**	**26**	**10.98**	**2.064**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**ARGWC-23**	**14.75**	**n/a**	**10/1/2020**	**73**	**Yes**	**26**	**10.98**	**2.064**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	ARGWC-21	16.2	n/a	10/1/2020	4.3	No	52	n/a	n/a	0	n/a	n/a	0.0007028	NP Inter (normality) 1 of 2
Chloride (mg/L)	ARGWC-22	16.2	n/a	9/30/2020	8	No	52	n/a	n/a	0	n/a	n/a	0.0007028	NP Inter (normality) 1 of 2
Chloride (mg/L)	ARGWC-23	16.2	n/a	10/1/2020	3.8	No	52	n/a	n/a	0	n/a	n/a	0.0007028	NP Inter (normality) 1 of 2
Fluoride (mg/L)	ARGWC-21	0.14	n/a	10/1/2020	0.098J	No	30	n/a	n/a	56.67	n/a	n/a	0.00197	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-22	0.14	n/a	9/30/2020	0.045J	No	30	n/a	n/a	56.67	n/a	n/a	0.00197	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	**ARGWC-23**	**0.14**	**n/a**	**10/1/2020**	**0.32**	**Yes**	**30**	**n/a**	**n/a**	**56.67**	**n/a**	**n/a**	**0.00197**	**NP Inter (NDs) 1 of 2**
pH (SU)	ARGWC-21	6.099	5.418	10/1/2020	5.99	No	29	5.759	0.1888	0	None	No	0.001253	Param Inter 1 of 2
pH (SU)	ARGWC-22	6.099	5.418	9/30/2020	5.81	No	29	5.759	0.1888	0	None	No	0.001253	Param Inter 1 of 2
pH (SU)	**ARGWC-23**	**6.099**	**5.418**	**10/1/2020**	**6.38**	**Yes**	**29**	**5.759**	**0.1888**	**0**	**None**	**No**	**0.001253**	**Param Inter 1 of 2**
Sulfate (mg/L)	**ARGWC-21**	**21**	**n/a**	**10/1/2020**	**210**	**Yes**	**51**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000725**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**ARGWC-22**	**21**	**n/a**	**9/30/2020**	**650**	**Yes**	**51**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000725**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**ARGWC-23**	**21**	**n/a**	**10/1/2020**	**64**	**Yes**	**51**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000725**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**ARGWC-21**	**152.3**	**n/a**	**10/1/2020**	**500**	**Yes**	**24**	**110.2**	**22.86**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**ARGWC-22**	**152.3**	**n/a**	**9/30/2020**	**1200**	**Yes**	**24**	**110.2**	**22.86**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**ARGWC-23**	**152.3**	**n/a**	**10/1/2020**	**290**	**Yes**	**24**	**110.2**	**22.86**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**

Trend Tests - Prediction Limit Exceedances - Signifiicant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:58 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**ARGWA-20 (bg)**	**0.01103**	**49**	**43**	**Yes**	**13**	**23.08**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**ARGWC-21**	**0.0653**	**56**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**ARGWC-21**	**7.356**	**68**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**ARGWA-19 (bg)**	**-0.4042**	**-195**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**ARGWC-21**	**5.193**	**222**	**118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids (mg/L)	**ARGWC-21**	**32.77**	**49**	**38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Prediction Limit Exceedances - All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:58 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Barium (mg/L)	ARGWA-19 (bg)	-0.0001383	-20	-131	No	28	0	n/a	n/a	0.01	NP
Barium (mg/L)	ARGWA-20 (bg)	0.0006017	96	131	No	28	0	n/a	n/a	0.01	NP
Barium (mg/L)	ARGWC-23	0.09419	25	30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	ARGWA-19 (bg)	0.006347	29	43	No	13	38.46	n/a	n/a	0.01	NP
Boron (mg/L)	**ARGWA-20 (bg)**	**0.01103**	**49**	**43**	**Yes**	**13**	**23.08**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**ARGWC-21**	**0.0653**	**56**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	ARGWC-22	-0.1722	-8	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	ARGWC-23	0.1197	32	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	ARGWA-19 (bg)	0.6973	37	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	ARGWA-20 (bg)	0.3086	32	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**ARGWC-21**	**7.356**	**68**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	ARGWC-22	0	6	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	ARGWC-23	10.81	21	34	No	11	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	ARGWA-19 (bg)	-0.00711	-24	-53	No	15	46.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	ARGWA-20 (bg)	0	-22	-53	No	15	66.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	ARGWC-23	0.2012	31	34	No	11	0	n/a	n/a	0.01	NP
pH (SU)	ARGWA-19 (bg)	0.01741	11	48	No	14	0	n/a	n/a	0.01	NP
pH (SU)	ARGWA-20 (bg)	0.01693	16	53	No	15	0	n/a	n/a	0.01	NP
pH (SU)	ARGWC-23	-0.1559	-23	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**ARGWA-19 (bg)**	**-0.4042**	**-195**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	ARGWA-20 (bg)	-0.1319	-76	-111	No	25	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**ARGWC-21**	**5.193**	**222**	**118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	ARGWC-22	35.61	4	34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	ARGWC-23	18.25	14	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	ARGWA-19 (bg)	1.991	8	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	ARGWA-20 (bg)	-2.229	-15	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	**ARGWC-21**	**32.77**	**49**	**38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids (mg/L)	ARGWC-22	0	-3	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	ARGWC-23	0	-4	-30	No	10	0	n/a	n/a	0.01	NP

Upper Tolerance Limit Summary Table

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 9:06 AM

Constituent	Upper Lim.	Lower Lim.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.002	n/a	n/a	20	n/a	n/a	100	n/a	n/a	0.3585	NP Inter(NDs)
Arsenic (mg/L)	0.0015	n/a	n/a	56	n/a	n/a	83.93	n/a	n/a	0.05656	NP Inter(NDs)
Barium (mg/L)	0.1	n/a	n/a	56	n/a	n/a	0	n/a	n/a	0.05656	NP Inter(normality)
Beryllium (mg/L)	0.0025	n/a	n/a	22	n/a	n/a	90.91	n/a	n/a	0.3235	NP Inter(NDs)
Cadmium (mg/L)	0.0025	n/a	n/a	54	n/a	n/a	98.15	n/a	n/a	0.06267	NP Inter(NDs)
Chromium (mg/L)	0.0078	n/a	n/a	26	n/a	n/a	19.23	n/a	n/a	0.2635	NP Inter(normality)
Cobalt (mg/L)	0.0025	n/a	n/a	28	n/a	n/a	67.86	n/a	n/a	0.2378	NP Inter(NDs)
Combined Radium 226 + 228 (pCi/L)	1.341	n/a	n/a	26	0.5896	0.3297	0	None	No	0.05	Inter
Fluoride (mg/L)	0.14	n/a	n/a	30	n/a	n/a	56.67	n/a	n/a	0.2146	NP Inter(NDs)
Lead (mg/L)	0.001	n/a	n/a	56	n/a	n/a	87.5	n/a	n/a	0.05656	NP Inter(NDs)
Lithium (mg/L)	0.013	n/a	n/a	28	n/a	n/a	42.86	n/a	n/a	0.2378	NP Inter(normality)
Mercury (mg/L)	0.0002	n/a	n/a	20	n/a	n/a	90	n/a	n/a	0.3585	NP Inter(NDs)
Molybdenum (mg/L)	0.015	n/a	n/a	24	n/a	n/a	95.83	n/a	n/a	0.292	NP Inter(NDs)
Selenium (mg/L)	0.005	n/a	n/a	54	n/a	n/a	62.96	n/a	n/a	0.06267	NP Inter(NDs)
Silver (mg/L)	0.001	n/a	n/a	46	n/a	n/a	89.13	n/a	n/a	0.09447	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	20	n/a	n/a	100	n/a	n/a	0.3585	NP Inter(NDs)

PLANT ARKWRIGHT LF #2 GWPS			
Constituent Name	**MCL**	**Background Limit**	**State GWPS**
Antimony, Total (mg/L)	0.006	0.002	0.006
Arsenic, Total (mg/L)	0.01	0.0015	0.01
Barium, Total (mg/L)	2	0.1	2
Beryllium, Total (mg/L)	0.004	0.0025	0.004
Cadmium, Total (mg/L)	0.005	0.0025	0.005
Chromium, Total (mg/L)	0.1	0.0078	0.1
Cobalt, Total (mg/L)		0.0025	0.0025
Combined Radium, Total (pCi/L)	5	1.3	5
Fluoride, Total (mg/L)	4	0.14	4
Lead, Total (mg/L)		0.001	0.001
Lithium, Total (mg/L)		0.013	0.013
Mercury, Total (mg/L)	0.002	0.0002	0.002
Molybdenum, Total (mg/L)		0.015	0.015
Selenium, Total (mg/L)	0.05	0.005	0.05
Silver, Total (mg/L)		0.001	0.001
Thallium, Total (mg/L)	0.002	0.001	0.002

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

Confidence Intervals Summary - Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (mg/L)	**ARGWC-22**	**0.01257**	**0.004289**	**0.0025**	**Yes**	**11**	**0.008427**	**0.004965**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	**ARGWC-23**	**0.04047**	**0.01986**	**0.013**	**Yes**	**11**	**0.03016**	**0.01236**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**ARGWC-23**	**0.05901**	**0.02639**	**0.015**	**Yes**	**10**	**0.0427**	**0.01828**	**0**	**None**	**No**	**0.01**	**Param.**
Silver (mg/L)	**ARGWC-21**	**0.001**	**0.001**	**0.001**	**Yes**	**10**	**0.000943**	**0.0001802**	**90**	**None**	**No**	**0.011**	**NP (NDs)**

Confidence Intervals Summary - All Results

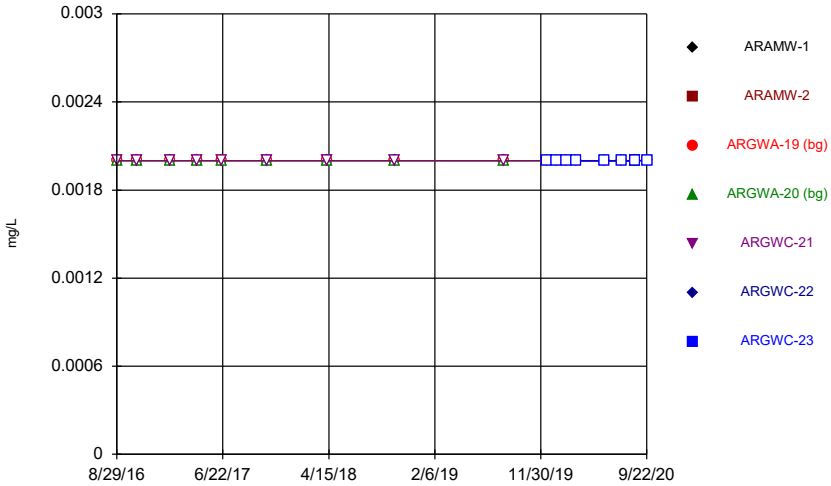
Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	ARGWC-21	0.002038	0.001234	0.01	No	15	0.001636	0.0005931	13.33	None	No	0.01	Param.
Arsenic (mg/L)	ARGWC-22	0.001	0.0004	0.01	No	10	0.000844	0.0002618	70	None	No	0.011	NP (NDs)
Arsenic (mg/L)	ARGWC-23	0.001	0.00075	0.01	No	10	0.000917	0.0001915	80	None	No	0.011	NP (NDs)
Barium (mg/L)	ARGWC-21	0.1188	0.08617	2	No	15	0.1003	0.02777	0	None	x^2	0.01	Param.
Barium (mg/L)	ARGWC-22	0.06139	0.03581	2	No	10	0.0486	0.01433	0	None	No	0.01	Param.
Barium (mg/L)	ARGWC-23	0.1716	0.103	2	No	10	0.1347	0.04572	0	None	x^2	0.01	Param.
Beryllium (mg/L)	ARGWC-22	0.0025	0.00018	0.004	No	9	0.001273	0.001168	44.44	None	No	0.002	NP (normality)
Beryllium (mg/L)	ARGWC-23	0.0025	0.00033	0.004	No	9	0.002259	0.0007233	88.89	None	No	0.002	NP (NDs)
Chromium (mg/L)	ARGWC-21	0.002	0.0017	0.1	No	13	0.001977	0.00008321	92.31	None	No	0.01	NP (NDs)
Chromium (mg/L)	ARGWC-22	0.002	0.002	0.1	No	10	0.00228	0.0008854	90	None	No	0.011	NP (NDs)
Cobalt (mg/L)	ARGWC-21	0.001952	0.0013	0.0025	No	14	0.00158	0.000523	0	None	x^2	0.01	Param.
Cobalt (mg/L)	**ARGWC-22**	**0.01257**	**0.004289**	**0.0025**	**Yes**	**11**	**0.008427**	**0.004965**	**0**	**None**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	ARGWC-23	0.003322	0.001055	0.0025	No	11	0.002188	0.00136	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	ARGWC-21	0.8862	0.5093	5	No	13	0.6978	0.2534	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	ARGWC-22	0.7936	0.2782	5	No	10	0.5359	0.2888	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	ARGWC-23	0.612	0.08116	5	No	10	0.3466	0.2975	0	None	No	0.01	Param.
Fluoride (mg/L)	ARGWC-21	0.12	0.065	4	No	15	0.1286	0.1259	0	None	No	0.01	NP (normality)
Fluoride (mg/L)	ARGWC-22	0.0609	0.04043	4	No	11	0.05055	0.01166	18.18	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	ARGWC-23	0.2819	0.1561	4	No	11	0.219	0.07547	0	None	No	0.01	Param.
Lead (mg/L)	ARGWC-21	0.001	0.00026	0.001	No	15	0.000894	0.0002805	86.67	None	No	0.01	NP (NDs)
Lead (mg/L)	ARGWC-22	0.001	0.00022	0.001	No	10	0.000836	0.0003463	80	None	No	0.011	NP (NDs)
Lead (mg/L)	ARGWC-23	0.001	0.00026	0.001	No	10	0.000844	0.0003294	80	None	No	0.011	NP (NDs)
Lithium (mg/L)	ARAMW-1	0.01091	0.005644	0.013	No	4	0.008275	0.001159	0	None	No	0.01	Param.
Lithium (mg/L)	ARAMW-2	0.1122	-0.03272	0.013	No	4	0.03975	0.03192	0	None	No	0.01	Param.
Lithium (mg/L)	ARGWC-21	0.01208	0.008752	0.013	No	14	0.01041	0.002347	0	None	No	0.01	Param.
Lithium (mg/L)	ARGWC-22	0.02553	0.01176	0.013	No	11	0.01865	0.00826	0	None	No	0.01	Param.
Lithium (mg/L)	**ARGWC-23**	**0.04047**	**0.01986**	**0.013**	**Yes**	**11**	**0.03016**	**0.01236**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	ARGWC-22	0.015	0.00093	0.015	No	10	0.00946	0.007158	60	None	No	0.011	NP (NDs)
Molybdenum (mg/L)	**ARGWC-23**	**0.05901**	**0.02639**	**0.015**	**Yes**	**10**	**0.0427**	**0.01828**	**0**	**None**	**No**	**0.01**	**Param.**
Silver (mg/L)	**ARGWC-21**	**0.001**	**0.001**	**0.001**	**Yes**	**10**	**0.000943**	**0.0001802**	**90**	**None**	**No**	**0.011**	**NP (NDs)**

FIGURE A.

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

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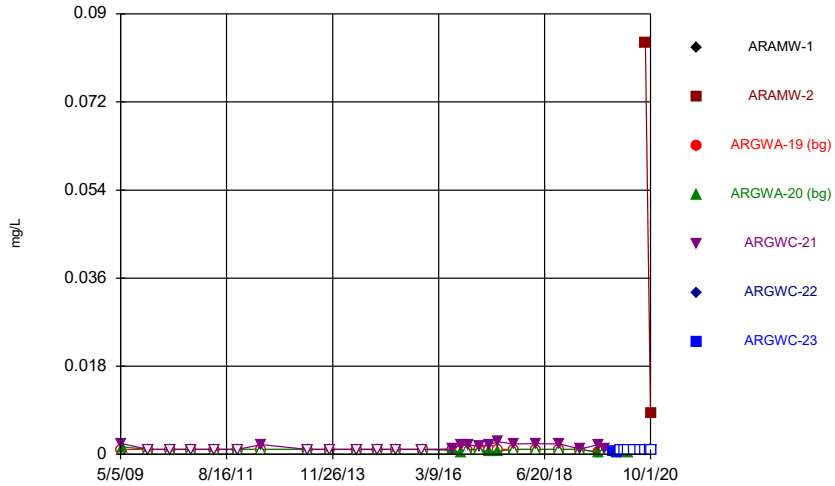
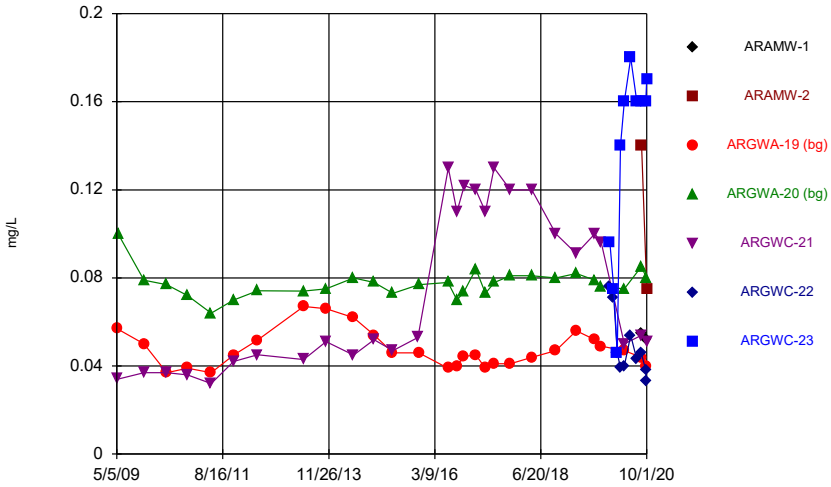


Constituent: Arsenic Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Time Series



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Plant Arkwright Client: Southern Company Data: Arkwright No 2

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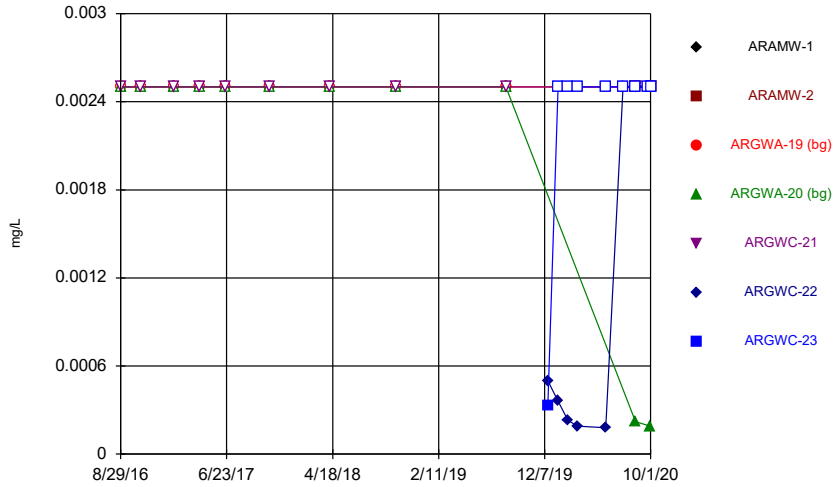

Constituent: Beryllium Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

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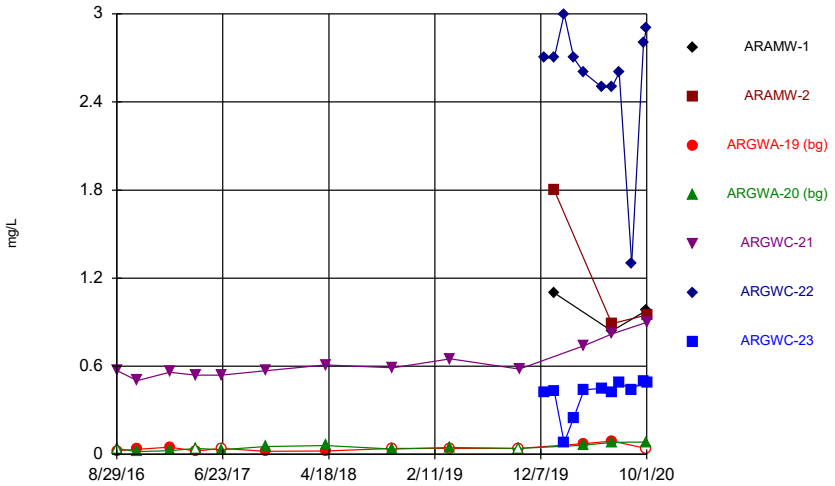

Constituent: Boron Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

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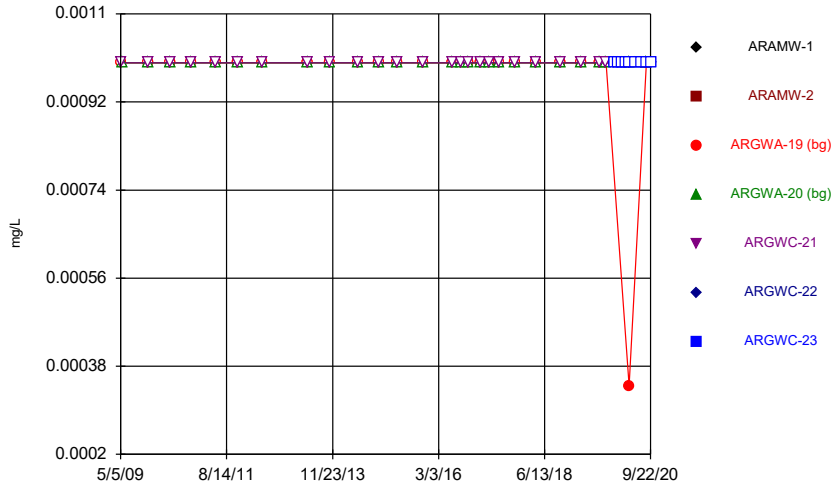
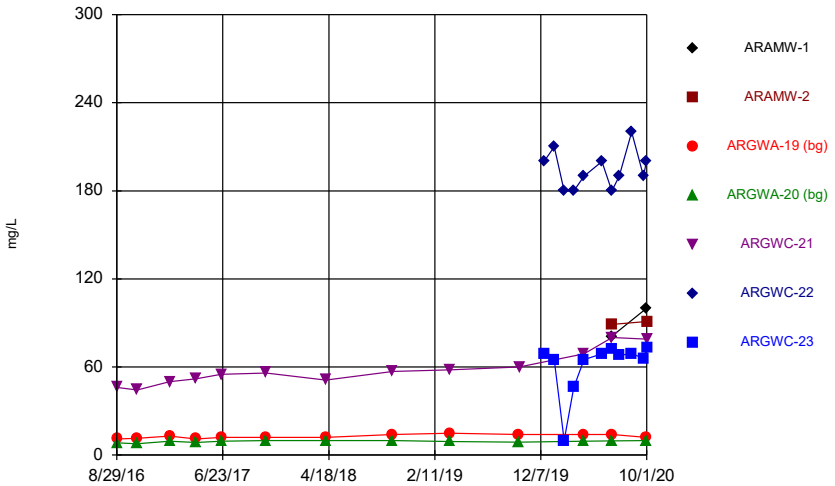


Constituent: Cadmium Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

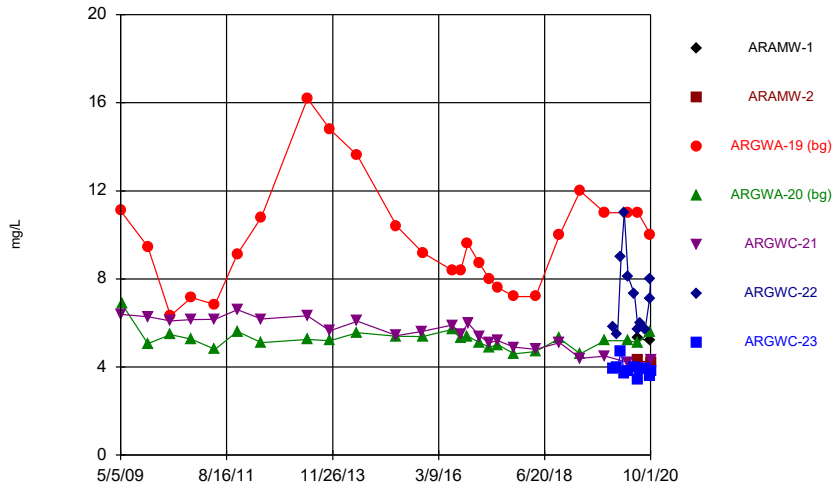
Time Series



Constituent: Calcium Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Time Series



Constituent: Chloride Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

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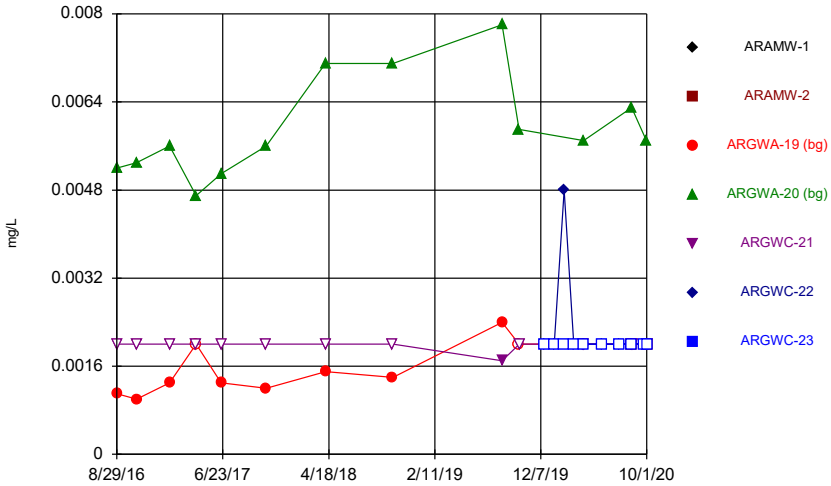

Constituent: Chromium Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
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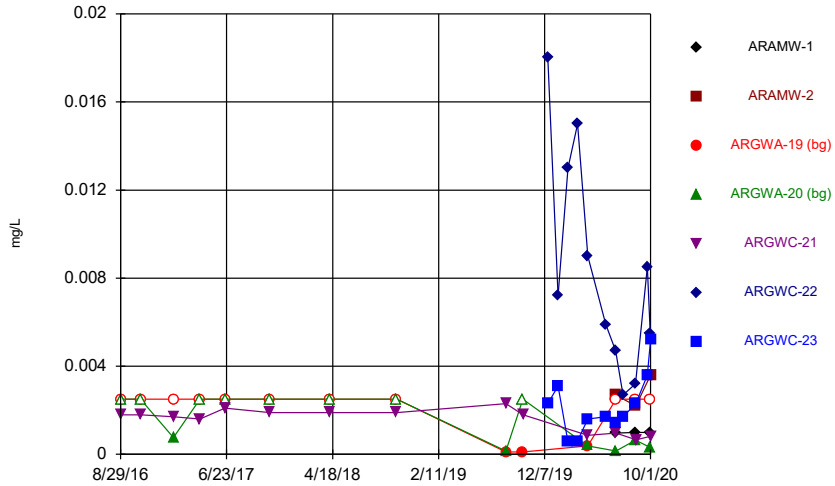
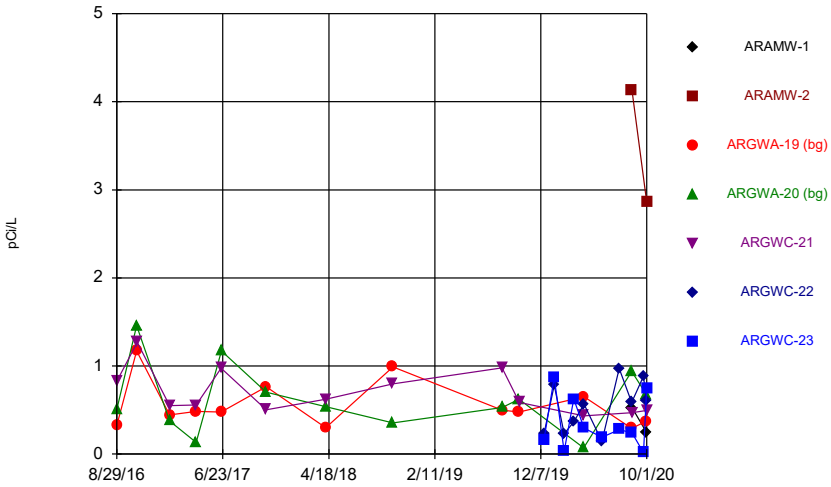
Time Series



Constituent: Cobalt Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

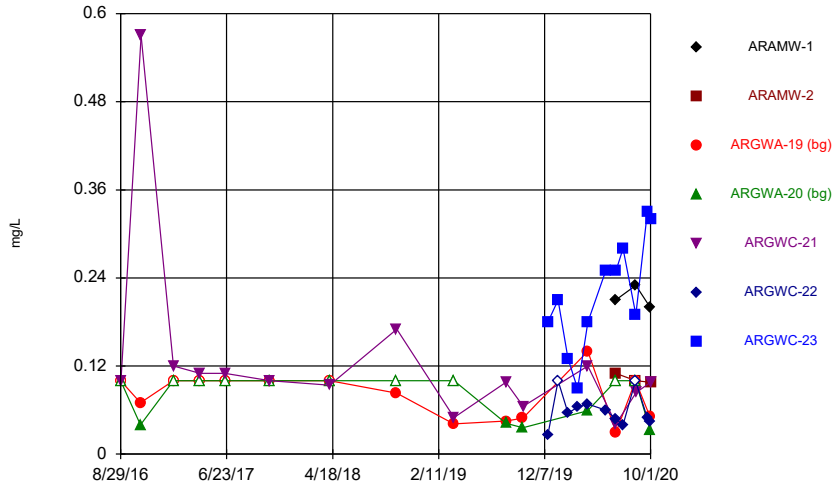
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

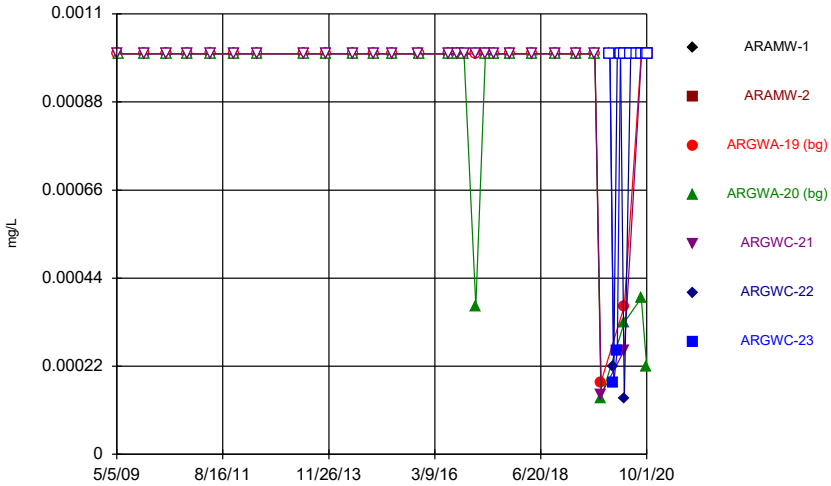
Time Series



Constituent: Fluoride Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Lead Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

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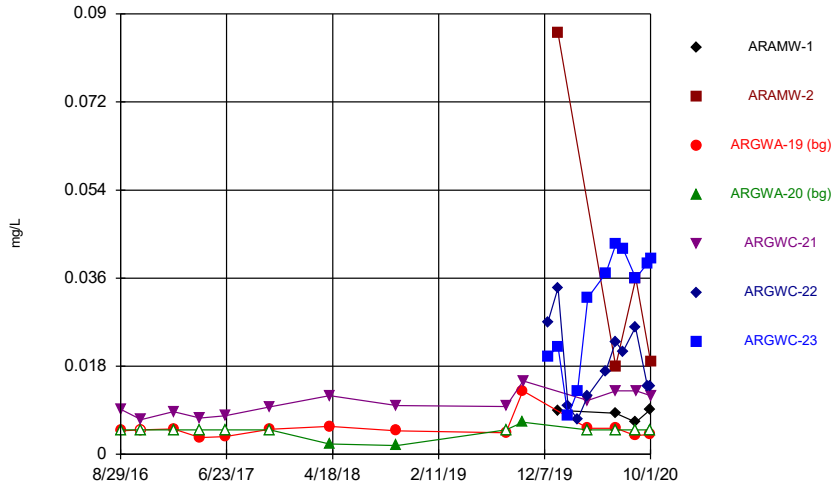
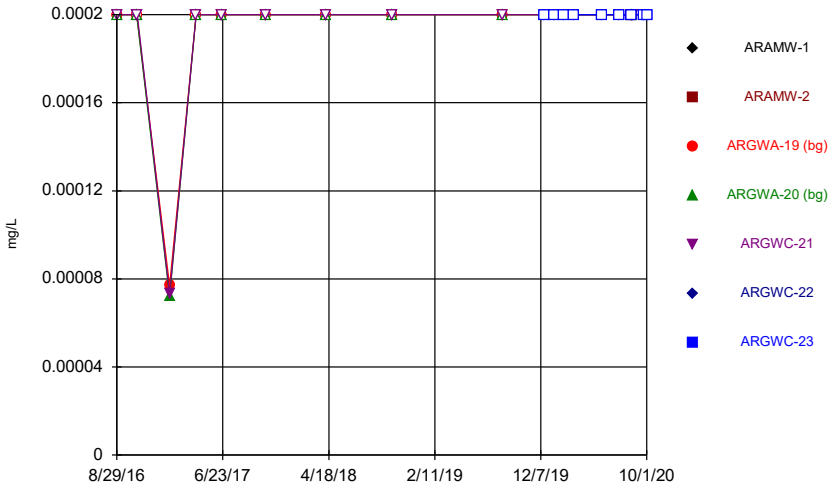
Time Series



Constituent: Lithium Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

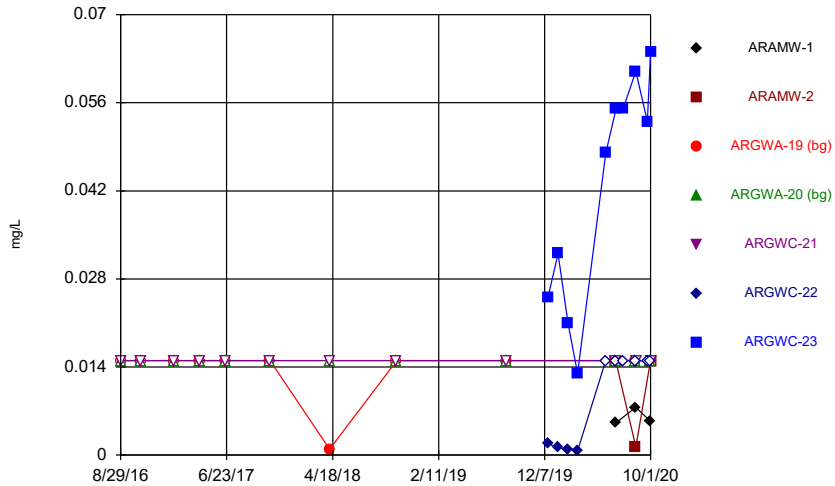
Time Series



Constituent: Mercury Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

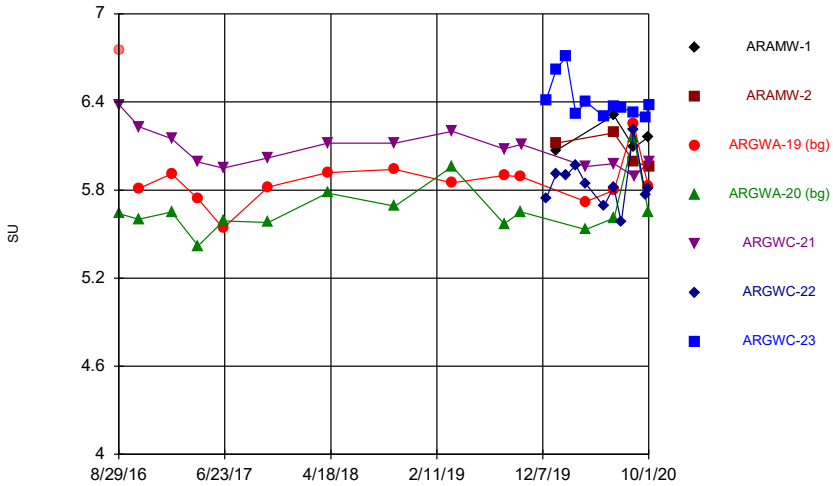
Time Series



Constituent: Molybdenum Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Time Series



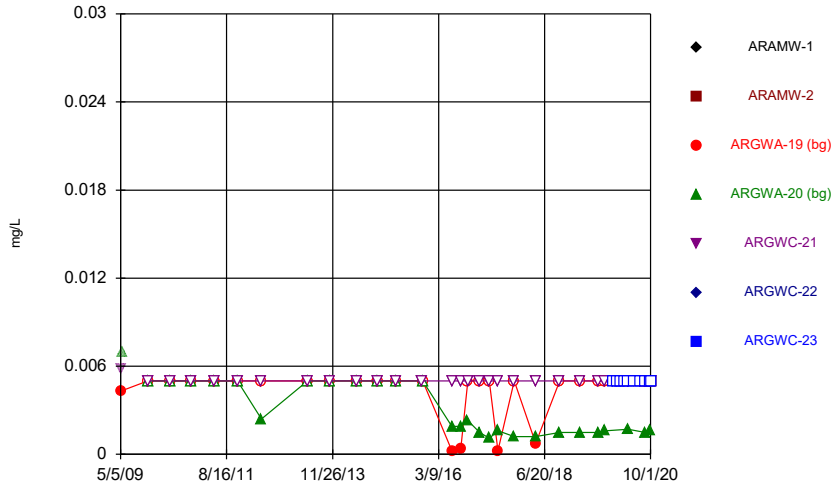
Constituent: pH Analysis Run 12/4/2020 12:46 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series



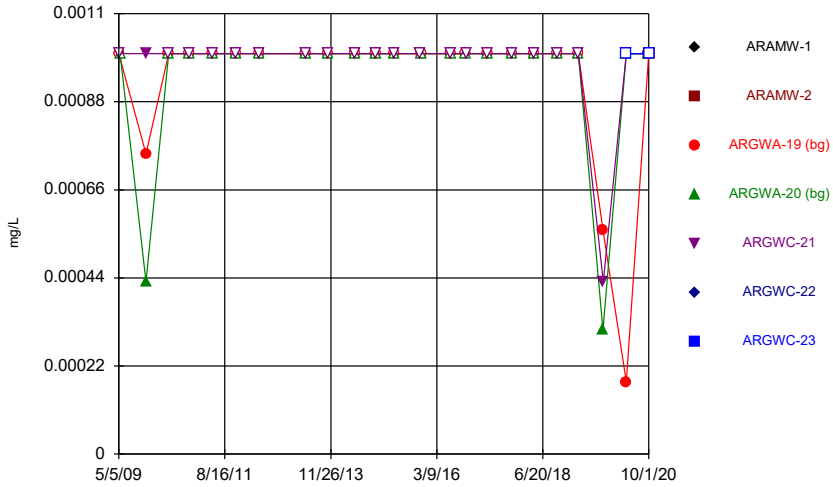
Constituent: Selenium Analysis Run 12/4/2020 12:46 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series

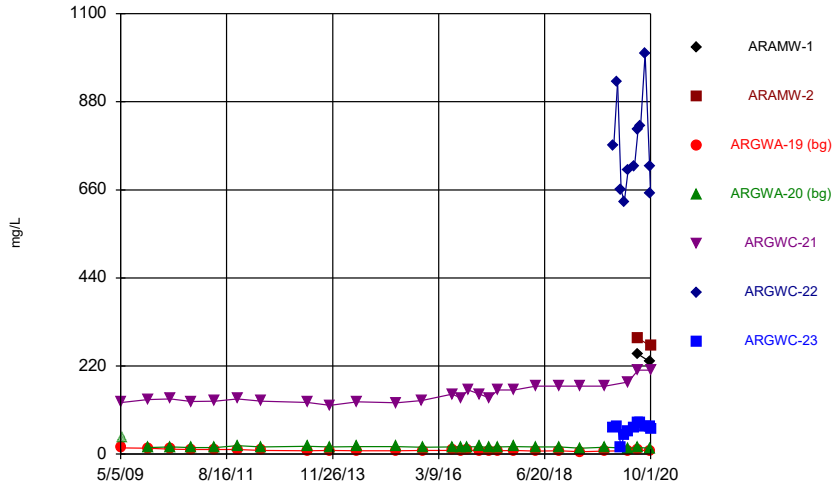


Constituent: Silver Analysis Run 12/4/2020 12:46 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Time Series

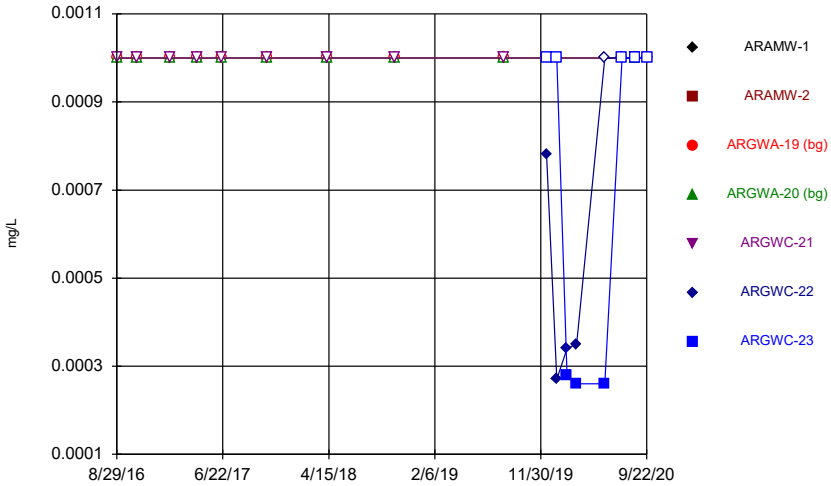


Constituent: Sulfate Analysis Run 12/4/2020 12:46 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

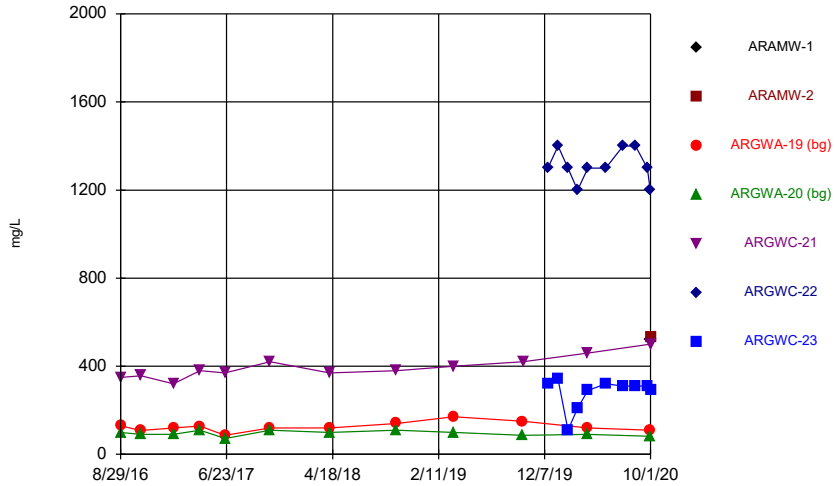
Time Series



Constituent: Thallium Analysis Run 12/4/2020 12:46 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 12/4/2020 12:47 PM
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Time Series

Constituent: Antimony (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.002	<0.002			
8/30/2016					<0.002		
10/24/2016			<0.002	<0.002			
10/26/2016					<0.002		
1/25/2017			<0.002	<0.002	<0.002		
4/10/2017			<0.002	<0.002	<0.002		
6/19/2017			<0.002		<0.002		
6/20/2017				<0.002			
10/24/2017			<0.002	<0.002	<0.002		
4/9/2018				<0.002			
4/10/2018			<0.002		<0.002		
10/16/2018			<0.002	<0.002	<0.002		
8/20/2019			<0.002	<0.002	<0.002		
12/16/2019						<0.002	<0.002
1/14/2020						<0.002	<0.002
2/11/2020						<0.002	<0.002
3/9/2020						<0.002	<0.002
5/27/2020						<0.002	<0.002
7/15/2020						<0.002	<0.002
8/19/2020			<0.002	<0.002		<0.002	
8/20/2020	<0.002	<0.002					<0.002
8/21/2020					<0.002		
9/22/2020						<0.002	<0.002

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			<0.001				
5/14/2009					0.0022		
5/15/2009				0.0015			
12/5/2009			<0.001	<0.001	<0.001		
6/1/2010			<0.001	<0.001			
6/2/2010					<0.001		
11/11/2010			<0.001	<0.001	<0.001		
5/17/2011			<0.001	<0.001	<0.001		
11/8/2011			<0.001	<0.001	<0.001		
5/16/2012			<0.001	<0.001	0.002 (J)		
5/14/2013			<0.001	<0.001	<0.001		
11/5/2013			<0.001	<0.001	<0.001		
6/9/2014			<0.001	<0.001	<0.001		
11/18/2014				<0.001	<0.001		
11/19/2014			<0.001				
4/14/2015			<0.001	<0.001	<0.001		
10/29/2015					<0.001		
11/4/2015			<0.001	<0.001			
6/22/2016			<0.001	0.00084 (J)			
6/23/2016					0.0011 (J)		
8/29/2016			<0.001	0.00049 (J)			
8/30/2016					0.002		
10/24/2016			<0.001	<0.001			
10/26/2016					0.0019 (J)		
1/25/2017			<0.001	<0.001	0.0017		
4/10/2017			<0.001	0.00056 (J)	0.002		
6/19/2017			<0.001		0.0026		
6/20/2017				0.00068 (J)			
10/24/2017			<0.001	<0.001	0.0021		
4/9/2018				<0.001			
4/10/2018			<0.001		0.0022		
10/16/2018			<0.001	<0.001	0.0021		
3/26/2019			<0.001				
3/27/2019				<0.001	0.0011 (J)		
8/20/2019			0.00036 (J)	0.00047 (J)	0.002		
10/7/2019			<0.001	<0.001			
10/8/2019					0.0012 (J)		
12/16/2019						0.00066 (J)	0.00075 (J)
1/14/2020						0.00038 (J)	0.00042 (J)
2/11/2020						0.0004 (J)	<0.001
3/9/2020						<0.001	<0.001
4/6/2020				0.00042 (J)			
4/7/2020			0.0006 (J)		0.00054 (J)	<0.001	<0.001
5/27/2020						<0.001	<0.001
7/15/2020						<0.001	<0.001
8/19/2020			<0.001	<0.001		<0.001	
8/20/2020	<0.001	0.084					<0.001
8/21/2020					<0.001		
9/22/2020						<0.001	<0.001
9/29/2020			<0.001				
9/30/2020	<0.001			<0.001		<0.001	
10/1/2020		0.0085			<0.001		<0.001

Time Series

Constituent: Barium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			0.057				
5/14/2009					0.034		
5/15/2009				0.1			
12/5/2009			0.05	0.079	0.037		
6/1/2010			0.037	0.077			
6/2/2010					0.037		
11/11/2010			0.039	0.072	0.036		
5/17/2011			0.037	0.064	0.032		
11/8/2011			0.045	0.07	0.042		
5/16/2012			0.0518	0.0741	0.0451		
5/14/2013			0.067	0.074	0.043		
11/5/2013			0.066	0.075	0.051		
6/9/2014			0.062	0.08	0.045		
11/18/2014				0.078	0.052		
11/19/2014			0.054				
4/14/2015			0.046	0.073	0.047		
10/29/2015					0.053		
11/4/2015			0.046	0.077			
6/22/2016			0.039	0.078			
6/23/2016					0.13		
8/29/2016			0.04	0.07			
8/30/2016					0.11		
10/24/2016			0.0444	0.0738			
10/26/2016					0.122		
1/25/2017			0.045	0.084	0.12		
4/10/2017			0.039	0.073	0.11		
6/19/2017			0.041		0.13		
6/20/2017				0.078			
10/24/2017			0.041	0.081	0.12		
4/9/2018				0.081			
4/10/2018			0.044		0.12		
10/16/2018			0.047	0.08	0.1		
3/26/2019			0.056				
3/27/2019				0.082	0.091		
8/20/2019			0.052	0.079	0.1		
10/7/2019			0.049	0.076			
10/8/2019					0.096		
12/16/2019						0.076	0.096
1/14/2020						0.071	0.075
2/11/2020						0.046	0.046
3/9/2020						0.039	0.14
4/6/2020				0.075			
4/7/2020			0.047		0.05	0.04	0.16
5/27/2020						0.054	0.18
7/15/2020						0.043	0.16
8/19/2020			0.044	0.085		0.046	
8/20/2020	0.055	0.14					0.16
8/21/2020					0.054		
9/22/2020						0.038	0.16
9/29/2020			0.04				
9/30/2020	0.052			0.08		0.033	
10/1/2020		0.075			0.051		0.17

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.0025	<0.0025			
8/30/2016					<0.0025		
10/24/2016			<0.0025	<0.0025			
10/26/2016					<0.0025		
1/25/2017			<0.0025	<0.0025	<0.0025		
4/10/2017			<0.0025	<0.0025	<0.0025		
6/19/2017			<0.0025		<0.0025		
6/20/2017				<0.0025			
10/24/2017			<0.0025	<0.0025	<0.0025		
4/9/2018				<0.0025			
4/10/2018			<0.0025		<0.0025		
10/16/2018			<0.0025	<0.0025	<0.0025		
8/20/2019			<0.0025	<0.0025	<0.0025		
12/16/2019						0.0005 (J)	0.00033 (J)
1/14/2020						0.00036 (J)	<0.0025
2/11/2020						0.00023	<0.0025
3/9/2020						0.00019	<0.0025
5/27/2020						0.00018 (J)	<0.0025
7/15/2020						<0.0025	<0.0025
8/19/2020			<0.0025	0.00022 (J)		<0.0025	
8/20/2020	<0.0025	<0.0025					<0.0025
8/21/2020					<0.0025		
9/22/2020						<0.0025	<0.0025
9/29/2020			<0.0025				
9/30/2020	<0.0025			0.00019 (J)		<0.0025	
10/1/2020		<0.0025			<0.0025		<0.0025

Time Series

Constituent: Boron (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			0.024 (J)	<0.08			
8/30/2016					0.57		
10/24/2016			0.0339 (J)	0.0194 (J)			
10/26/2016					0.502		
1/25/2017			0.048 (J)	0.026 (J)	0.56		
4/10/2017			0.022 (J)	<0.08	0.54		
6/19/2017			<0.08		0.54		
6/20/2017				0.032 (J)			
10/24/2017			0.021 (J)	0.054	0.57		
4/9/2018				0.06			
4/10/2018			0.022 (J)		0.61		
10/16/2018			<0.08	0.036 (J)	0.59		
3/26/2019			<0.08				
3/27/2019				0.046 (J)	0.65		
10/7/2019			<0.08	<0.08			
10/8/2019					0.58		
12/16/2019						2.7	0.42
1/14/2020	1.1	1.8				2.7	0.43
2/11/2020						3	0.079 (J)
3/9/2020						2.7	0.25
4/6/2020				0.063 (J)			
4/7/2020			0.072 (J)		0.74	2.6	0.44
5/27/2020						2.5	0.45
6/24/2020	0.84	0.89				2.5	
6/25/2020			0.091	0.081	0.82		0.42
7/15/2020						2.6	0.49
8/19/2020						1.3	
8/20/2020							0.44
9/22/2020						2.8	0.5
9/29/2020			<0.08				
9/30/2020	0.98			0.083		2.9	
10/1/2020		0.95			0.9		0.49

Time Series

Constituent: Cadmium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			<0.001				
5/14/2009					<0.001		
5/15/2009				<0.001			
12/5/2009			<0.001	<0.001	<0.001		
6/1/2010			<0.001	<0.001			
6/2/2010					<0.001		
11/11/2010			<0.001	<0.001	<0.001		
5/17/2011			<0.001	<0.001	<0.001		
11/8/2011			<0.001	<0.001	<0.001		
5/16/2012			<0.001	<0.001	<0.001		
5/14/2013			<0.001	<0.001	<0.001		
11/5/2013			<0.001	<0.001	<0.001		
6/9/2014			<0.001	<0.001	<0.001		
11/18/2014				<0.001	<0.001		
11/19/2014			<0.001				
4/14/2015			<0.001	<0.001	<0.001		
10/29/2015					<0.001		
11/4/2015			<0.001	<0.001			
6/22/2016			<0.001	<0.001			
6/23/2016					<0.001		
8/29/2016			<0.001	<0.001			
8/30/2016					<0.001		
10/24/2016			<0.001	<0.001			
10/26/2016					<0.001		
1/25/2017			<0.001	<0.001	<0.001		
4/10/2017			<0.001	<0.001	<0.001		
6/19/2017			<0.001		<0.001		
6/20/2017				<0.001			
10/24/2017			<0.001	<0.001	<0.001		
4/9/2018				<0.001			
4/10/2018			<0.001		<0.001		
10/16/2018			<0.001	<0.001	<0.001		
3/26/2019			<0.001				
3/27/2019				<0.001	<0.001		
8/20/2019			<0.001	<0.001	<0.001		
10/7/2019			<0.001	<0.001			
10/8/2019					<0.001		
12/16/2019						<0.001	<0.001
1/14/2020						<0.001	<0.001
2/11/2020						<0.001	<0.001
3/9/2020						<0.001	<0.001
4/6/2020				<0.001			
4/7/2020			0.00034 (J)		<0.001	<0.001	<0.001
5/27/2020						<0.001	<0.001
7/15/2020						<0.001	<0.001
8/19/2020			<0.001	<0.001		<0.001	
8/20/2020	<0.001	<0.001					<0.001
8/21/2020					<0.001		
9/22/2020						<0.001	<0.001

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			11	8.3			
8/30/2016					46		
10/24/2016			11.5	7.66			
10/26/2016					44.3		
1/25/2017			13	9.4	50		
4/10/2017			11	8.6	52		
6/19/2017			12		55		
6/20/2017				9.4			
10/24/2017			12	9.9	56		
4/9/2018				9.9			
4/10/2018			12		51		
10/16/2018			14	9.8	57		
3/26/2019			15				
3/27/2019				9.2	58		
10/7/2019			14	8.9			
10/8/2019					60		
12/16/2019						200	69
1/14/2020						210	65
2/11/2020						180	10
3/9/2020						180	46
4/6/2020				9.5			
4/7/2020			14		69	190	65
5/27/2020						200	69
6/24/2020	81	89				180	
6/25/2020			14	9.6	80		72
7/15/2020						190	68
8/19/2020						220	
8/20/2020							69
9/22/2020						190	66
9/29/2020			12				
9/30/2020	100			9.9		200	
10/1/2020		91			79		73

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			11.1				
5/14/2009					6.38		
5/15/2009				6.86			
12/5/2009			9.46	5.06	6.28		
6/1/2010			6.32	5.47			
6/2/2010					6.1		
11/11/2010			7.16	5.26	6.1461		
5/17/2011			6.84	4.8	6.17		
11/8/2011			9.13	5.62	6.6		
5/16/2012			10.8	5.1	6.18		
5/14/2013			16.2	5.25	6.32		
11/5/2013			14.8	5.19	5.65		
6/9/2014			13.6	5.55	6.08		
4/14/2015			10.4	5.39	5.43		
10/29/2015					5.62		
11/4/2015			9.19	5.38			
6/22/2016			8.4	5.7			
6/23/2016					5.9		
8/29/2016			8.4	5.3			
8/30/2016					5.5		
10/24/2016			9.6	5.4			
10/26/2016					6		
1/25/2017			8.7	5.1	5.4		
4/10/2017			8	4.9	5.1		
6/19/2017			7.6		5.2		
6/20/2017				5			
10/24/2017			7.2	4.6	4.9		
4/9/2018				4.7			
4/10/2018			7.2		4.8		
10/16/2018			10	5.3	5.1		
3/26/2019			12				
3/27/2019				4.6	4.4		
10/7/2019			11	5.2			
10/8/2019					4.5		
12/16/2019						5.8	3.9
1/14/2020						5.5	4
2/11/2020						9	4.7
3/9/2020						11	3.7
4/6/2020				5.2			
4/7/2020			11		4.2	8.1	3.8
5/27/2020						7.3	4
6/24/2020	5.3	4.3				5.7	
6/25/2020			11	5.1	3.7		3.4
7/15/2020						6	3.9
8/19/2020						5.7	
8/20/2020							3.9
9/22/2020						7.1	3.6
9/29/2020			10				
9/30/2020	5.2			5.6		8	
10/1/2020		4.2			4.3		3.8

Time Series

Constituent: Chromium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			0.0011 (J)	0.0052			
8/30/2016					<0.002		
10/24/2016			0.001 (J)	0.0053 (J)			
10/26/2016					<0.002		
1/25/2017			0.0013 (J)	0.0056	<0.002		
4/10/2017			<0.002	0.0047	<0.002		
6/19/2017			0.0013 (J)		<0.002		
6/20/2017				0.0051			
10/24/2017			0.0012 (J)	0.0056	<0.002		
4/9/2018				0.0071			
4/10/2018			0.0015 (J)		<0.002		
10/16/2018			0.0014 (J)	0.0071	<0.002		
8/20/2019			0.0024	0.0078	0.0017 (J)		
10/7/2019			<0.002	0.0059			
10/8/2019					<0.002		
12/16/2019						<0.002	<0.002
1/14/2020						<0.002	<0.002
2/11/2020						0.0048	<0.002
3/9/2020						<0.002	<0.002
4/6/2020				0.0057			
4/7/2020			<0.002		<0.002	<0.002	<0.002
5/27/2020						<0.002	<0.002
7/15/2020						<0.002	<0.002
8/19/2020			<0.002	0.0063		<0.002	
8/20/2020	<0.002	<0.002					<0.002
8/21/2020					<0.002		
9/22/2020						<0.002	<0.002
9/29/2020			<0.002				
9/30/2020	<0.002			0.0057		<0.002	
10/1/2020		<0.002			<0.002		<0.002

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.0025	<0.0025			
8/30/2016					0.0018 (J)		
10/24/2016			<0.0025	<0.0025			
10/26/2016					0.0018 (J)		
1/25/2017			<0.0025	0.00076 (J)	0.0017 (J)		
4/10/2017			<0.0025	<0.0025	0.0016 (J)		
6/19/2017			<0.0025		0.0021 (J)		
6/20/2017				<0.0025			
10/24/2017			<0.0025	<0.0025	0.0019 (J)		
4/9/2018				<0.0025			
4/10/2018			<0.0025		0.0019 (J)		
10/16/2018			<0.0025	<0.0025	0.0019 (J)		
8/20/2019			0.00011 (J)	0.00015 (J)	0.0023		
10/7/2019			0.00011 (J)	<0.0025			
10/8/2019					0.0018		
12/16/2019						0.018	0.0023
1/14/2020						0.0072	0.0031
2/11/2020						0.013	0.00056
3/9/2020						0.015	0.00061 (J)
4/6/2020				0.00039 (J)			
4/7/2020			0.00038 (J)		0.00087	0.009	0.0016
5/27/2020						0.0059	0.0017 (J)
6/24/2020	0.00097 (J)	0.0027				0.0047	
6/25/2020			<0.0025	0.00015 (J)	0.00097 (J)		0.0014 (J)
7/15/2020						0.0027	0.0017 (J)
8/19/2020			<0.0025	0.00064 (J)		0.0032	
8/20/2020	0.001 (J)	0.0022 (J)					0.0023 (J)
8/21/2020					0.00066 (J)		
9/22/2020						0.0085	0.0036
9/29/2020			<0.0025				
9/30/2020	0.001 (J)			0.00031 (J)		0.0055	
10/1/2020		0.0036			0.00082 (J)		0.0052

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			0.324 (U)	0.508 (U)			
8/30/2016					0.832		
10/24/2016			1.17 (U)	1.46			
10/26/2016					1.27		
1/25/2017			0.443 (U)	0.377 (U)	0.549		
4/10/2017			0.483	0.132 (U)	0.556		
6/19/2017			0.478		0.976		
6/20/2017				1.17			
10/24/2017			0.764	0.704	0.504		
4/9/2018				0.539			
4/10/2018			0.3 (U)		0.621		
10/16/2018			0.991	0.354 (U)	0.796		
8/20/2019			0.498	0.53	0.978		
10/7/2019			0.476 (U)	0.621 (U)			
10/8/2019					0.588		
12/16/2019						0.229 (U)	0.166 (U)
1/14/2020						0.783	0.869
2/11/2020						0.229 (U)	0.0291 (U)
3/9/2020						0.365	0.626
4/6/2020				0.072 (U)			
4/7/2020			0.651		0.433 (U)	0.567	0.296 (U)
5/27/2020						0.143 (U)	0.192 (U)
7/15/2020						0.97	0.279 (U)
8/19/2020			0.294 (U)	0.94		0.587 (U)	
8/20/2020	0.527	4.13					0.242 (U)
8/21/2020					0.472		
9/22/2020						0.884	0.0177 (U)
9/29/2020			0.372 (U)				
9/30/2020	0.249 (U)			0.679		0.602	
10/1/2020		2.86			0.496 (U)		0.749

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.1	<0.1			
8/30/2016					0.099 (J)		
10/24/2016			0.07 (J)	0.04 (J)			
10/26/2016					0.57		
1/25/2017			<0.1	<0.1	0.12 (J)		
4/10/2017			<0.1	<0.1	0.11 (J)		
6/19/2017			<0.1		0.11 (J)		
6/20/2017				<0.1			
10/24/2017			<0.1	<0.1	0.1 (J)		
4/9/2018				<0.1			
4/10/2018			<0.1		0.094 (J)		
10/16/2018			0.083 (J)	<0.1	0.17 (J)		
3/26/2019			0.041 (J)				
3/27/2019				<0.1	0.05 (J)		
8/20/2019			0.045 (J)	0.042 (J)	0.098 (J)		
10/7/2019			0.049 (J)	0.036 (J)			
10/8/2019					0.065 (J)		
12/16/2019						0.026 (J)	0.18 (J)
1/14/2020						<0.1	0.21
2/11/2020						0.056	0.13
3/9/2020						0.064 (J)	0.089 (J)
4/6/2020				0.059 (J)			
4/7/2020			0.14		0.12	0.068 (J)	0.18
5/27/2020						0.06 (J)	0.25
6/24/2020	0.21	0.11				0.048 (J)	
6/25/2020			0.03 (J)	<0.1	0.041 (J)		0.25
7/15/2020						0.04 (J)	0.28
8/19/2020			<0.1	<0.1		<0.1	
8/20/2020	0.23	<0.1					0.19
8/21/2020					0.084 (J)		
9/22/2020						0.049 (J)	0.33
9/29/2020			0.051 (J)				
9/30/2020	0.2			0.032 (J)		0.045 (J)	
10/1/2020		0.098 (J)			0.098 (J)		0.32

Time Series

Constituent: Lead (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			<0.001				
5/14/2009					<0.001		
5/15/2009				<0.001			
12/5/2009			<0.001	<0.001	<0.001		
6/1/2010			<0.001	<0.001			
6/2/2010					<0.001		
11/11/2010			<0.001	<0.001	<0.001		
5/17/2011			<0.001	<0.001	<0.001		
11/8/2011			<0.001	<0.001	<0.001		
5/16/2012			<0.001	<0.001	<0.001		
5/14/2013			<0.001	<0.001	<0.001		
11/5/2013			<0.001	<0.001	<0.001		
6/9/2014			<0.001	<0.001	<0.001		
11/18/2014				<0.001	<0.001		
11/19/2014			<0.001				
4/14/2015			<0.001	<0.001	<0.001		
10/29/2015					<0.001		
11/4/2015			<0.001	<0.001			
6/22/2016			<0.001	<0.001			
6/23/2016					<0.001		
8/29/2016			<0.001	<0.001			
8/30/2016					<0.001		
10/24/2016			<0.001	<0.001			
10/26/2016					<0.001		
1/25/2017			<0.001	0.00037 (J)	<0.001		
4/10/2017			<0.001	<0.001	<0.001		
6/19/2017			<0.001		<0.001		
6/20/2017				<0.001			
10/24/2017			<0.001	<0.001	<0.001		
4/9/2018				<0.001			
4/10/2018			<0.001		<0.001		
10/16/2018			<0.001	<0.001	<0.001		
3/26/2019			<0.001				
3/27/2019				<0.001	<0.001		
8/20/2019			<0.001	<0.001	<0.001		
10/7/2019			0.00018 (J)	0.00014 (J)			
10/8/2019					0.00015 (J)		
12/16/2019						<0.001	<0.001
1/14/2020						0.00022 (J)	0.00018 (J)
2/11/2020						<0.001	0.00026 (J)
3/9/2020						<0.001	<0.001
4/6/2020				0.00033 (J)			
4/7/2020			0.00037 (J)		0.00026 (J)	0.00014 (J)	<0.001
5/27/2020						<0.001	<0.001
7/15/2020						<0.001	<0.001
8/19/2020			<0.001	0.00039 (J)		<0.001	
8/20/2020	<0.001	<0.001					<0.001
8/21/2020					<0.001		
9/22/2020						<0.001	<0.001
9/29/2020			<0.001				
9/30/2020	<0.001			0.00022 (J)		<0.001	
10/1/2020		<0.001			<0.001		<0.001

Time Series

Constituent: Lithium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			0.0048 (J)	<0.005			
8/30/2016					0.0092		
10/24/2016			<0.005	<0.005			
10/26/2016					0.0071 (J)		
1/25/2017			0.0052	<0.005	0.0087		
4/10/2017			0.0034 (J)	<0.005	0.0074		
6/19/2017			0.0036 (J)		0.0079		
6/20/2017				<0.005			
10/24/2017			0.0051	<0.005	0.0097		
4/9/2018				0.0021 (J)			
4/10/2018			0.0057		0.012		
10/16/2018			0.0048 (J)	0.0018 (J)	0.01		
8/20/2019			0.0044 (J)	<0.005	0.0098		
10/7/2019			0.013	0.0066			
10/8/2019					0.015		
12/16/2019						0.027	0.02
1/14/2020	0.009	0.086				0.034	0.022
2/11/2020						0.01	0.0078
3/9/2020						0.0071	0.013
4/6/2020				<0.005			
4/7/2020			0.0053		0.011	0.012	0.032
5/27/2020						0.017	0.037
6/24/2020	0.0084	0.018				0.023	
6/25/2020			0.0053	<0.005	0.013		0.043
7/15/2020						0.021	0.042
8/19/2020			0.0038 (J)	<0.005		0.026	
8/20/2020	0.0066	0.036					0.036
8/21/2020					0.013		
9/22/2020						0.014	0.039
9/29/2020			0.0041 (J)				
9/30/2020	0.0091			<0.005		0.014	
10/1/2020		0.019			0.012		0.04

Time Series

Constituent: Mercury (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.0002	<0.0002			
8/30/2016					<0.0002		
10/24/2016			<0.0002	<0.0002			
10/26/2016					<0.0002		
1/25/2017			7.7E-05 (J)	7.2E-05 (J)	7.3E-05 (J)		
4/10/2017			<0.0002	<0.0002	<0.0002		
6/19/2017			<0.0002		<0.0002		
6/20/2017				<0.0002			
10/24/2017			<0.0002	<0.0002	<0.0002		
4/9/2018				<0.0002			
4/10/2018			<0.0002		<0.0002		
10/16/2018			<0.0002	<0.0002	<0.0002		
8/20/2019			<0.0002	<0.0002	<0.0002		
12/16/2019						<0.0002	<0.0002
1/14/2020						<0.0002	<0.0002
2/11/2020						<0.0002	<0.0002
3/9/2020						<0.0002	<0.0002
5/27/2020						<0.0002	<0.0002
7/15/2020						<0.0002	<0.0002
8/19/2020			<0.0002	<0.0002		<0.0002	
8/20/2020	<0.0002	<0.0002					<0.0002
8/21/2020					<0.0002		
9/22/2020						<0.0002	<0.0002
10/1/2020							<0.0002

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.015	<0.015			
8/30/2016					<0.015		
10/24/2016			<0.015	<0.015			
10/26/2016					<0.015		
1/25/2017			<0.015	<0.015	<0.015		
4/10/2017			<0.015	<0.015	<0.015		
6/19/2017			<0.015		<0.015		
6/20/2017				<0.015			
10/24/2017			<0.015	<0.015	<0.015		
4/9/2018				<0.015			
4/10/2018			0.00096 (J)		<0.015		
10/16/2018			<0.015	<0.015	<0.015		
8/20/2019			<0.015	<0.015	<0.015		
12/16/2019						0.0018 (J)	0.025
1/14/2020						0.0012 (J)	0.032
2/11/2020						0.00093	0.021
3/9/2020						0.00067	0.013 (J)
5/27/2020						<0.015	0.048
6/24/2020	0.0051 (J)	<0.015				<0.015	
6/25/2020			<0.015	<0.015	<0.015		0.055
7/15/2020						<0.015	0.055
8/19/2020			<0.015	<0.015		<0.015	
8/20/2020	0.0076 (J)	0.0013 (J)					0.061
8/21/2020					<0.015		
9/22/2020						<0.015	0.053
9/29/2020			<0.015				
9/30/2020	0.0054 (J)			<0.015		<0.015	
10/1/2020		<0.015			<0.015		0.064

Time Series

Constituent: pH (SU) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			6.75 (o)	5.64			
8/30/2016					6.38		
10/24/2016			5.81	5.6			
10/26/2016					6.23		
1/25/2017			5.91	5.65	6.15		
4/10/2017			5.74	5.42	5.99		
6/19/2017			5.54		5.95		
6/20/2017				5.59			
10/24/2017			5.82	5.58	6.02		
4/9/2018				5.78			
4/10/2018			5.92		6.12		
10/16/2018			5.94	5.69	6.12		
3/26/2019			5.85				
3/27/2019				5.96	6.2		
8/20/2019			5.9	5.57	6.08		
10/7/2019			5.89	5.65			
10/8/2019					6.11		
12/16/2019						5.74	6.41
1/14/2020	6.07	6.12				5.91	6.62
2/11/2020						5.9	6.71
3/9/2020						5.97	6.32
4/6/2020				5.53			
4/7/2020			5.72		5.96	5.84	6.4
5/27/2020						5.69	6.3
6/24/2020	6.31	6.19				5.82	
6/25/2020			5.8	5.61	5.98		6.37
7/15/2020						5.58	6.36
8/19/2020			6.25	6.16		6.21	
8/20/2020	6.09	5.99					6.33
8/21/2020					5.89		
9/22/2020						5.77	6.29
9/29/2020			5.83				
9/30/2020	6.16			5.65		5.81	
10/1/2020		5.96			5.99		6.38

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			0.0043				
5/14/2009					0.0058 (o)		
5/15/2009				0.007 (o)			
12/5/2009			<0.005	<0.005	<0.005		
6/1/2010			<0.005	<0.005			
6/2/2010					<0.005		
11/11/2010			<0.005	<0.005	<0.005		
5/17/2011			<0.005	<0.005	<0.005		
11/8/2011			<0.005	<0.005	<0.005		
5/16/2012			<0.005	0.0024 (J)	<0.005		
5/14/2013			<0.005	<0.005	<0.005		
11/5/2013			<0.005	<0.005	<0.005		
6/9/2014			<0.005	<0.005	<0.005		
11/18/2014				<0.005	<0.005		
11/19/2014			<0.005				
4/14/2015			<0.005	<0.005	<0.005		
10/29/2015					<0.005		
11/4/2015			<0.005	<0.005			
6/22/2016			0.00025 (J)	0.0019			
6/23/2016					<0.005		
8/29/2016			0.0004 (J)	0.0019			
8/30/2016					<0.005		
10/24/2016			<0.005	0.0023 (J)			
10/26/2016					<0.005		
1/25/2017			<0.005	0.0015	<0.005		
4/10/2017			<0.005	0.0011 (J)	<0.005		
6/19/2017			0.00025 (J)		<0.005		
6/20/2017				0.0016			
10/24/2017			<0.005	0.0012 (J)	<0.005		
4/9/2018				0.0012 (J)			
4/10/2018			0.00074 (J)		<0.005		
10/16/2018			<0.005	0.0015	<0.005		
3/26/2019			<0.005				
3/27/2019				0.0015	<0.005		
8/20/2019			<0.005	0.0015 (J)	<0.005		
10/7/2019			<0.005	0.0016 (J)			
10/8/2019					<0.005		
12/16/2019						<0.005	<0.005
1/14/2020						<0.005	<0.005
2/11/2020						<0.005	<0.005
3/9/2020						<0.005	<0.005
4/6/2020				0.0017 (J)			
4/7/2020			<0.005		<0.005	<0.005	<0.005
5/27/2020						<0.005	<0.005
7/15/2020						<0.005	<0.005
8/19/2020			<0.005	0.0015 (J)		<0.005	
8/20/2020	<0.005	<0.005					<0.005
8/21/2020					<0.005		
9/22/2020						<0.005	<0.005
9/29/2020			<0.005				
9/30/2020	<0.005			0.0016 (J)		<0.005	
10/1/2020		<0.005			<0.005		<0.005

Time Series

Constituent: Silver (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			<0.001				
5/14/2009					<0.001		
5/15/2009				<0.001			
12/5/2009			0.00075	0.00043	0.001		
6/1/2010			<0.001	<0.001			
6/2/2010					<0.001		
11/11/2010			<0.001	<0.001	<0.001		
5/17/2011			<0.001	<0.001	<0.001		
11/8/2011			<0.001	<0.001	<0.001		
5/16/2012			<0.001	<0.001	<0.001		
5/14/2013			<0.001	<0.001	<0.001		
11/5/2013			<0.001	<0.001	<0.001		
6/9/2014			<0.001	<0.001	<0.001		
11/18/2014				<0.001	<0.001		
11/19/2014			<0.001				
4/14/2015			<0.001	<0.001	<0.001		
10/29/2015					<0.001		
11/4/2015			<0.001	<0.001			
6/22/2016			<0.001	<0.001			
6/23/2016					<0.001		
10/24/2016			<0.001	<0.001			
10/26/2016					<0.001		
4/10/2017			<0.001	<0.001	<0.001		
10/24/2017			<0.001	<0.001	<0.001		
4/9/2018				<0.001			
4/10/2018			<0.001		<0.001		
10/16/2018			<0.001	<0.001	<0.001		
3/26/2019			<0.001				
3/27/2019				<0.001	<0.001		
10/7/2019			0.00056 (J)	0.00031 (J)			
10/8/2019					0.00043 (J)		
4/6/2020				<0.001			
4/7/2020			0.00018 (J)		<0.001	<0.001	<0.001
9/29/2020			<0.001				
9/30/2020	<0.001			<0.001		<0.001	
10/1/2020		<0.001			<0.001		<0.001

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
5/5/2009			15.9				
5/14/2009					129		
5/15/2009				41.3 (o)			
12/5/2009			15.1	16.2	136		
6/1/2010			12.7	18.2			
6/2/2010					138		
11/11/2010			11.5	16.5	131.49		
5/17/2011			11.2	16	132		
11/8/2011			11.3	21	138		
5/16/2012			9.38	17.7	132		
5/14/2013			8.74	19.5	129		
11/5/2013			9.12	18.3	122		
6/9/2014			8.61	18.6	131		
4/14/2015			8.45	18.8	128		
10/29/2015					134		
11/4/2015			9.01	17.4			
6/22/2016			9.3	18			
6/23/2016					150		
8/29/2016			8.7	18			
8/30/2016					140		
10/24/2016			9.3	18			
10/26/2016					160		
1/25/2017			8.8	19	150		
4/10/2017			7.8	16	140		
6/19/2017			8.6		160		
6/20/2017				18			
10/24/2017			9.1	19	160		
4/9/2018				18			
4/10/2018			7.9		170		
10/16/2018			8.2	18	170		
3/26/2019			6.1				
3/27/2019				15	170		
10/7/2019			7.4	17			
10/8/2019					170		
12/16/2019						770	66
1/14/2020						930	68
2/11/2020						660	18
3/9/2020						630	49
4/6/2020				15			
4/7/2020			8.4		180	710	58
5/27/2020						720	65
6/24/2020	250	290				810	
6/25/2020			9.8	16	210		77
7/15/2020						820	78
8/19/2020						1000	
8/20/2020							69
9/22/2020						720	68
9/29/2020			8.4				
9/30/2020	230			15		650	
10/1/2020		270			210		64

Time Series

Constituent: Thallium (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			<0.001	<0.001			
8/30/2016					<0.001		
10/24/2016			<0.001	<0.001			
10/26/2016					<0.001		
1/25/2017			<0.001	<0.001	<0.001		
4/10/2017			<0.001	<0.001	<0.001		
6/19/2017			<0.001		<0.001		
6/20/2017				<0.001			
10/24/2017			<0.001	<0.001	<0.001		
4/9/2018				<0.001			
4/10/2018			<0.001		<0.001		
10/16/2018			<0.001	<0.001	<0.001		
8/20/2019			<0.001	<0.001	<0.001		
12/16/2019						0.00078 (J)	<0.001
1/14/2020						0.00027 (J)	<0.001
2/11/2020						0.00034	0.00028 (J)
3/9/2020						0.00035 (J)	0.00026 (J)
5/27/2020						<0.001	0.00026 (J)
7/15/2020						<0.001	<0.001
8/19/2020			<0.001	<0.001		<0.001	
8/20/2020	<0.001	<0.001					<0.001
8/21/2020					<0.001		
9/22/2020						<0.001	<0.001

Time Series

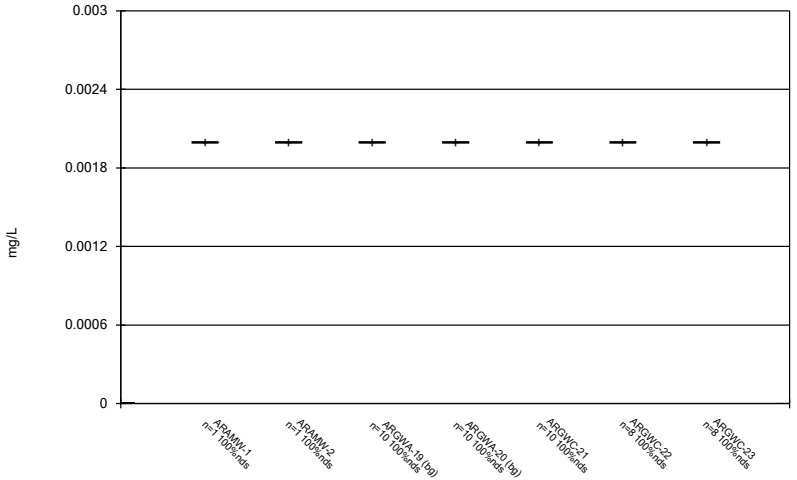
Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARAMW-1	ARAMW-2	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016			130	100			
8/30/2016					350		
10/24/2016			108	91			
10/26/2016					357		
1/25/2017			120	90	320		
4/10/2017			128 (D)	110	380		
6/19/2017			86		370		
6/20/2017				72			
10/24/2017			120	110	420		
4/9/2018				100			
4/10/2018			120		370		
10/16/2018			140	110	380		
3/26/2019			170				
3/27/2019				100	400		
10/7/2019			150	87			
10/8/2019					420		
12/16/2019						1300	320
1/14/2020						1400	340
2/11/2020						1300	110
3/9/2020						1200	210
4/6/2020				90			
4/7/2020			120		460	1300	290
5/27/2020						1300	320
7/15/2020						1400	310
8/19/2020						1400	
8/20/2020							310
9/22/2020						1300	310
9/29/2020			110				
9/30/2020	520			82		1200	
10/1/2020		530			500		290

FIGURE B.

Box & Whiskers Plot

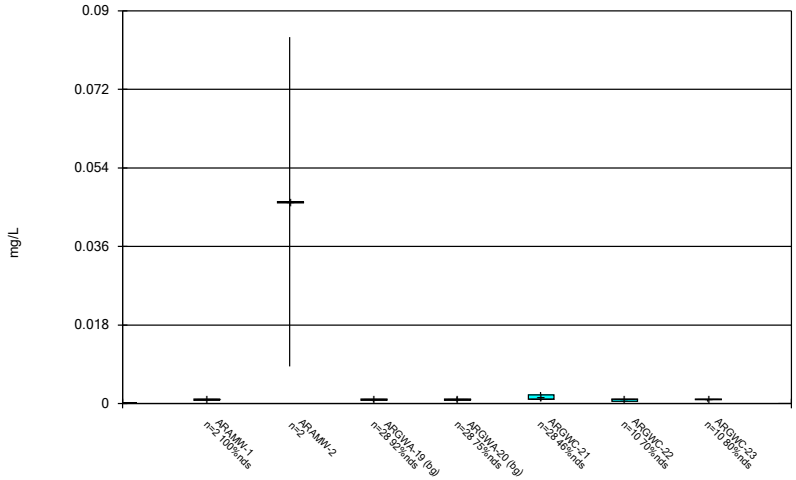


Constituent: Antimony Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Box & Whiskers Plot

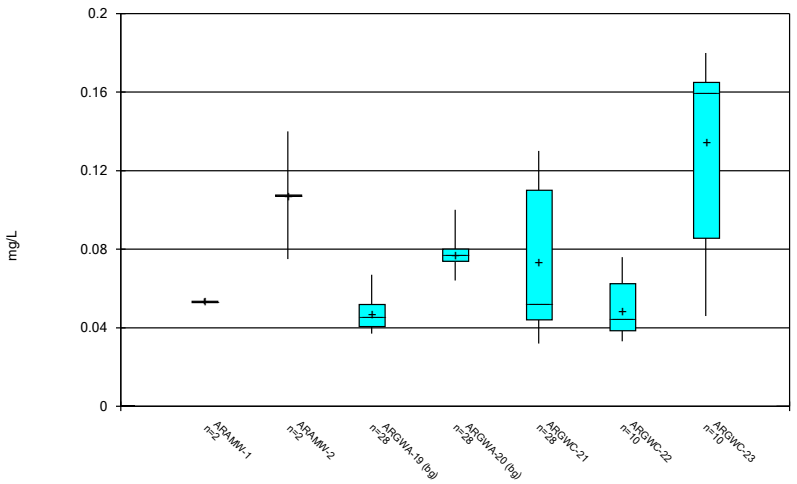


Constituent: Arsenic Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Box & Whiskers Plot

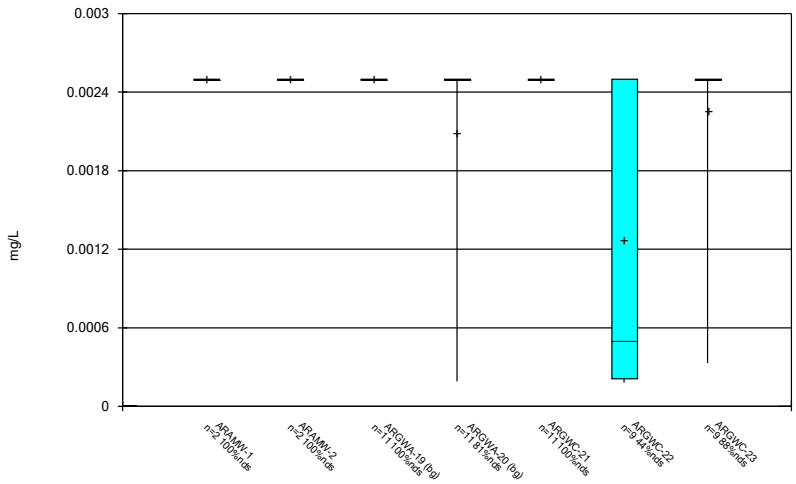


Constituent: Barium Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

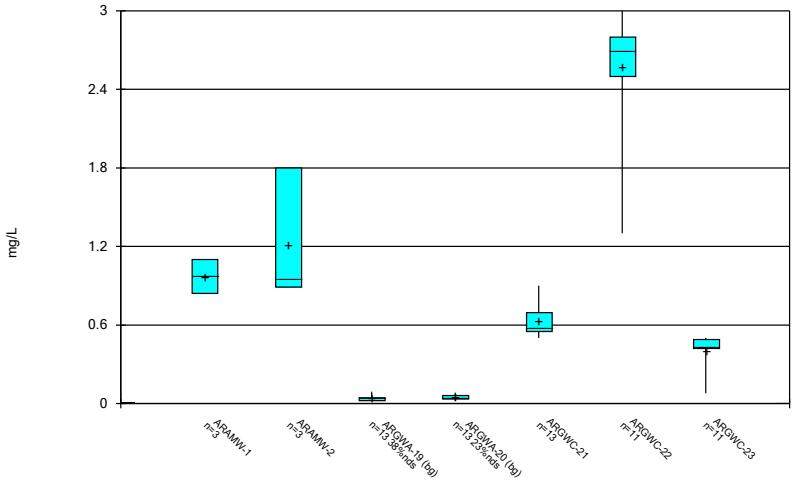
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Box & Whiskers Plot

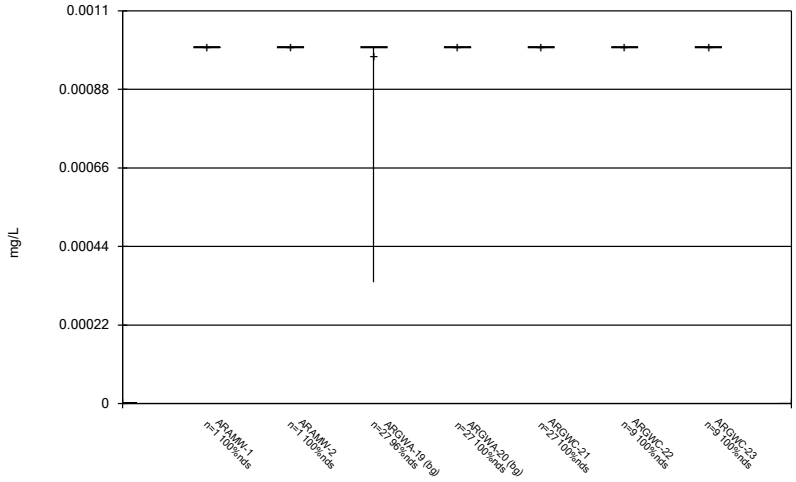


Constituent: Boron Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Box & Whiskers Plot

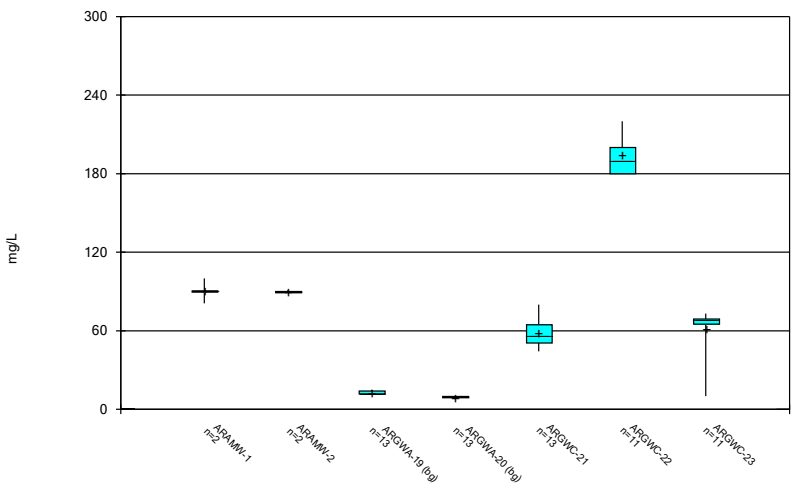


Constituent: Cadmium Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Box & Whiskers Plot

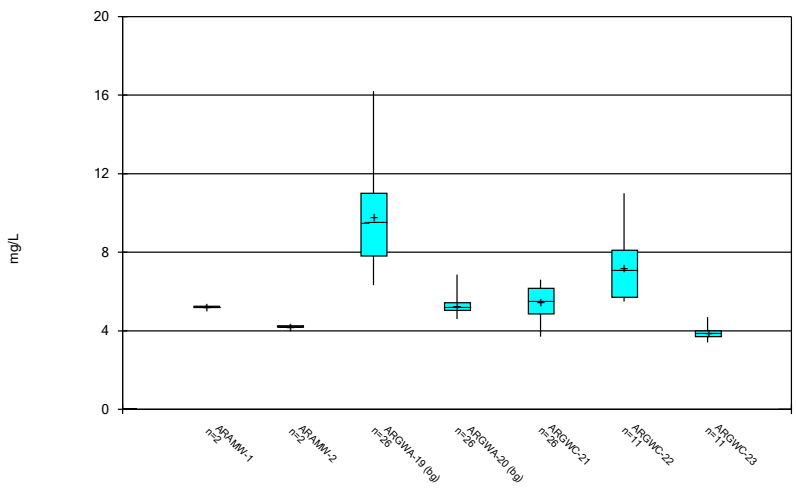


Constituent: Calcium Analysis Run 12/4/2020 12:47 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

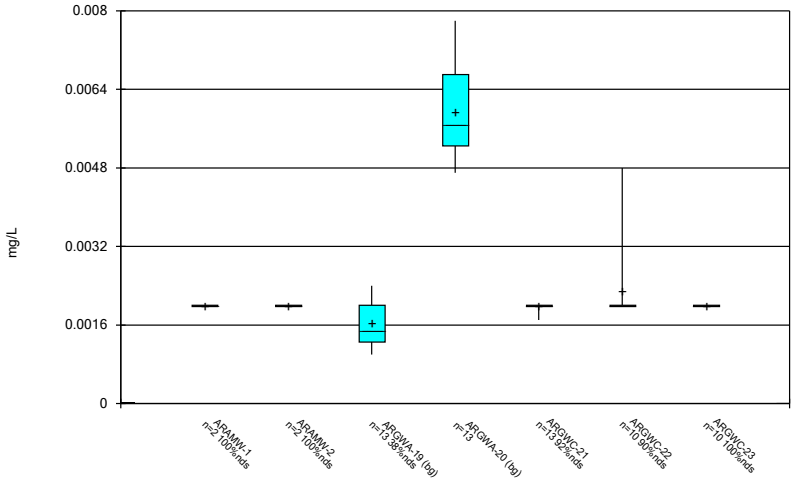
Box & Whiskers Plot



Constituent: Chloride Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

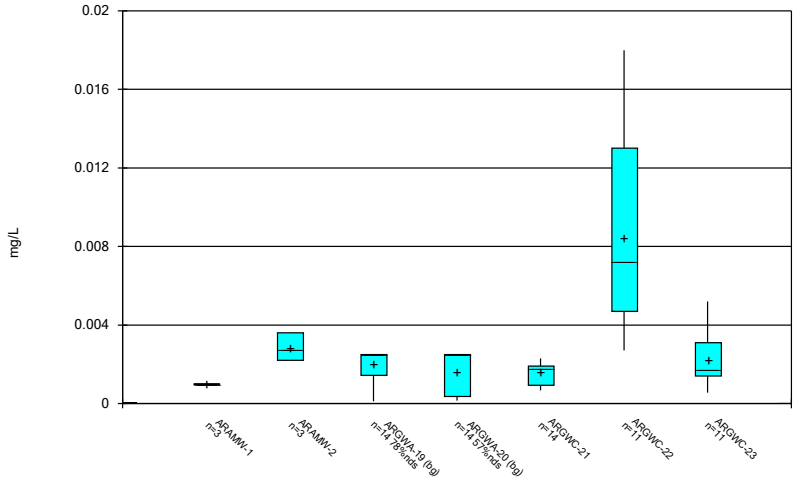
Box & Whiskers Plot



Constituent: Chromium Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

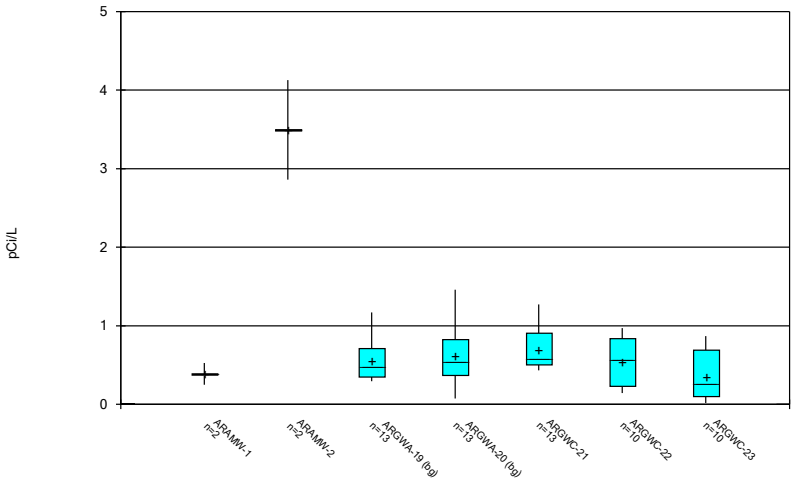
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

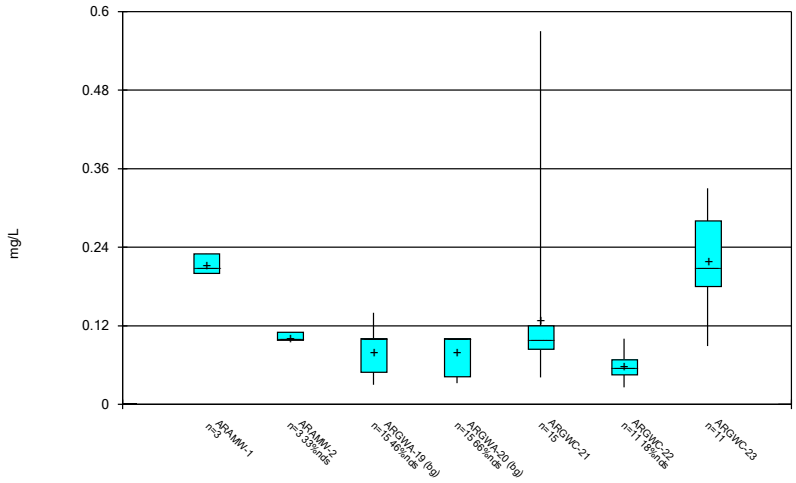
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

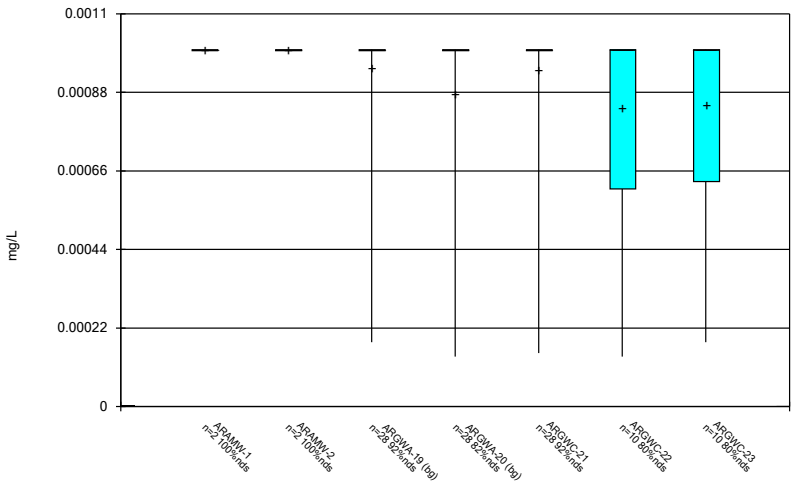
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

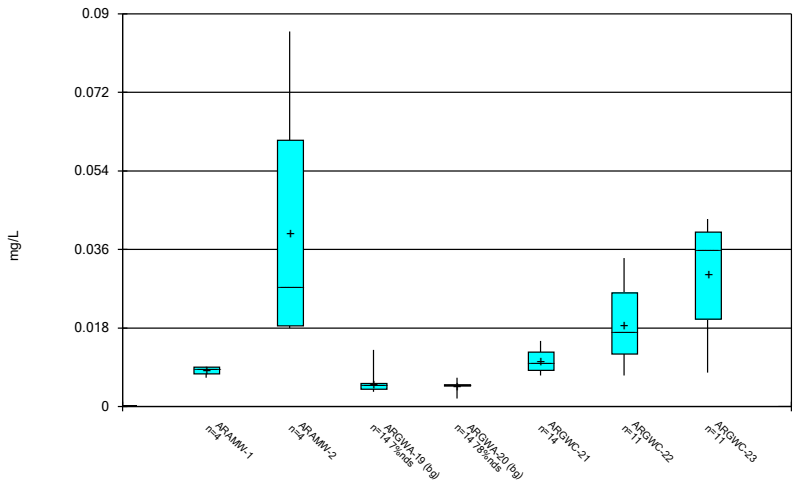
Box & Whiskers Plot



Constituent: Lead Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

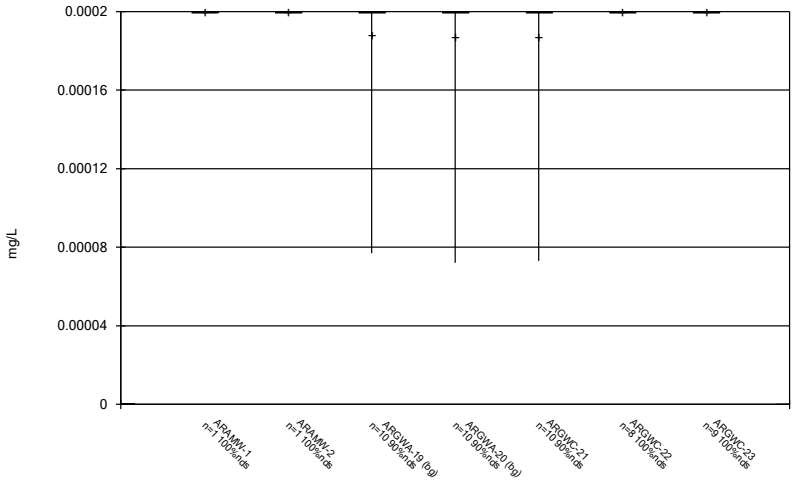
Box & Whiskers Plot



Constituent: Lithium Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

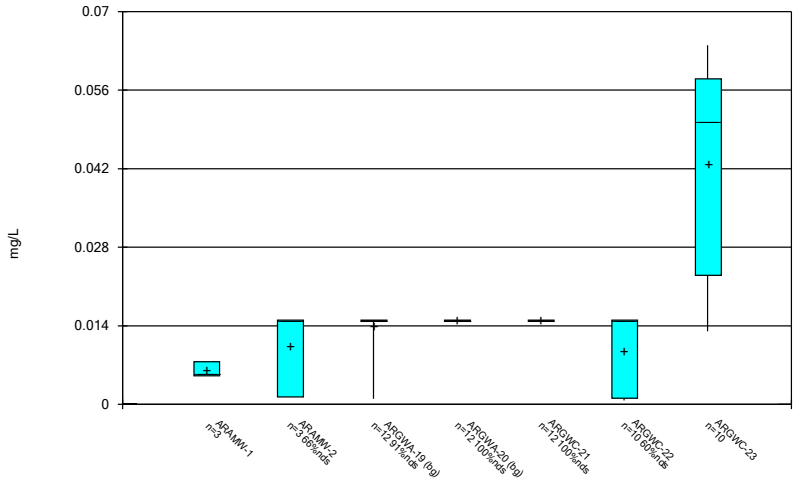
Box & Whiskers Plot



Constituent: Mercury Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

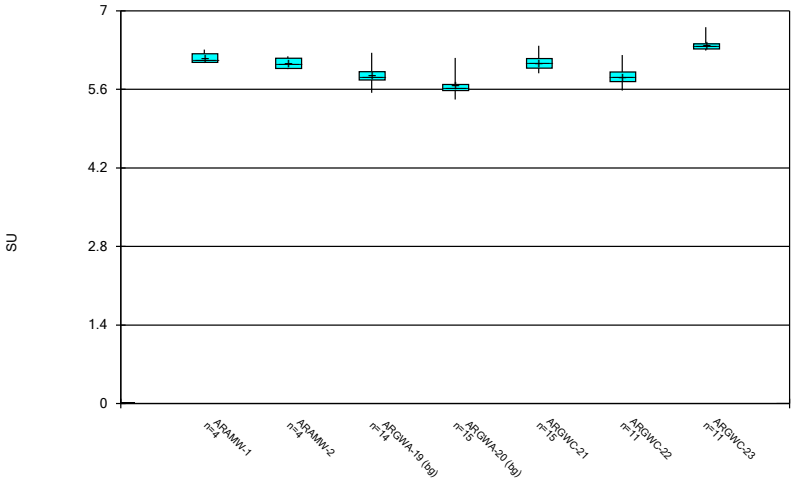
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

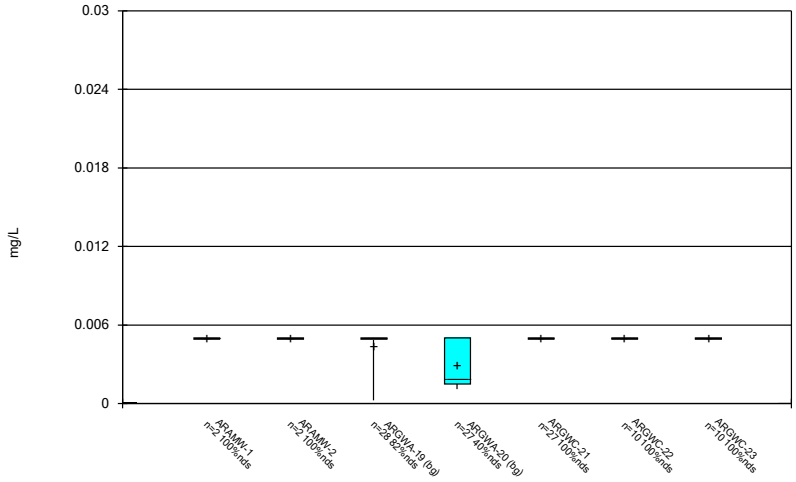
Box & Whiskers Plot



Constituent: pH Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

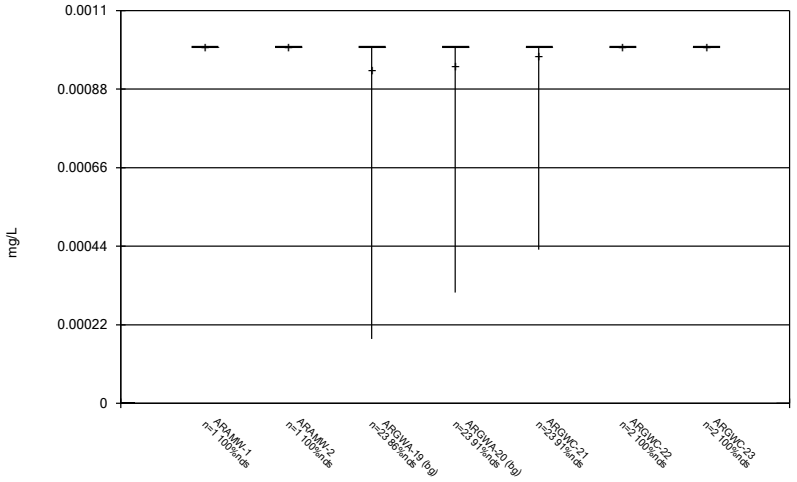
Box & Whiskers Plot



Constituent: Selenium Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

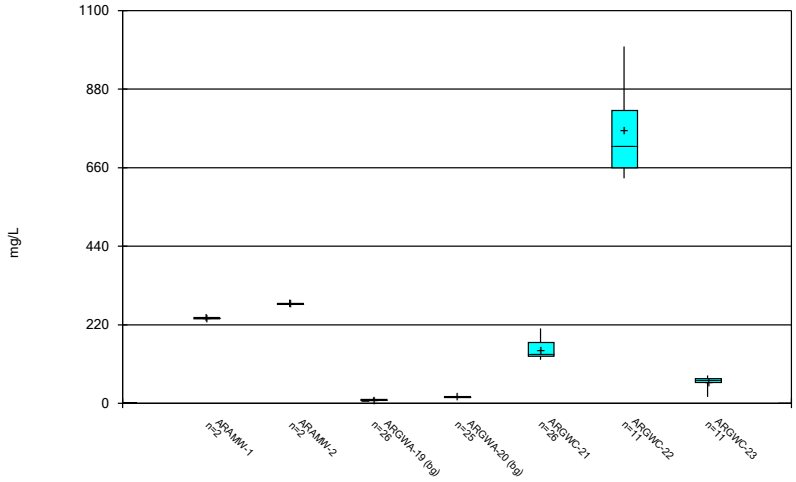
Box & Whiskers Plot



Constituent: Silver Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

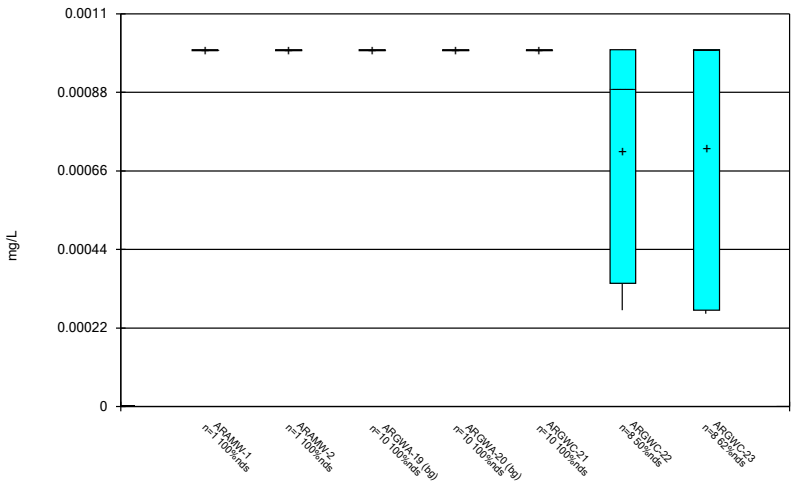
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Box & Whiskers Plot

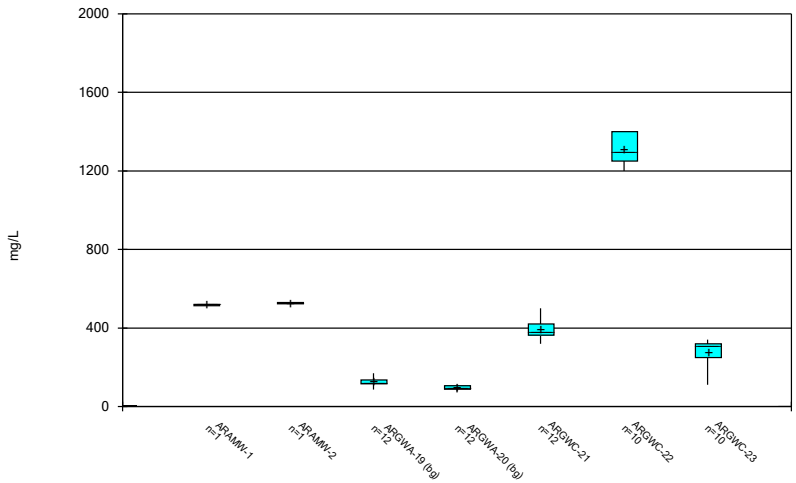


Constituent: Thallium Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 12/4/2020 12:48 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 2

FIGURE C.

Outlier Summary

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:49 PM

	ARGWA-19 pH (SU)	ARGWA-20 Selenium (mg/L)	ARGWC-21 Selenium (mg/L)	ARGWA-20 Sulfate (mg/L)
5/14/2009			0.0058 (o)	
5/15/2009		0.007 (o)		41.3 (o)
8/29/2016	6.75 (o)			

FIGURE D.

Appendix I - Interwell Prediction Limits - Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:31 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Barium (mg/L)	**ARGWC-23**	**0.1**	**n/a**	**10/1/2020**	**0.17**	**Yes**	**56**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000614**	**NP Inter (normality) 1 of 2**

Appendix I - Interwell Prediction Limits - All Results

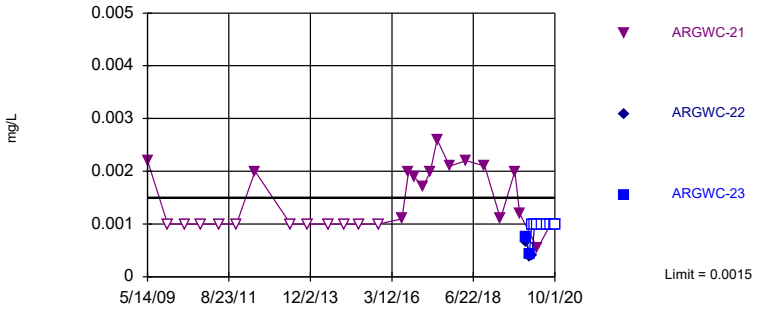
Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:31 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	ARGWC-21	0.0015	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	83.93	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-22	0.0015	n/a	9/30/2020	0.001ND	No	56	n/a	n/a	83.93	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-23	0.0015	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	83.93	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Barium (mg/L)	ARGWC-21	0.1	n/a	10/1/2020	0.051	No	56	n/a	n/a	0	n/a	n/a	0.000614	NP Inter (normality) 1 of 2
Barium (mg/L)	ARGWC-22	0.1	n/a	9/30/2020	0.033	No	56	n/a	n/a	0	n/a	n/a	0.000614	NP Inter (normality) 1 of 2
Barium (mg/L)	**ARGWC-23**	**0.1**	**n/a**	**10/1/2020**	**0.17**	**Yes**	**56**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000614**	**NP Inter (normality) 1 of 2**
Lead (mg/L)	ARGWC-21	0.001	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	87.5	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Lead (mg/L)	ARGWC-22	0.001	n/a	9/30/2020	0.001ND	No	56	n/a	n/a	87.5	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Lead (mg/L)	ARGWC-23	0.001	n/a	10/1/2020	0.001ND	No	56	n/a	n/a	87.5	n/a	n/a	0.000614	NP Inter (NDs) 1 of 2
Silver (mg/L)	ARGWC-21	0.001	n/a	10/1/2020	0.001ND	No	46	n/a	n/a	89.13	n/a	n/a	0.0009064	NP Inter (NDs) 1 of 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



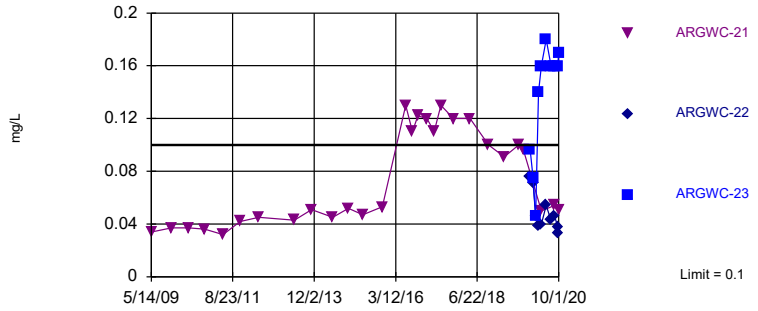
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 83.93% NDs. Annual per-constituent alpha = 0.003678. Individual comparison alpha = 0.000614 (1 of 2). Comparing 3 points to limit.

Constituent: Arsenic Analysis Run 12/4/2020 12:30 PM View: Appendix I
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Exceeds Limit: ARGWC-23

Prediction Limit

Interwell Non-parametric



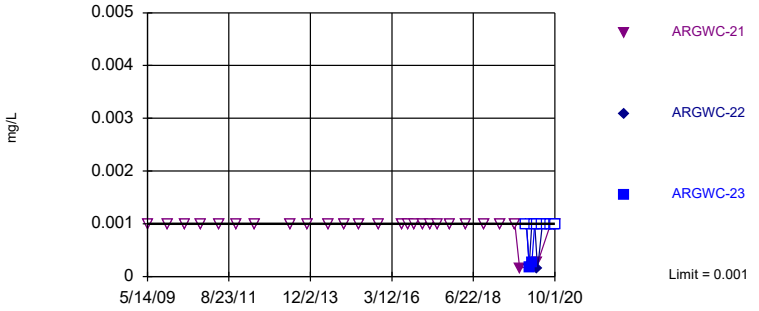
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. Annual per-constituent alpha = 0.003678. Individual comparison alpha = 0.000614 (1 of 2). Comparing 3 points to limit.

Constituent: Barium Analysis Run 12/4/2020 12:30 PM View: Appendix I
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



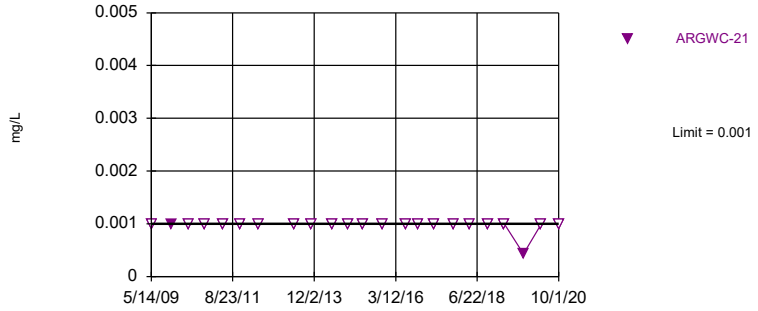
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 87.5% NDs. Annual per-constituent alpha = 0.003678. Individual comparison alpha = 0.000614 (1 of 2). Comparing 3 points to limit.

Constituent: Lead Analysis Run 12/4/2020 12:30 PM View: Appendix I
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. 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 46 background values. 89.13% NDs. Annual per-constituent alpha = 0.005426. Individual comparison alpha = 0.0009064 (1 of 2). Assumes 2 future values.

Constituent: Silver Analysis Run 12/4/2020 12:30 PM View: Appendix I
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 12/4/2020 12:31 PM View: Appendix I

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWC-21	ARGWA-20 (bg)	ARGWC-23	ARGWC-22
5/5/2009	<0.001				
5/14/2009		0.0022			
5/15/2009			0.0015		
12/5/2009	<0.001	<0.001	<0.001		
6/1/2010	<0.001		<0.001		
6/2/2010		<0.001			
11/11/2010	<0.001	<0.001	<0.001		
5/17/2011	<0.001	<0.001	<0.001		
11/8/2011	<0.001	<0.001	<0.001		
5/16/2012	<0.001	0.002 (J)	<0.001		
5/14/2013	<0.001	<0.001	<0.001		
11/5/2013	<0.001	<0.001	<0.001		
6/9/2014	<0.001	<0.001	<0.001		
11/18/2014		<0.001	<0.001		
11/19/2014	<0.001				
4/14/2015	<0.001	<0.001	<0.001		
10/29/2015		<0.001			
11/4/2015	<0.001		<0.001		
6/22/2016	<0.001		0.00084 (J)		
6/23/2016		0.0011 (J)			
8/29/2016	<0.001		0.00049 (J)		
8/30/2016		0.002			
10/24/2016	<0.001		<0.001		
10/26/2016		0.0019 (J)			
1/25/2017	<0.001	0.0017	<0.001		
4/10/2017	<0.001	0.002	0.00056 (J)		
6/19/2017	<0.001	0.0026			
6/20/2017			0.00068 (J)		
10/24/2017	<0.001	0.0021	<0.001		
4/9/2018			<0.001		
4/10/2018	<0.001	0.0022			
10/16/2018	<0.001	0.0021	<0.001		
3/26/2019	<0.001				
3/27/2019		0.0011 (J)	<0.001		
8/20/2019	0.00036 (J)	0.002	0.00047 (J)		
10/7/2019	<0.001		<0.001		
10/8/2019		0.0012 (J)			
12/16/2019				0.00075 (J)	0.00066 (J)
1/14/2020				0.00042 (J)	0.00038 (J)
2/11/2020				<0.001	0.0004 (J)
3/9/2020				<0.001	<0.001
4/6/2020			0.00042 (J)		
4/7/2020	0.0006 (J)	0.00054 (J)		<0.001	<0.001
5/27/2020				<0.001	<0.001
7/15/2020				<0.001	<0.001
8/19/2020	<0.001		<0.001		<0.001
8/20/2020				<0.001	
8/21/2020		<0.001			
9/22/2020				<0.001	<0.001
9/29/2020	<0.001				
9/30/2020			<0.001		<0.001
10/1/2020		<0.001		<0.001	

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/4/2020 12:31 PM View: Appendix I

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWC-21	ARGWA-20 (bg)	ARGWC-23	ARGWC-22
5/5/2009	0.057				
5/14/2009		0.034			
5/15/2009			0.1		
12/5/2009	0.05	0.037	0.079		
6/1/2010	0.037		0.077		
6/2/2010		0.037			
11/11/2010	0.039	0.036	0.072		
5/17/2011	0.037	0.032	0.064		
11/8/2011	0.045	0.042	0.07		
5/16/2012	0.0518	0.0451	0.0741		
5/14/2013	0.067	0.043	0.074		
11/5/2013	0.066	0.051	0.075		
6/9/2014	0.062	0.045	0.08		
11/18/2014		0.052	0.078		
11/19/2014	0.054				
4/14/2015	0.046	0.047	0.073		
10/29/2015		0.053			
11/4/2015	0.046		0.077		
6/22/2016	0.039		0.078		
6/23/2016		0.13			
8/29/2016	0.04		0.07		
8/30/2016		0.11			
10/24/2016	0.0444		0.0738		
10/26/2016		0.122			
1/25/2017	0.045	0.12	0.084		
4/10/2017	0.039	0.11	0.073		
6/19/2017	0.041	0.13			
6/20/2017			0.078		
10/24/2017	0.041	0.12	0.081		
4/9/2018			0.081		
4/10/2018	0.044	0.12			
10/16/2018	0.047	0.1	0.08		
3/26/2019	0.056				
3/27/2019		0.091	0.082		
8/20/2019	0.052	0.1	0.079		
10/7/2019	0.049		0.076		
10/8/2019		0.096			
12/16/2019				0.096	0.076
1/14/2020				0.075	0.071
2/11/2020				0.046	0.046
3/9/2020				0.14	0.039
4/6/2020			0.075		
4/7/2020	0.047	0.05		0.16	0.04
5/27/2020				0.18	0.054
7/15/2020				0.16	0.043
8/19/2020	0.044		0.085		0.046
8/20/2020				0.16	
8/21/2020		0.054			
9/22/2020				0.16	0.038
9/29/2020	0.04				
9/30/2020			0.08		0.033
10/1/2020		0.051		0.17	

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 12/4/2020 12:31 PM View: Appendix I

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWC-21	ARGWA-20 (bg)	ARGWC-23	ARGWC-22
5/5/2009	<0.001				
5/14/2009		<0.001			
5/15/2009			<0.001		
12/5/2009	<0.001	<0.001	<0.001		
6/1/2010	<0.001		<0.001		
6/2/2010		<0.001			
11/11/2010	<0.001	<0.001	<0.001		
5/17/2011	<0.001	<0.001	<0.001		
11/8/2011	<0.001	<0.001	<0.001		
5/16/2012	<0.001	<0.001	<0.001		
5/14/2013	<0.001	<0.001	<0.001		
11/5/2013	<0.001	<0.001	<0.001		
6/9/2014	<0.001	<0.001	<0.001		
11/18/2014		<0.001	<0.001		
11/19/2014	<0.001				
4/14/2015	<0.001	<0.001	<0.001		
10/29/2015		<0.001			
11/4/2015	<0.001		<0.001		
6/22/2016	<0.001		<0.001		
6/23/2016		<0.001			
8/29/2016	<0.001		<0.001		
8/30/2016		<0.001			
10/24/2016	<0.001		<0.001		
10/26/2016		<0.001			
1/25/2017	<0.001	<0.001	0.00037 (J)		
4/10/2017	<0.001	<0.001	<0.001		
6/19/2017	<0.001	<0.001			
6/20/2017			<0.001		
10/24/2017	<0.001	<0.001	<0.001		
4/9/2018			<0.001		
4/10/2018	<0.001	<0.001			
10/16/2018	<0.001	<0.001	<0.001		
3/26/2019	<0.001				
3/27/2019		<0.001	<0.001		
8/20/2019	<0.001	<0.001	<0.001		
10/7/2019	0.00018 (J)		0.00014 (J)		
10/8/2019		0.00015 (J)			
12/16/2019				<0.001	<0.001
1/14/2020				0.00018 (J)	0.00022 (J)
2/11/2020				0.00026 (J)	<0.001
3/9/2020				<0.001	<0.001
4/6/2020			0.00033 (J)		
4/7/2020	0.00037 (J)	0.00026 (J)		<0.001	0.00014 (J)
5/27/2020				<0.001	<0.001
7/15/2020				<0.001	<0.001
8/19/2020	<0.001		0.00039 (J)		<0.001
8/20/2020				<0.001	
8/21/2020		<0.001			
9/22/2020				<0.001	<0.001
9/29/2020	<0.001				
9/30/2020			0.00022 (J)		<0.001
10/1/2020		<0.001		<0.001	

Prediction Limit

Constituent: Silver (mg/L) Analysis Run 12/4/2020 12:31 PM View: Appendix I

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWC-21	ARGWA-20 (bg)
5/5/2009	<0.001		
5/14/2009		<0.001	
5/15/2009			<0.001
12/5/2009	0.00075	0.001	0.00043
6/1/2010	<0.001		<0.001
6/2/2010		<0.001	
11/11/2010	<0.001	<0.001	<0.001
5/17/2011	<0.001	<0.001	<0.001
11/8/2011	<0.001	<0.001	<0.001
5/16/2012	<0.001	<0.001	<0.001
5/14/2013	<0.001	<0.001	<0.001
11/5/2013	<0.001	<0.001	<0.001
6/9/2014	<0.001	<0.001	<0.001
11/18/2014		<0.001	<0.001
11/19/2014	<0.001		
4/14/2015	<0.001	<0.001	<0.001
10/29/2015		<0.001	
11/4/2015	<0.001		<0.001
6/22/2016	<0.001		<0.001
6/23/2016		<0.001	
10/24/2016	<0.001		<0.001
10/26/2016		<0.001	
4/10/2017	<0.001	<0.001	<0.001
10/24/2017	<0.001	<0.001	<0.001
4/9/2018			<0.001
4/10/2018	<0.001	<0.001	
10/16/2018	<0.001	<0.001	<0.001
3/26/2019	<0.001		
3/27/2019		<0.001	<0.001
10/7/2019	0.00056 (J)		0.00031 (J)
10/8/2019		0.00043 (J)	
4/6/2020			<0.001
4/7/2020	0.00018 (J)	<0.001	
9/29/2020	<0.001		
9/30/2020			<0.001
10/1/2020		<0.001	

FIGURE E.

Appendix III - Interwell Prediction Limits - Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:47 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	ARGWC-21	0.0814	n/a	10/1/2020	0.9	Yes	26	0.04196	0.0216	30.77	Kaplan-Meier	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	ARGWC-22	0.0814	n/a	9/30/2020	2.9	Yes	26	0.04196	0.0216	30.77	Kaplan-Meier	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	ARGWC-23	0.0814	n/a	10/1/2020	0.49	Yes	26	0.04196	0.0216	30.77	Kaplan-Meier	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	ARGWC-21	14.75	n/a	10/1/2020	79	Yes	26	10.98	2.064	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	ARGWC-22	14.75	n/a	9/30/2020	200	Yes	26	10.98	2.064	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	ARGWC-23	14.75	n/a	10/1/2020	73	Yes	26	10.98	2.064	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	ARGWC-23	0.14	n/a	10/1/2020	0.32	Yes	30	n/a	n/a	56.67	n/a	n/a	0.00197	NP Inter (NDs) 1 of 2
pH (SU)	ARGWC-23	6.099	5.418	10/1/2020	6.38	Yes	29	5.759	0.1888	0	None	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	ARGWC-21	21	n/a	10/1/2020	210	Yes	51	n/a	n/a	0	n/a	n/a	0.000725	NP Inter (normality) 1 of 2
Sulfate (mg/L)	ARGWC-22	21	n/a	9/30/2020	650	Yes	51	n/a	n/a	0	n/a	n/a	0.000725	NP Inter (normality) 1 of 2
Sulfate (mg/L)	ARGWC-23	21	n/a	10/1/2020	64	Yes	51	n/a	n/a	0	n/a	n/a	0.000725	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-21	152.3	n/a	10/1/2020	500	Yes	24	110.2	22.86	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-22	152.3	n/a	9/30/2020	1200	Yes	24	110.2	22.86	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-23	152.3	n/a	10/1/2020	290	Yes	24	110.2	22.86	0	None	No	0.002505	Param Inter 1 of 2

Appendix III - Interwell Prediction Limits - All Results

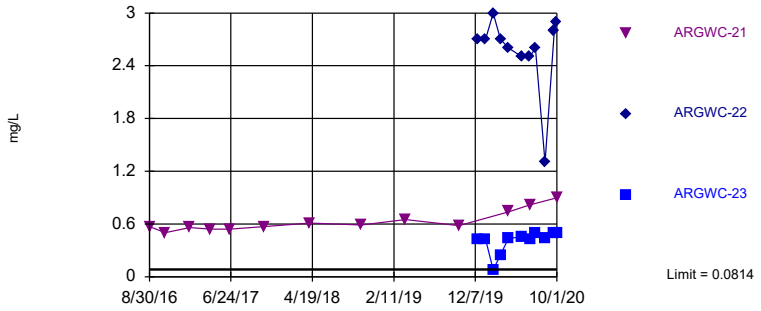
Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:47 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	**ARGWC-21**	**0.0814**	**n/a**	**10/1/2020**	**0.9**	**Yes**	**26**	**0.04196**	**0.0216**	**30.77**	**Kaplan-Meier**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**ARGWC-22**	**0.0814**	**n/a**	**9/30/2020**	**2.9**	**Yes**	**26**	**0.04196**	**0.0216**	**30.77**	**Kaplan-Meier**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**ARGWC-23**	**0.0814**	**n/a**	**10/1/2020**	**0.49**	**Yes**	**26**	**0.04196**	**0.0216**	**30.77**	**Kaplan-Meier**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**ARGWC-21**	**14.75**	**n/a**	**10/1/2020**	**79**	**Yes**	**26**	**10.98**	**2.064**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**ARGWC-22**	**14.75**	**n/a**	**9/30/2020**	**200**	**Yes**	**26**	**10.98**	**2.064**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**ARGWC-23**	**14.75**	**n/a**	**10/1/2020**	**73**	**Yes**	**26**	**10.98**	**2.064**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	ARGWC-21	16.2	n/a	10/1/2020	4.3	No	52	n/a	n/a	0	n/a	n/a	0.0007028	NP Inter (normality) 1 of 2
Chloride (mg/L)	ARGWC-22	16.2	n/a	9/30/2020	8	No	52	n/a	n/a	0	n/a	n/a	0.0007028	NP Inter (normality) 1 of 2
Chloride (mg/L)	ARGWC-23	16.2	n/a	10/1/2020	3.8	No	52	n/a	n/a	0	n/a	n/a	0.0007028	NP Inter (normality) 1 of 2
Fluoride (mg/L)	ARGWC-21	0.14	n/a	10/1/2020	0.098J	No	30	n/a	n/a	56.67	n/a	n/a	0.00197	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-22	0.14	n/a	9/30/2020	0.045J	No	30	n/a	n/a	56.67	n/a	n/a	0.00197	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	**ARGWC-23**	**0.14**	**n/a**	**10/1/2020**	**0.32**	**Yes**	**30**	**n/a**	**n/a**	**56.67**	**n/a**	**n/a**	**0.00197**	**NP Inter (NDs) 1 of 2**
pH (SU)	ARGWC-21	6.099	5.418	10/1/2020	5.99	No	29	5.759	0.1888	0	None	No	0.001253	Param Inter 1 of 2
pH (SU)	ARGWC-22	6.099	5.418	9/30/2020	5.81	No	29	5.759	0.1888	0	None	No	0.001253	Param Inter 1 of 2
pH (SU)	**ARGWC-23**	**6.099**	**5.418**	**10/1/2020**	**6.38**	**Yes**	**29**	**5.759**	**0.1888**	**0**	**None**	**No**	**0.001253**	**Param Inter 1 of 2**
Sulfate (mg/L)	**ARGWC-21**	**21**	**n/a**	**10/1/2020**	**210**	**Yes**	**51**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000725**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**ARGWC-22**	**21**	**n/a**	**9/30/2020**	**650**	**Yes**	**51**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000725**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**ARGWC-23**	**21**	**n/a**	**10/1/2020**	**64**	**Yes**	**51**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.000725**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**ARGWC-21**	**152.3**	**n/a**	**10/1/2020**	**500**	**Yes**	**24**	**110.2**	**22.86**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**ARGWC-22**	**152.3**	**n/a**	**9/30/2020**	**1200**	**Yes**	**24**	**110.2**	**22.86**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**ARGWC-23**	**152.3**	**n/a**	**10/1/2020**	**290**	**Yes**	**24**	**110.2**	**22.86**	**0**	**None**	**No**	**0.002505**	**Param Inter 1 of 2**

Exceeds Limit: ARGWC-21, ARGWC-22, ARGWC-23

Prediction Limit

Interwell Parametric



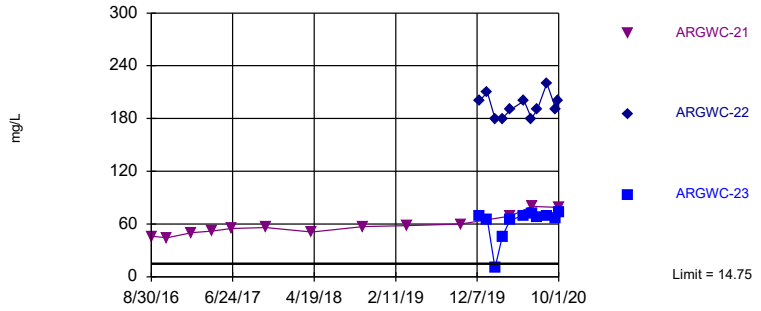
Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.04196, Std. Dev.=0.0216, n=26, 30.77% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8925, critical = 0.891. Kappa = 1.826 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Boron Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Exceeds Limit: ARGWC-21, ARGWC-22, ARGWC-23

Prediction Limit

Interwell Parametric



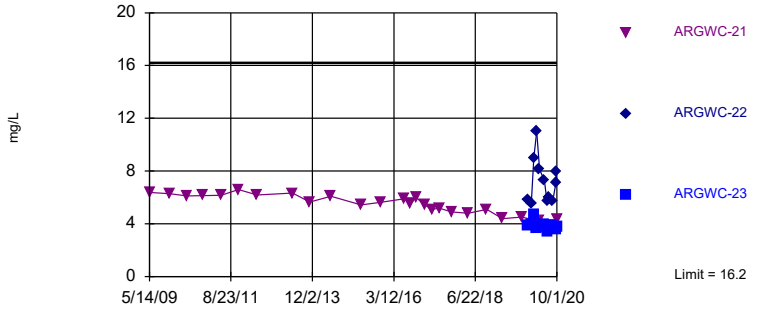
Background Data Summary: Mean=10.98, Std. Dev.=2.064, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.933, critical = 0.891. Kappa = 1.826 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Calcium Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 52 background values. Annual per-constituent alpha = 0.004209. Individual comparison alpha = 0.0007028 (1 of 2). Comparing 3 points to limit.

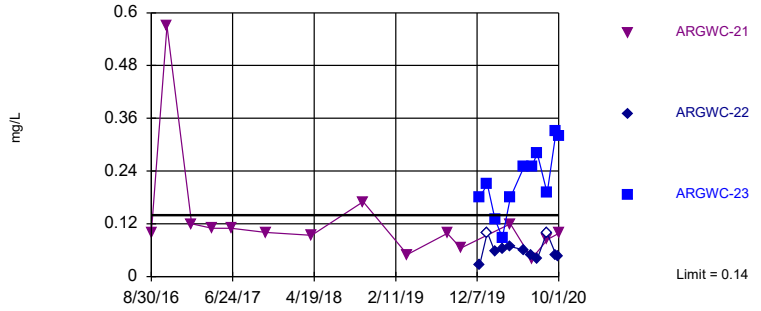
Constituent: Chloride Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Hollow symbols indicate censored values.

Exceeds Limit: ARGWC-23

Prediction Limit

Interwell Non-parametric



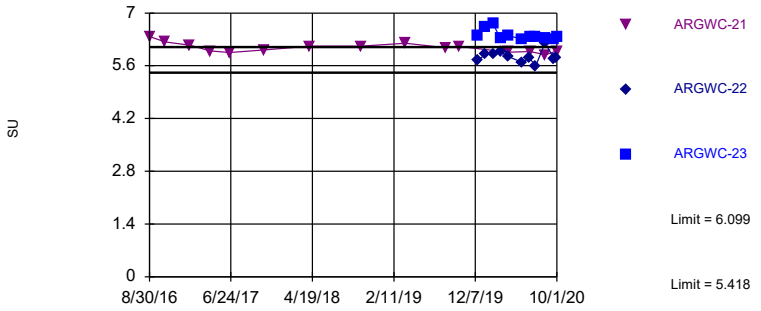
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 56.67% NDs. Annual per-constituent alpha = 0.01176. Individual comparison alpha = 0.00197 (1 of 2). Comparing 3 points to limit.

Constituent: Fluoride Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Exceeds Limits: ARGWC-23

Prediction Limit

Interwell Parametric



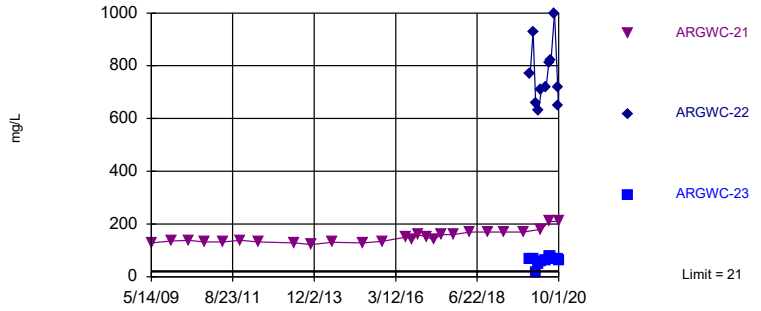
Background Data Summary: Mean=5.759, Std. Dev.=0.1888, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9564, critical = 0.898. Kappa = 1.802 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001253. Comparing 3 points to limit.

Constituent: pH Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Exceeds Limit: ARGWC-21, ARGWC-22, ARGWC-23

Prediction Limit

Interwell Non-parametric



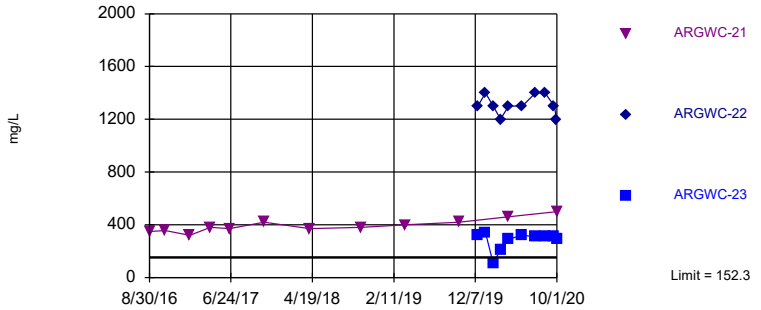
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 51 background values. Annual per-constituent alpha = 0.004342. Individual comparison alpha = 0.000725 (1 of 2). Comparing 3 points to limit.

Constituent: Sulfate Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Exceeds Limit: ARGWC-21, ARGWC-22, ARGWC-23

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=110.2, Std. Dev.=22.86, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9569, critical = 0.884. Kappa = 1.845 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Total Dissolved Solids Analysis Run 12/3/2020 8:45 AM View: Appendix III - Interwell
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016	0.024 (J)	<0.08			
8/30/2016			0.57		
10/24/2016	0.0339 (J)	0.0194 (J)			
10/26/2016			0.502		
1/25/2017	0.048 (J)	0.026 (J)	0.56		
4/10/2017	0.022 (J)	<0.08	0.54		
6/19/2017	<0.08		0.54		
6/20/2017		0.032 (J)			
10/24/2017	0.021 (J)	0.054	0.57		
4/9/2018		0.06			
4/10/2018	0.022 (J)		0.61		
10/16/2018	<0.08	0.036 (J)	0.59		
3/26/2019	<0.08				
3/27/2019		0.046 (J)	0.65		
10/7/2019	<0.08	<0.08			
10/8/2019			0.58		
12/16/2019				2.7	0.42
1/14/2020				2.7	0.43
2/11/2020				3	0.079 (J)
3/9/2020				2.7	0.25
4/6/2020		0.063 (J)			
4/7/2020	0.072 (J)		0.74	2.6	0.44
5/27/2020				2.5	0.45
6/24/2020				2.5	
6/25/2020	0.091	0.081	0.82		0.42
7/15/2020				2.6	0.49
8/19/2020				1.3	
8/20/2020					0.44
9/22/2020				2.8	0.5
9/29/2020	<0.08				
9/30/2020		0.083		2.9	
10/1/2020			0.9		0.49

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016	11	8.3			
8/30/2016			46		
10/24/2016	11.5	7.66			
10/26/2016			44.3		
1/25/2017	13	9.4	50		
4/10/2017	11	8.6	52		
6/19/2017	12		55		
6/20/2017		9.4			
10/24/2017	12	9.9	56		
4/9/2018		9.9			
4/10/2018	12		51		
10/16/2018	14	9.8	57		
3/26/2019	15				
3/27/2019		9.2	58		
10/7/2019	14	8.9			
10/8/2019			60		
12/16/2019				200	69
1/14/2020				210	65
2/11/2020				180	10
3/9/2020				180	46
4/6/2020		9.5			
4/7/2020	14		69	190	65
5/27/2020				200	69
6/24/2020				180	
6/25/2020	14	9.6	80		72
7/15/2020				190	68
8/19/2020				220	
8/20/2020					69
9/22/2020				190	66
9/29/2020	12				
9/30/2020		9.9		200	
10/1/2020			79		73

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWC-21	ARGWA-20 (bg)	ARGWC-22	ARGWC-23
5/5/2009	11.1				
5/14/2009		6.38			
5/15/2009			6.86		
12/5/2009	9.46	6.28	5.06		
6/1/2010	6.32		5.47		
6/2/2010		6.1			
11/11/2010	7.16	6.1461	5.26		
5/17/2011	6.84	6.17	4.8		
11/8/2011	9.13	6.6	5.62		
5/16/2012	10.8	6.18	5.1		
5/14/2013	16.2	6.32	5.25		
11/5/2013	14.8	5.65	5.19		
6/9/2014	13.6	6.08	5.55		
4/14/2015	10.4	5.43	5.39		
10/29/2015		5.62			
11/4/2015	9.19		5.38		
6/22/2016	8.4		5.7		
6/23/2016		5.9			
8/29/2016	8.4		5.3		
8/30/2016		5.5			
10/24/2016	9.6		5.4		
10/26/2016		6			
1/25/2017	8.7	5.4	5.1		
4/10/2017	8	5.1	4.9		
6/19/2017	7.6	5.2			
6/20/2017			5		
10/24/2017	7.2	4.9	4.6		
4/9/2018			4.7		
4/10/2018	7.2	4.8			
10/16/2018	10	5.1	5.3		
3/26/2019	12				
3/27/2019		4.4	4.6		
10/7/2019	11		5.2		
10/8/2019		4.5			
12/16/2019				5.8	3.9
1/14/2020				5.5	4
2/11/2020				9	4.7
3/9/2020				11	3.7
4/6/2020			5.2		
4/7/2020	11	4.2		8.1	3.8
5/27/2020				7.3	4
6/24/2020				5.7	
6/25/2020	11	3.7	5.1		3.4
7/15/2020				6	3.9
8/19/2020				5.7	
8/20/2020					3.9
9/22/2020				7.1	3.6
9/29/2020	10				
9/30/2020			5.6	8	
10/1/2020		4.3			3.8

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-22	ARGWC-23
8/29/2016	<0.1	<0.1			
8/30/2016			0.099 (J)		
10/24/2016	0.07 (J)	0.04 (J)			
10/26/2016			0.57		
1/25/2017	<0.1	<0.1	0.12 (J)		
4/10/2017	<0.1	<0.1	0.11 (J)		
6/19/2017	<0.1		0.11 (J)		
6/20/2017		<0.1			
10/24/2017	<0.1	<0.1	0.1 (J)		
4/9/2018		<0.1			
4/10/2018	<0.1		0.094 (J)		
10/16/2018	0.083 (J)	<0.1	0.17 (J)		
3/26/2019	0.041 (J)				
3/27/2019		<0.1	0.05 (J)		
8/20/2019	0.045 (J)	0.042 (J)	0.098 (J)		
10/7/2019	0.049 (J)	0.036 (J)			
10/8/2019			0.065 (J)		
12/16/2019				0.026 (J)	0.18 (J)
1/14/2020				<0.1	0.21
2/11/2020				0.056	0.13
3/9/2020				0.064 (J)	0.089 (J)
4/6/2020		0.059 (J)			
4/7/2020	0.14		0.12	0.068 (J)	0.18
5/27/2020				0.06 (J)	0.25
6/24/2020				0.048 (J)	
6/25/2020	0.03 (J)	<0.1	0.041 (J)		0.25
7/15/2020				0.04 (J)	0.28
8/19/2020	<0.1	<0.1		<0.1	
8/20/2020					0.19
8/21/2020			0.084 (J)		
9/22/2020				0.049 (J)	0.33
9/29/2020	0.051 (J)				
9/30/2020		0.032 (J)		0.045 (J)	
10/1/2020			0.098 (J)		0.32

Prediction Limit

Constituent: pH (SU) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-20 (bg)	ARGWC-21	ARGWA-19 (bg)	ARGWC-22	ARGWC-23
8/29/2016	5.64		6.75 (o)		
8/30/2016		6.38			
10/24/2016	5.6		5.81		
10/26/2016		6.23			
1/25/2017	5.65	6.15	5.91		
4/10/2017	5.42	5.99	5.74		
6/19/2017		5.95	5.54		
6/20/2017	5.59				
10/24/2017	5.58	6.02	5.82		
4/9/2018	5.78				
4/10/2018		6.12	5.92		
10/16/2018	5.69	6.12	5.94		
3/26/2019			5.85		
3/27/2019	5.96	6.2			
8/20/2019	5.57	6.08	5.9		
10/7/2019	5.65		5.89		
10/8/2019		6.11			
12/16/2019				5.74	6.41
1/14/2020				5.91	6.62
2/11/2020				5.9	6.71
3/9/2020				5.97	6.32
4/6/2020	5.53				
4/7/2020		5.96	5.72	5.84	6.4
5/27/2020				5.69	6.3
6/24/2020				5.82	
6/25/2020	5.61	5.98	5.8		6.37
7/15/2020				5.58	6.36
8/19/2020	6.16		6.25	6.21	
8/20/2020					6.33
8/21/2020		5.89			
9/22/2020				5.77	6.29
9/29/2020			5.83		
9/30/2020	5.65			5.81	
10/1/2020		5.99			6.38

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWC-21	ARGWA-20 (bg)	ARGWC-22	ARGWC-23
5/5/2009	15.9				
5/14/2009		129			
5/15/2009			41.3 (o)		
12/5/2009	15.1	136	16.2		
6/1/2010	12.7		18.2		
6/2/2010		138			
11/11/2010	11.5	131.49	16.5		
5/17/2011	11.2	132	16		
11/8/2011	11.3	138	21		
5/16/2012	9.38	132	17.7		
5/14/2013	8.74	129	19.5		
11/5/2013	9.12	122	18.3		
6/9/2014	8.61	131	18.6		
4/14/2015	8.45	128	18.8		
10/29/2015		134			
11/4/2015	9.01		17.4		
6/22/2016	9.3		18		
6/23/2016		150			
8/29/2016	8.7		18		
8/30/2016		140			
10/24/2016	9.3		18		
10/26/2016		160			
1/25/2017	8.8	150	19		
4/10/2017	7.8	140	16		
6/19/2017	8.6	160			
6/20/2017			18		
10/24/2017	9.1	160	19		
4/9/2018			18		
4/10/2018	7.9	170			
10/16/2018	8.2	170	18		
3/26/2019	6.1				
3/27/2019		170	15		
10/7/2019	7.4		17		
10/8/2019		170			
12/16/2019				770	66
1/14/2020				930	68
2/11/2020				660	18
3/9/2020				630	49
4/6/2020			15		
4/7/2020	8.4	180		710	58
5/27/2020				720	65
6/24/2020				810	
6/25/2020	9.8	210	16		77
7/15/2020				820	78
8/19/2020				1000	
8/20/2020					69
9/22/2020				720	68
9/29/2020	8.4				
9/30/2020			15	650	
10/1/2020		210			64

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/3/2020 8:47 AM View: Appendix III - Interwell

Plant Arkwright Client: Southern Company Data: Arkwright No 2

	ARGWA-19 (bg)	ARGWA-20 (bg)	ARGWC-21	ARGWC-23	ARGWC-22
8/29/2016	130	100			
8/30/2016			350		
10/24/2016	108	91			
10/26/2016			357		
1/25/2017	120	90	320		
4/10/2017	128 (D)	110	380		
6/19/2017	86		370		
6/20/2017		72			
10/24/2017	120	110	420		
4/9/2018		100			
4/10/2018	120		370		
10/16/2018	140	110	380		
3/26/2019	170				
3/27/2019		100	400		
10/7/2019	150	87			
10/8/2019			420		
12/16/2019				320	1300
1/14/2020				340	1400
2/11/2020				110	1300
3/9/2020				210	1200
4/6/2020		90			
4/7/2020	120		460	290	1300
5/27/2020				320	1300
7/15/2020				310	1400
8/19/2020					1400
8/20/2020				310	
9/22/2020				310	1300
9/29/2020	110				
9/30/2020		82			1200
10/1/2020			500	290	

FIGURE F.

Trend Tests - Prediction Limit Exceedances - Signifiicant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:58 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**ARGWA-20 (bg)**	**0.01103**	**49**	**43**	**Yes**	**13**	**23.08**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**ARGWC-21**	**0.0653**	**56**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**ARGWC-21**	**7.356**	**68**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**ARGWA-19 (bg)**	**-0.4042**	**-195**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**ARGWC-21**	**5.193**	**222**	**118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids (mg/L)	**ARGWC-21**	**32.77**	**49**	**38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**

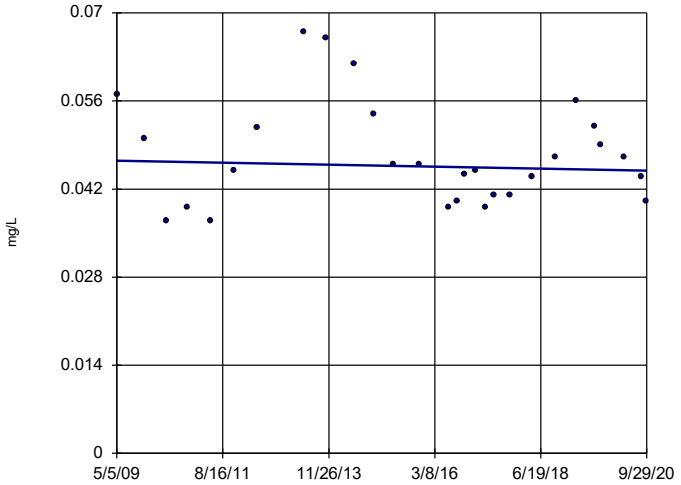
Trend Tests - Prediction Limit Exceedances - All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 8:58 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Barium (mg/L)	ARGWA-19 (bg)	-0.0001383	-20	-131	No	28	0	n/a	n/a	0.01	NP
Barium (mg/L)	ARGWA-20 (bg)	0.0006017	96	131	No	28	0	n/a	n/a	0.01	NP
Barium (mg/L)	ARGWC-23	0.09419	25	30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	ARGWA-19 (bg)	0.006347	29	43	No	13	38.46	n/a	n/a	0.01	NP
Boron (mg/L)	**ARGWA-20 (bg)**	**0.01103**	**49**	**43**	**Yes**	**13**	**23.08**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**ARGWC-21**	**0.0653**	**56**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	ARGWC-22	-0.1722	-8	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	ARGWC-23	0.1197	32	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	ARGWA-19 (bg)	0.6973	37	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	ARGWA-20 (bg)	0.3086	32	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**ARGWC-21**	**7.356**	**68**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	ARGWC-22	0	6	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	ARGWC-23	10.81	21	34	No	11	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	ARGWA-19 (bg)	-0.00711	-24	-53	No	15	46.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	ARGWA-20 (bg)	0	-22	-53	No	15	66.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	ARGWC-23	0.2012	31	34	No	11	0	n/a	n/a	0.01	NP
pH (SU)	ARGWA-19 (bg)	0.01741	11	48	No	14	0	n/a	n/a	0.01	NP
pH (SU)	ARGWA-20 (bg)	0.01693	16	53	No	15	0	n/a	n/a	0.01	NP
pH (SU)	ARGWC-23	-0.1559	-23	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**ARGWA-19 (bg)**	**-0.4042**	**-195**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	ARGWA-20 (bg)	-0.1319	-76	-111	No	25	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**ARGWC-21**	**5.193**	**222**	**118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	ARGWC-22	35.61	4	34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	ARGWC-23	18.25	14	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	ARGWA-19 (bg)	1.991	8	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	ARGWA-20 (bg)	-2.229	-15	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	**ARGWC-21**	**32.77**	**49**	**38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids (mg/L)	ARGWC-22	0	-3	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	ARGWC-23	0	-4	-30	No	10	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

ARGWA-19 (bg)



n = 28

Slope = -0.0001383 units per year.

Mann-Kendall statistic = -20
critical = -131

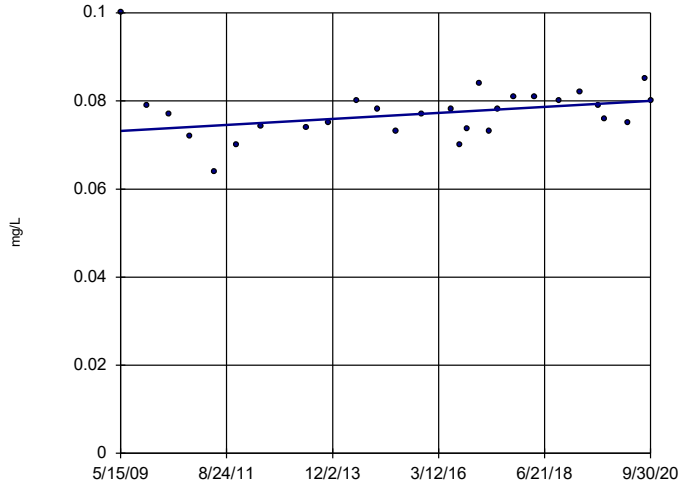
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWA-20 (bg)



n = 28

Slope = 0.0006017 units per year.

Mann-Kendall statistic = 96
critical = 131

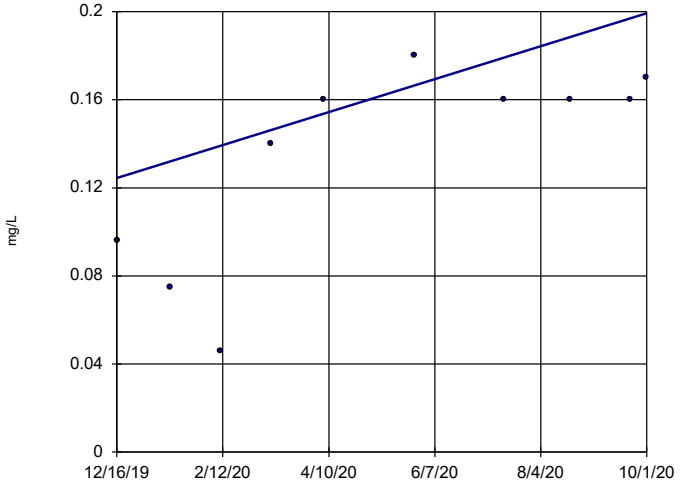
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-23



n = 10

Slope = 0.09419 units per year.

Mann-Kendall statistic = 25
critical = 30

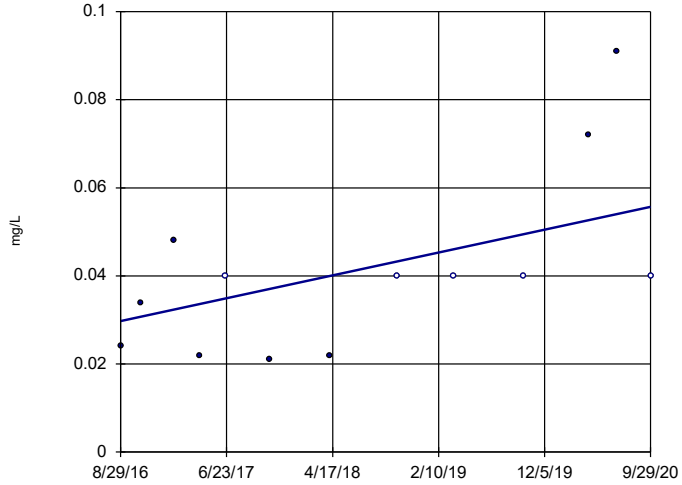
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

ARGWA-19 (bg)



n = 13

Slope = 0.006347 units per year.

Mann-Kendall statistic = 29
critical = 43

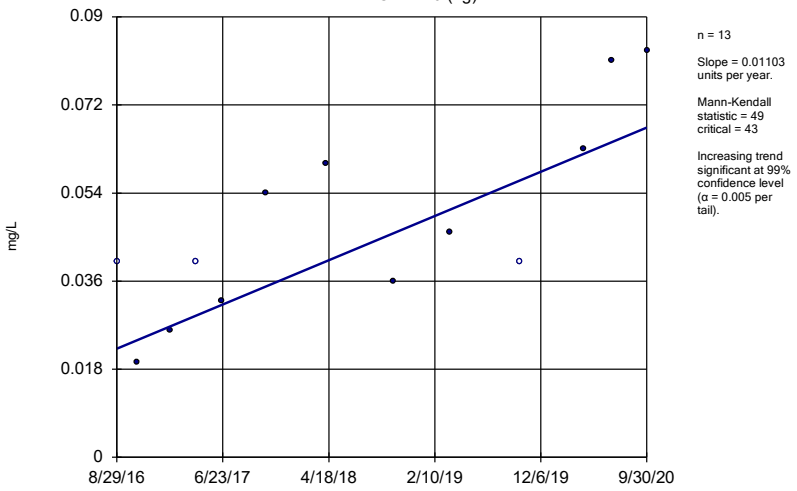
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Hollow symbols indicate censored values.

Sen's Slope Estimator

ARGWA-20 (bg)



n = 13

Slope = 0.01103 units per year.

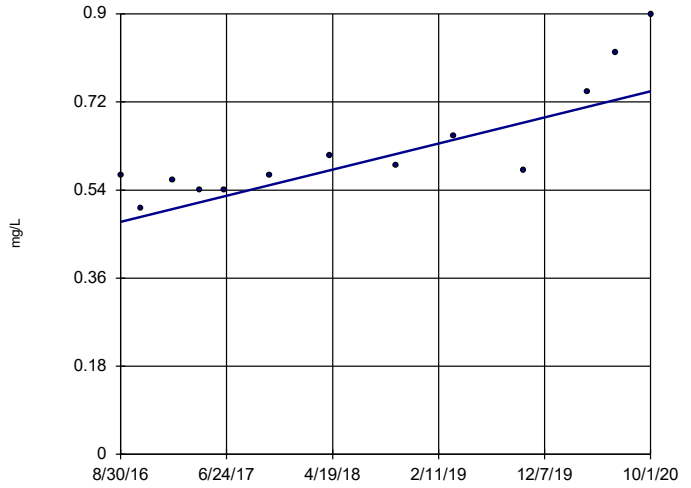
Mann-Kendall statistic = 49
critical = 43

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWC-21



n = 13

Slope = 0.0653 units per year.

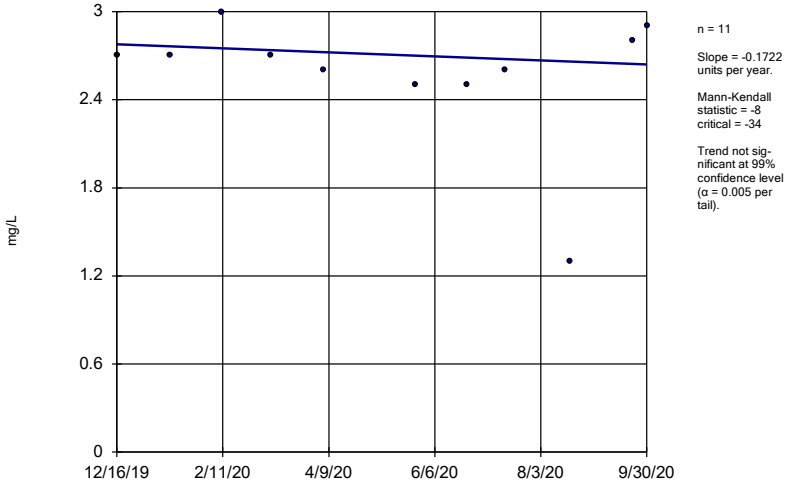
Mann-Kendall statistic = 56
critical = 43

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWC-22



n = 11

Slope = -0.1722 units per year.

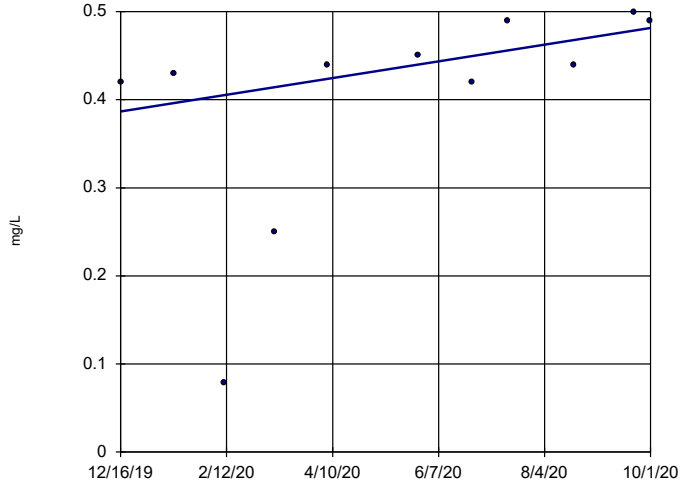
Mann-Kendall statistic = -8
critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWC-23



n = 11

Slope = 0.1197 units per year.

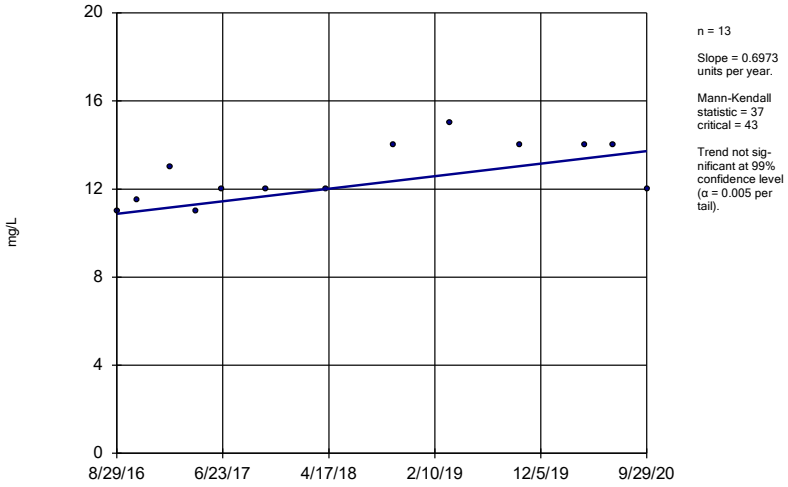
Mann-Kendall statistic = 32
critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWA-19 (bg)



n = 13

Slope = 0.6973 units per year.

Mann-Kendall statistic = 37
critical = 43

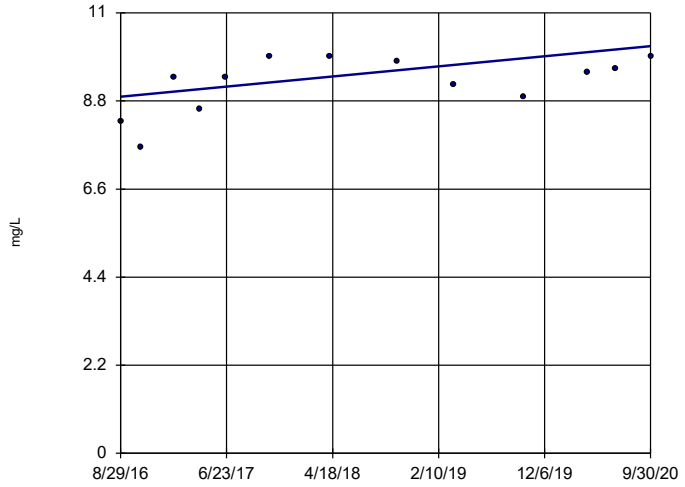
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWA-20 (bg)



n = 13

Slope = 0.3086 units per year.

Mann-Kendall statistic = 32
critical = 43

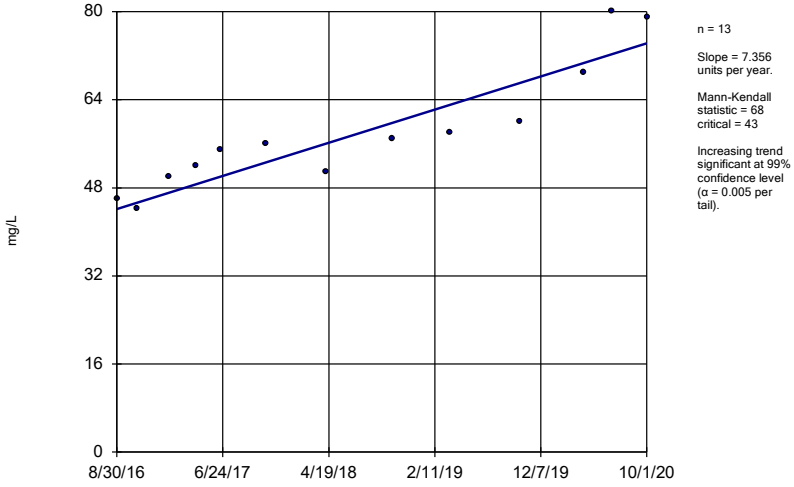
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-21



n = 13

Slope = 7.356 units per year.

Mann-Kendall statistic = 68
critical = 43

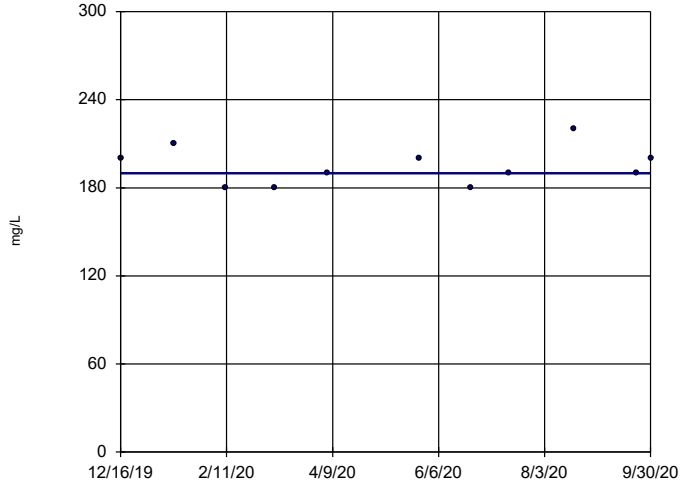
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-22



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 6
critical = 34

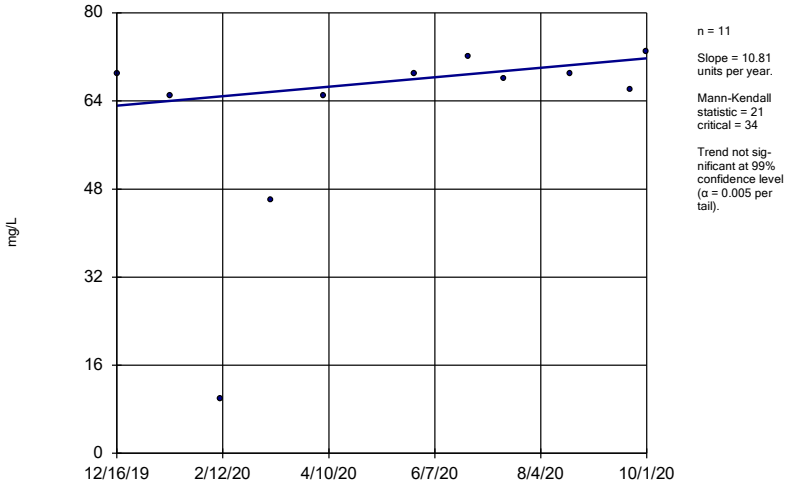
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-23



n = 11

Slope = 10.81 units per year.

Mann-Kendall statistic = 21 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/3/2020 8:51 AM View: Trend Tests

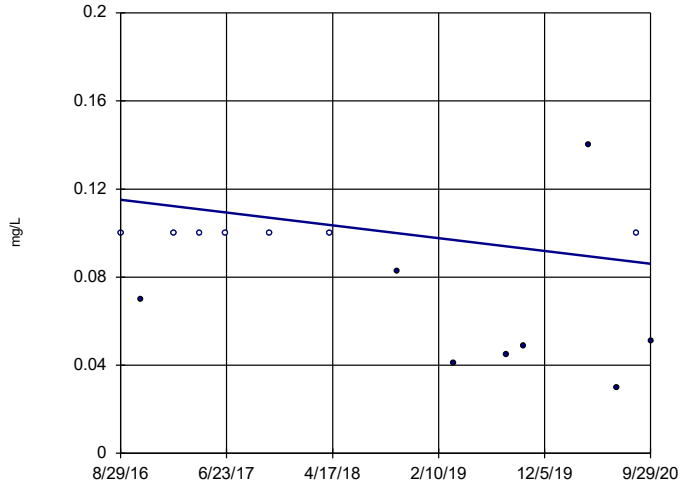
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

ARGWA-19 (bg)



n = 15

Slope = -0.00711 units per year.

Mann-Kendall statistic = -24 critical = -53

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 12/3/2020 8:51 AM View: Trend Tests

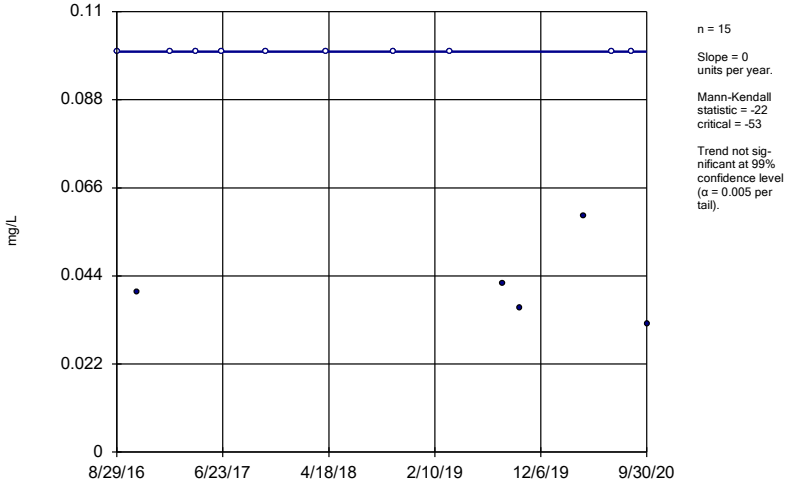
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

ARGWA-20 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = -22 critical = -53

Trend not significant at 99% confidence level (α = 0.005 per tail).

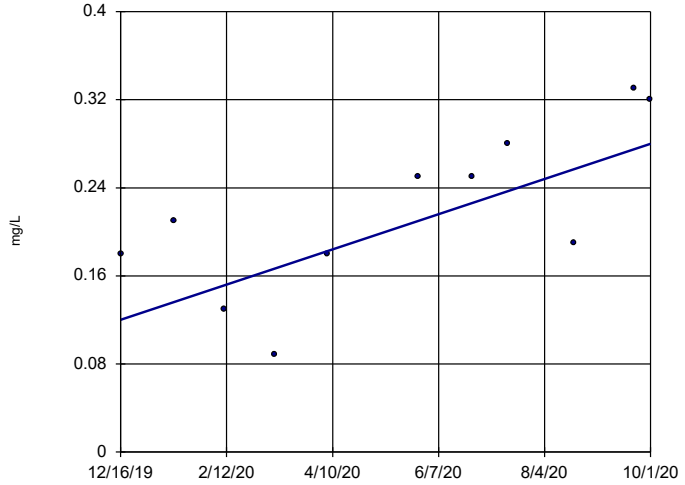
Constituent: Fluoride Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-23



n = 11

Slope = 0.2012 units per year.

Mann-Kendall statistic = 31 critical = 34

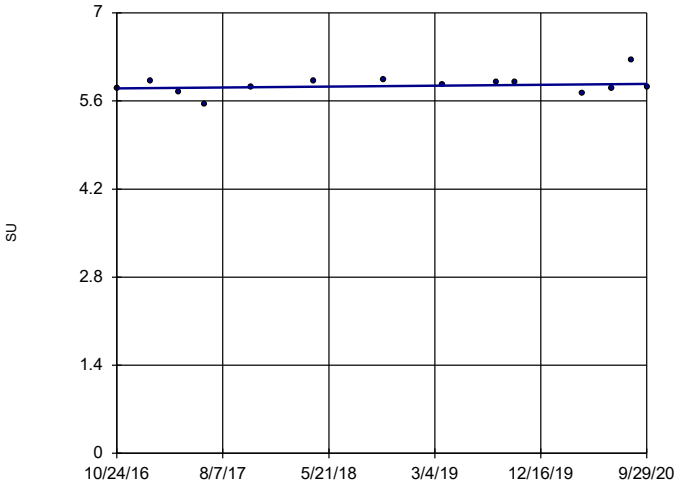
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWA-19 (bg)



n = 14

Slope = 0.01741 units per year.

Mann-Kendall statistic = 11
critical = 48

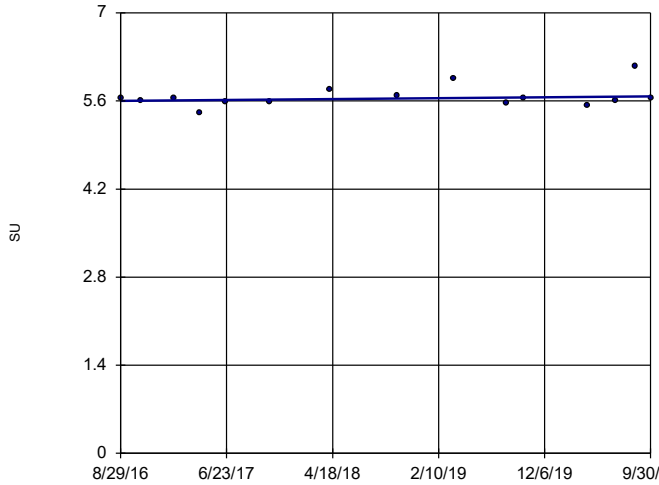
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWA-20 (bg)



n = 15

Slope = 0.01693 units per year.

Mann-Kendall statistic = 16
critical = 53

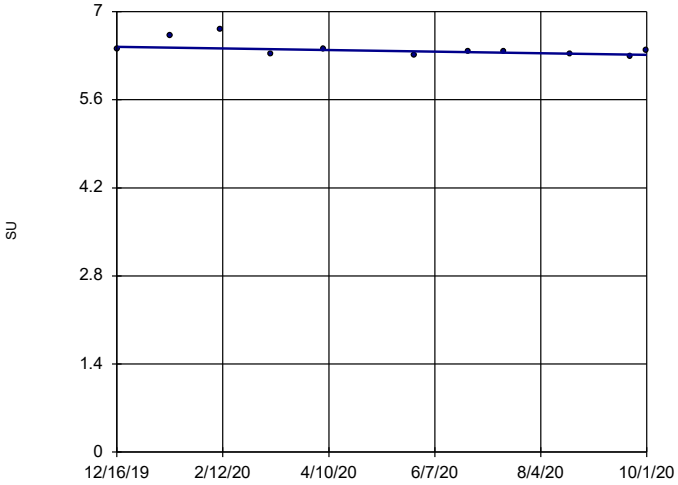
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-23



n = 11

Slope = -0.1559 units per year.

Mann-Kendall statistic = -23
critical = -34

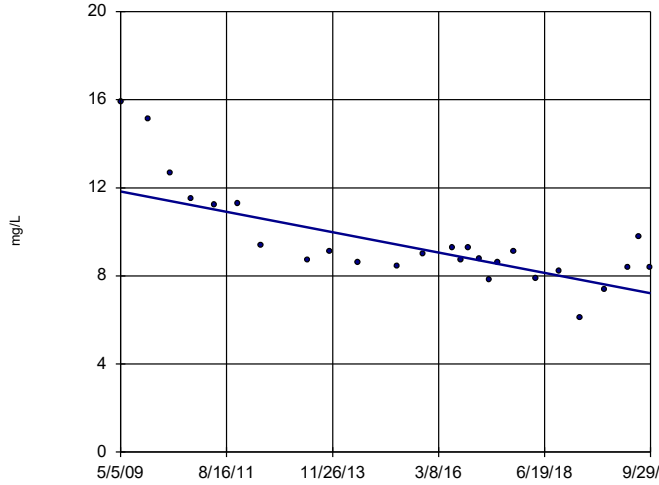
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWA-19 (bg)



n = 26

Slope = -0.4042 units per year.

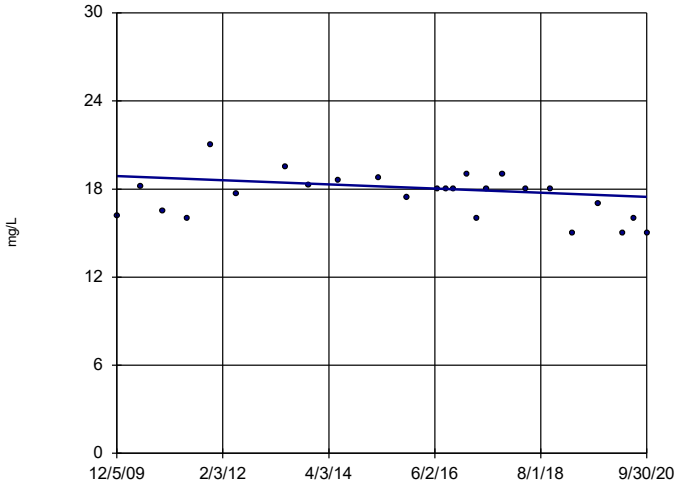
Mann-Kendall statistic = -195
critical = -118

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/3/2020 8:51 AM View: Trend Tests
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWA-20 (bg)



n = 25

Slope = -0.1319 units per year.

Mann-Kendall statistic = -76 critical = -111

Trend not significant at 99% confidence level (α = 0.005 per tail).

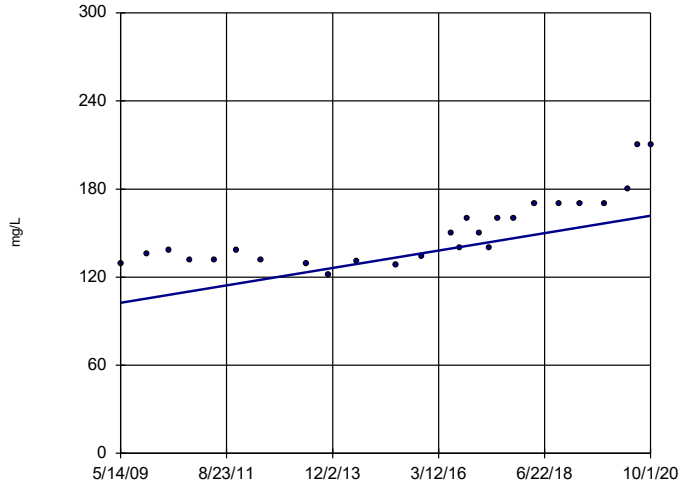
Constituent: Sulfate Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-21



n = 26

Slope = 5.193 units per year.

Mann-Kendall statistic = 222 critical = 118

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

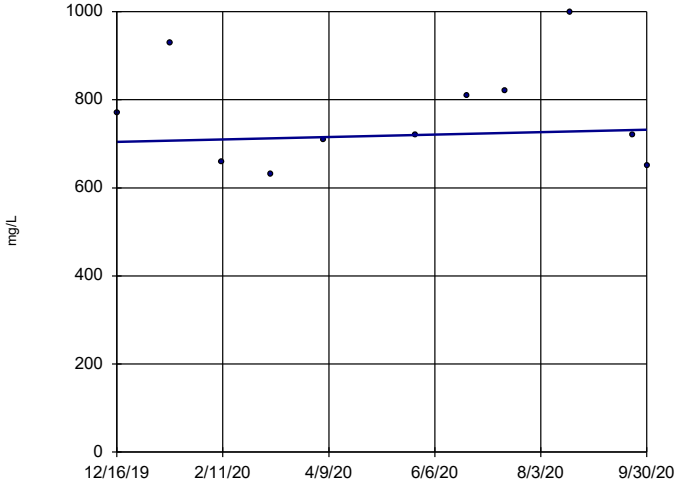
Constituent: Sulfate Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-22



n = 11

Slope = 35.61 units per year.

Mann-Kendall statistic = 4 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

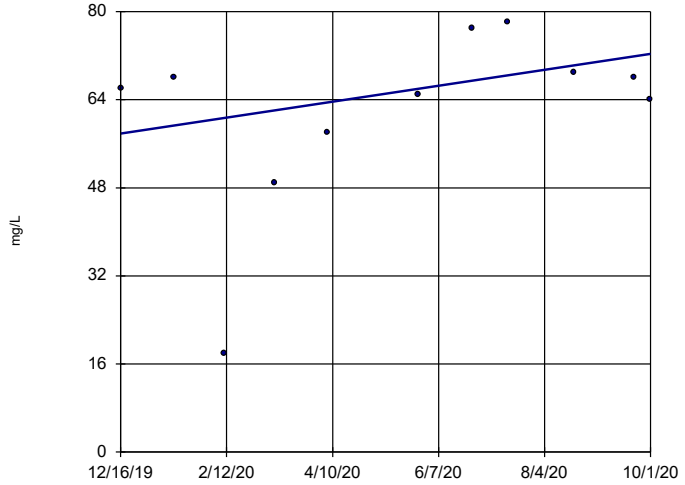
Constituent: Sulfate Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-23



n = 11

Slope = 18.25 units per year.

Mann-Kendall statistic = 14 critical = 34

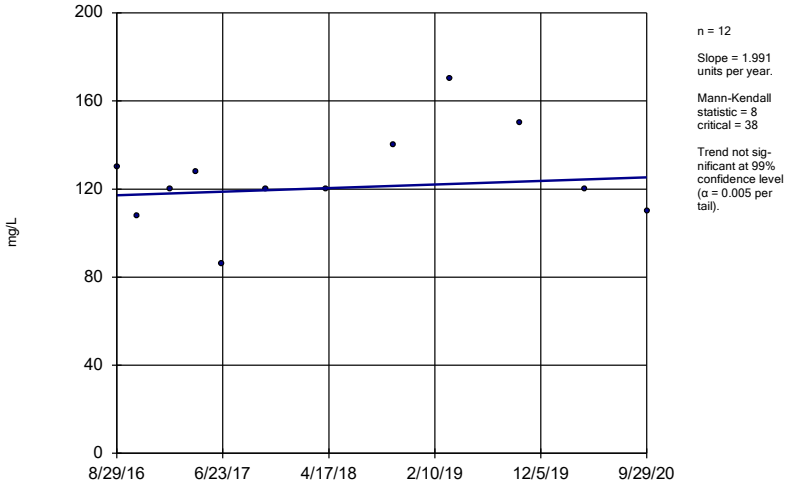
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWA-19 (bg)



n = 12

Slope = 1.991 units per year.

Mann-Kendall statistic = 8 critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

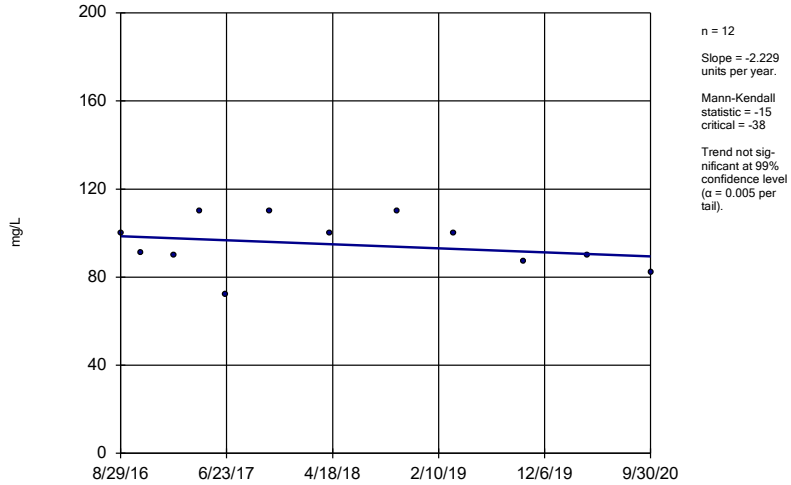
Constituent: Total Dissolved Solids Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWA-20 (bg)



n = 12

Slope = -2.229 units per year.

Mann-Kendall statistic = -15 critical = -38

Trend not significant at 99% confidence level (α = 0.005 per tail).

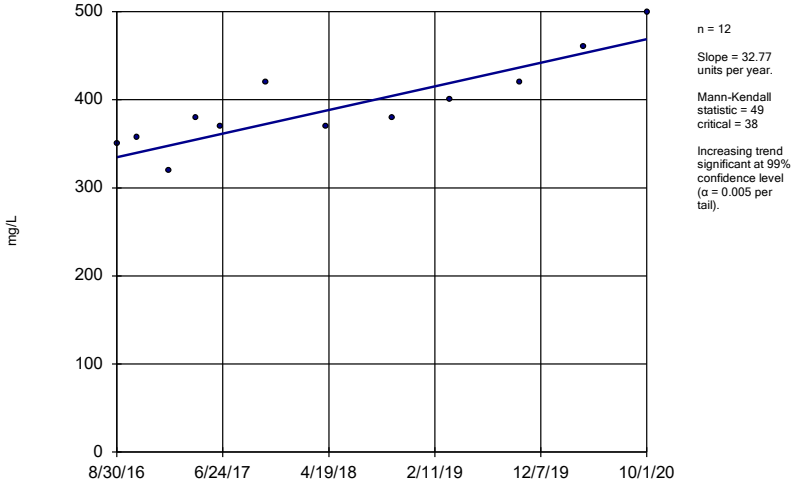
Constituent: Total Dissolved Solids Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-21



n = 12

Slope = 32.77 units per year.

Mann-Kendall statistic = 49 critical = 38

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

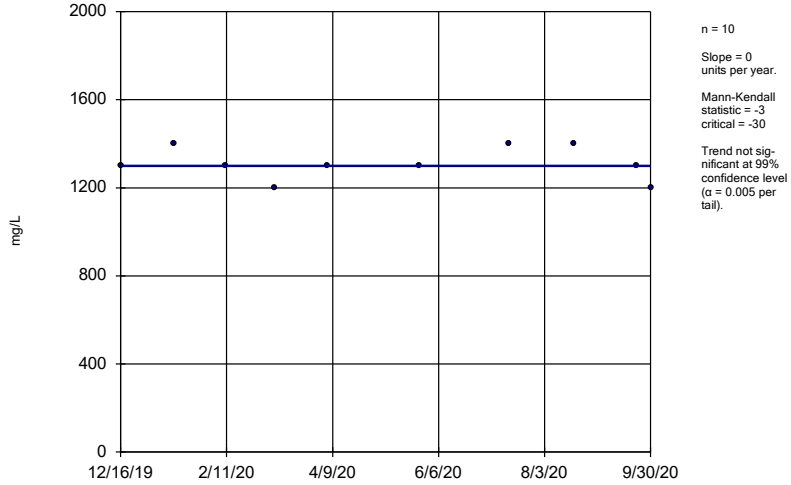
Constituent: Total Dissolved Solids Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Sen's Slope Estimator

ARGWC-22



n = 10

Slope = 0 units per year.

Mann-Kendall statistic = -3 critical = -30

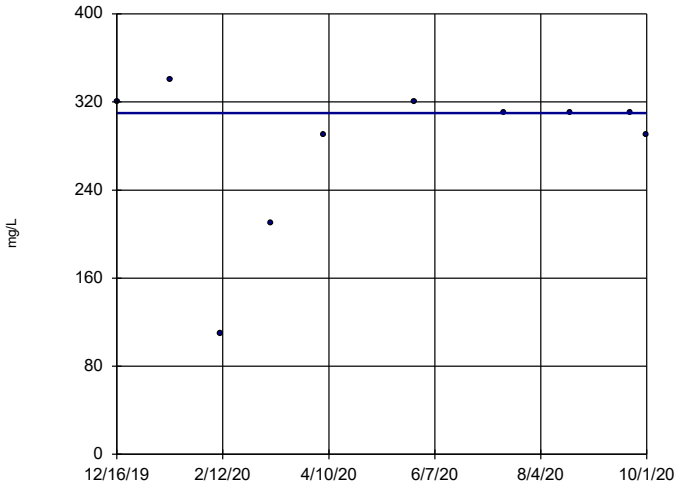
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sen's Slope Estimator

ARGWC-23



n = 10

Slope = 0 units per year.

Mann-Kendall statistic = -4
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/3/2020 8:51 AM View: Trend Tests

Plant Arkwright Client: Southern Company Data: Arkwright No 2

FIGURE G.

Upper Tolerance Limit Summary Table

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/3/2020, 9:06 AM

Constituent	Upper Lim.	Lower Lim.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.002	n/a	n/a	20	n/a	n/a	100	n/a	n/a	0.3585	NP Inter(NDs)
Arsenic (mg/L)	0.0015	n/a	n/a	56	n/a	n/a	83.93	n/a	n/a	0.05656	NP Inter(NDs)
Barium (mg/L)	0.1	n/a	n/a	56	n/a	n/a	0	n/a	n/a	0.05656	NP Inter(normality)
Beryllium (mg/L)	0.0025	n/a	n/a	22	n/a	n/a	90.91	n/a	n/a	0.3235	NP Inter(NDs)
Cadmium (mg/L)	0.0025	n/a	n/a	54	n/a	n/a	98.15	n/a	n/a	0.06267	NP Inter(NDs)
Chromium (mg/L)	0.0078	n/a	n/a	26	n/a	n/a	19.23	n/a	n/a	0.2635	NP Inter(normality)
Cobalt (mg/L)	0.0025	n/a	n/a	28	n/a	n/a	67.86	n/a	n/a	0.2378	NP Inter(NDs)
Combined Radium 226 + 228 (pCi/L)	1.341	n/a	n/a	26	0.5896	0.3297	0	None	No	0.05	Inter
Fluoride (mg/L)	0.14	n/a	n/a	30	n/a	n/a	56.67	n/a	n/a	0.2146	NP Inter(NDs)
Lead (mg/L)	0.001	n/a	n/a	56	n/a	n/a	87.5	n/a	n/a	0.05656	NP Inter(NDs)
Lithium (mg/L)	0.013	n/a	n/a	28	n/a	n/a	42.86	n/a	n/a	0.2378	NP Inter(normality)
Mercury (mg/L)	0.0002	n/a	n/a	20	n/a	n/a	90	n/a	n/a	0.3585	NP Inter(NDs)
Molybdenum (mg/L)	0.015	n/a	n/a	24	n/a	n/a	95.83	n/a	n/a	0.292	NP Inter(NDs)
Selenium (mg/L)	0.005	n/a	n/a	54	n/a	n/a	62.96	n/a	n/a	0.06267	NP Inter(NDs)
Silver (mg/L)	0.001	n/a	n/a	46	n/a	n/a	89.13	n/a	n/a	0.09447	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	20	n/a	n/a	100	n/a	n/a	0.3585	NP Inter(NDs)

FIGURE H.

PLANT ARKWRIGHT LF #2 GWPS			
Constituent Name	**MCL**	**Background Limit**	**State GWPS**
Antimony, Total (mg/L)	0.006	0.002	0.006
Arsenic, Total (mg/L)	0.01	0.0015	0.01
Barium, Total (mg/L)	2	0.1	2
Beryllium, Total (mg/L)	0.004	0.0025	0.004
Cadmium, Total (mg/L)	0.005	0.0025	0.005
Chromium, Total (mg/L)	0.1	0.0078	0.1
Cobalt, Total (mg/L)		0.0025	0.0025
Combined Radium, Total (pCi/L)	5	1.3	5
Fluoride, Total (mg/L)	4	0.14	4
Lead, Total (mg/L)		0.001	0.001
Lithium, Total (mg/L)		0.013	0.013
Mercury, Total (mg/L)	0.002	0.0002	0.002
Molybdenum, Total (mg/L)		0.015	0.015
Selenium, Total (mg/L)	0.05	0.005	0.05
Silver, Total (mg/L)		0.001	0.001
Thallium, Total (mg/L)	0.002	0.001	0.002

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

FIGURE I.

Confidence Intervals Summary - Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (mg/L)	**ARGWC-22**	**0.01257**	**0.004289**	**0.0025**	**Yes**	**11**	**0.008427**	**0.004965**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	**ARGWC-23**	**0.04047**	**0.01986**	**0.013**	**Yes**	**11**	**0.03016**	**0.01236**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**ARGWC-23**	**0.05901**	**0.02639**	**0.015**	**Yes**	**10**	**0.0427**	**0.01828**	**0**	**None**	**No**	**0.01**	**Param.**
Silver (mg/L)	**ARGWC-21**	**0.001**	**0.001**	**0.001**	**Yes**	**10**	**0.000943**	**0.0001802**	**90**	**None**	**No**	**0.011**	**NP (NDs)**

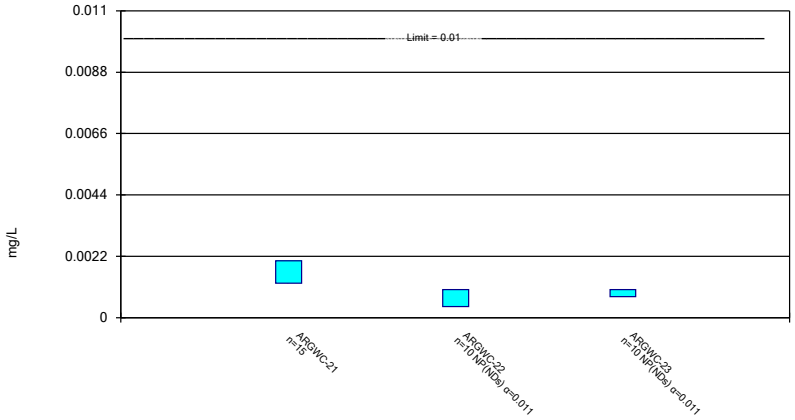
Confidence Intervals Summary - All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 2 Printed 12/4/2020, 12:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	ARGWC-21	0.002038	0.001234	0.01	No	15	0.001636	0.0005931	13.33	None	No	0.01	Param.
Arsenic (mg/L)	ARGWC-22	0.001	0.0004	0.01	No	10	0.000844	0.0002618	70	None	No	0.011	NP (NDs)
Arsenic (mg/L)	ARGWC-23	0.001	0.00075	0.01	No	10	0.000917	0.0001915	80	None	No	0.011	NP (NDs)
Barium (mg/L)	ARGWC-21	0.1188	0.08617	2	No	15	0.1003	0.02777	0	None	x^2	0.01	Param.
Barium (mg/L)	ARGWC-22	0.06139	0.03581	2	No	10	0.0486	0.01433	0	None	No	0.01	Param.
Barium (mg/L)	ARGWC-23	0.1716	0.103	2	No	10	0.1347	0.04572	0	None	x^2	0.01	Param.
Beryllium (mg/L)	ARGWC-22	0.0025	0.00018	0.004	No	9	0.001273	0.001168	44.44	None	No	0.002	NP (normality)
Beryllium (mg/L)	ARGWC-23	0.0025	0.00033	0.004	No	9	0.002259	0.0007233	88.89	None	No	0.002	NP (NDs)
Chromium (mg/L)	ARGWC-21	0.002	0.0017	0.1	No	13	0.001977	0.00008321	92.31	None	No	0.01	NP (NDs)
Chromium (mg/L)	ARGWC-22	0.002	0.002	0.1	No	10	0.00228	0.0008854	90	None	No	0.011	NP (NDs)
Cobalt (mg/L)	ARGWC-21	0.001952	0.0013	0.0025	No	14	0.00158	0.000523	0	None	x^2	0.01	Param.
Cobalt (mg/L)	**ARGWC-22**	**0.01257**	**0.004289**	**0.0025**	**Yes**	**11**	**0.008427**	**0.004965**	**0**	**None**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	ARGWC-23	0.003322	0.001055	0.0025	No	11	0.002188	0.00136	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	ARGWC-21	0.8862	0.5093	5	No	13	0.6978	0.2534	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	ARGWC-22	0.7936	0.2782	5	No	10	0.5359	0.2888	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	ARGWC-23	0.612	0.08116	5	No	10	0.3466	0.2975	0	None	No	0.01	Param.
Fluoride (mg/L)	ARGWC-21	0.12	0.065	4	No	15	0.1286	0.1259	0	None	No	0.01	NP (normality)
Fluoride (mg/L)	ARGWC-22	0.0609	0.04043	4	No	11	0.05055	0.01166	18.18	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	ARGWC-23	0.2819	0.1561	4	No	11	0.219	0.07547	0	None	No	0.01	Param.
Lead (mg/L)	ARGWC-21	0.001	0.00026	0.001	No	15	0.000894	0.0002805	86.67	None	No	0.01	NP (NDs)
Lead (mg/L)	ARGWC-22	0.001	0.00022	0.001	No	10	0.000836	0.0003463	80	None	No	0.011	NP (NDs)
Lead (mg/L)	ARGWC-23	0.001	0.00026	0.001	No	10	0.000844	0.0003294	80	None	No	0.011	NP (NDs)
Lithium (mg/L)	ARAMW-1	0.01091	0.005644	0.013	No	4	0.008275	0.001159	0	None	No	0.01	Param.
Lithium (mg/L)	ARAMW-2	0.1122	-0.03272	0.013	No	4	0.03975	0.03192	0	None	No	0.01	Param.
Lithium (mg/L)	ARGWC-21	0.01208	0.008752	0.013	No	14	0.01041	0.002347	0	None	No	0.01	Param.
Lithium (mg/L)	ARGWC-22	0.02553	0.01176	0.013	No	11	0.01865	0.00826	0	None	No	0.01	Param.
Lithium (mg/L)	**ARGWC-23**	**0.04047**	**0.01986**	**0.013**	**Yes**	**11**	**0.03016**	**0.01236**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	ARGWC-22	0.015	0.00093	0.015	No	10	0.00946	0.007158	60	None	No	0.011	NP (NDs)
Molybdenum (mg/L)	**ARGWC-23**	**0.05901**	**0.02639**	**0.015**	**Yes**	**10**	**0.0427**	**0.01828**	**0**	**None**	**No**	**0.01**	**Param.**
Silver (mg/L)	**ARGWC-21**	**0.001**	**0.001**	**0.001**	**Yes**	**10**	**0.000943**	**0.0001802**	**90**	**None**	**No**	**0.011**	**NP (NDs)**

Parametric and Non-Parametric (NP) Confidence Interval

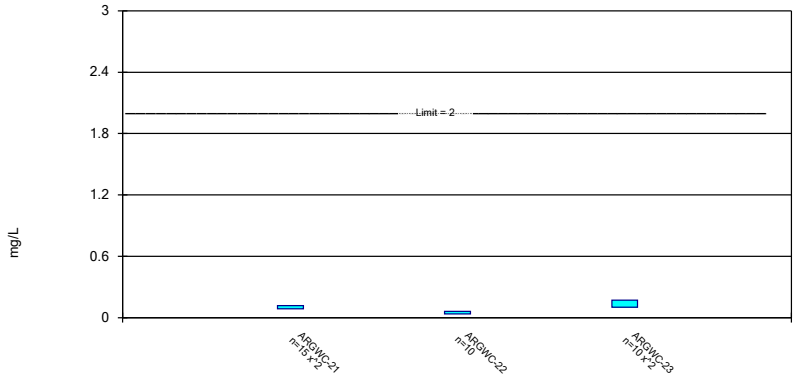
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Parametric Confidence Interval

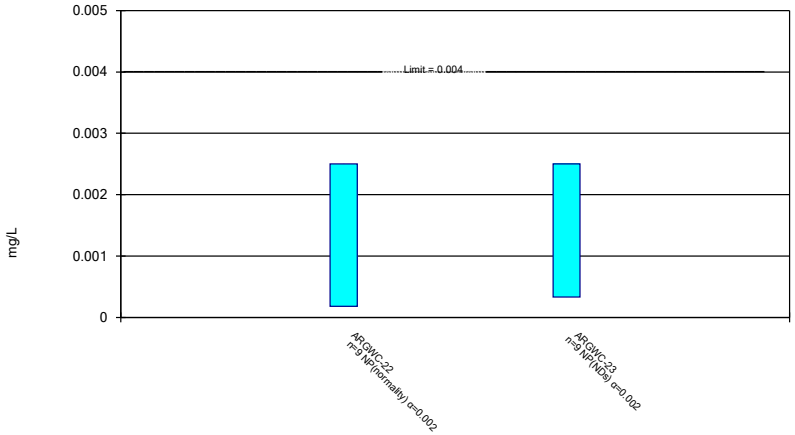
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Non-Parametric Confidence Interval

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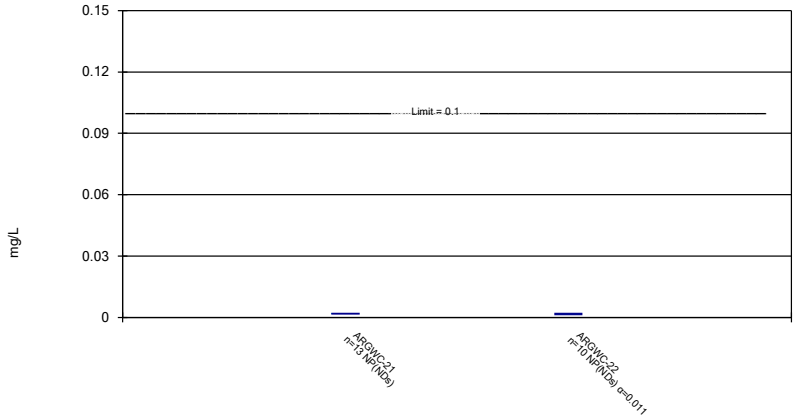
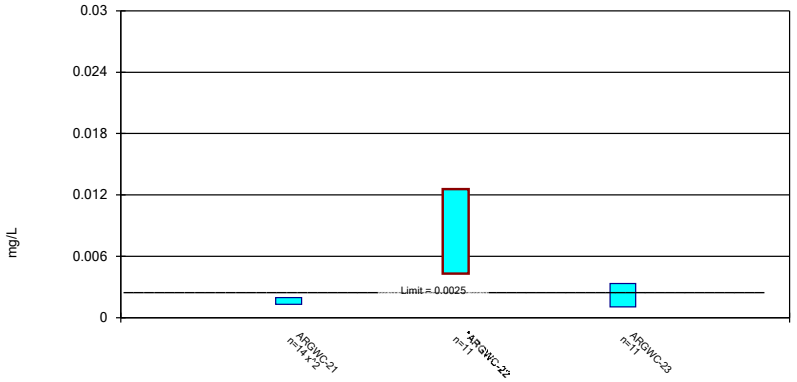


Constituent: Chromium Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Parametric Confidence Interval

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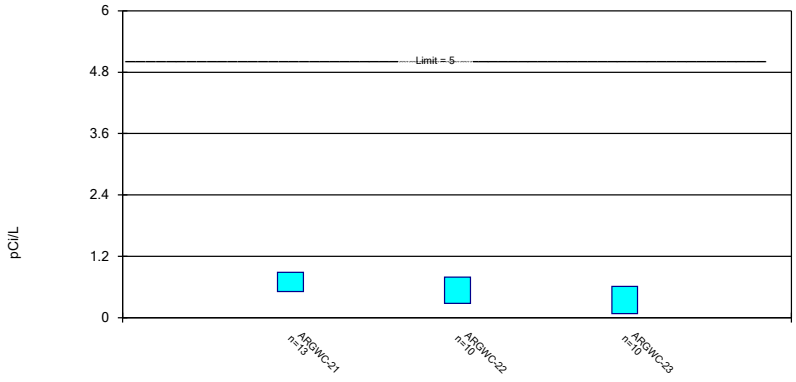

Constituent: Combined Radium 226 + 228 Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Parametric and Non-Parametric (NP) Confidence Interval

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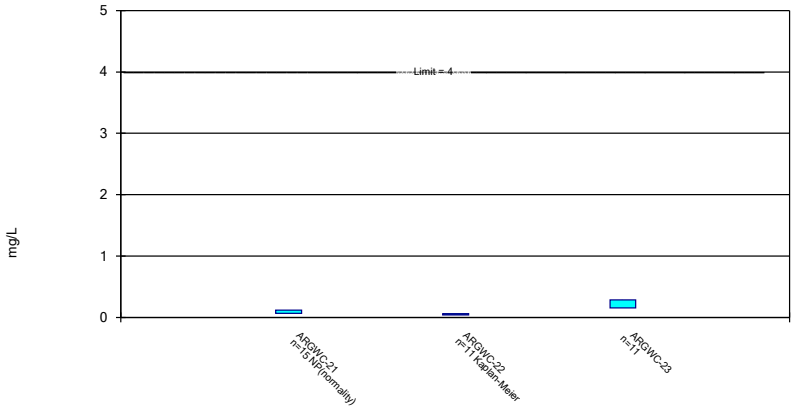

Constituent: Fluoride Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Non-Parametric Confidence Interval

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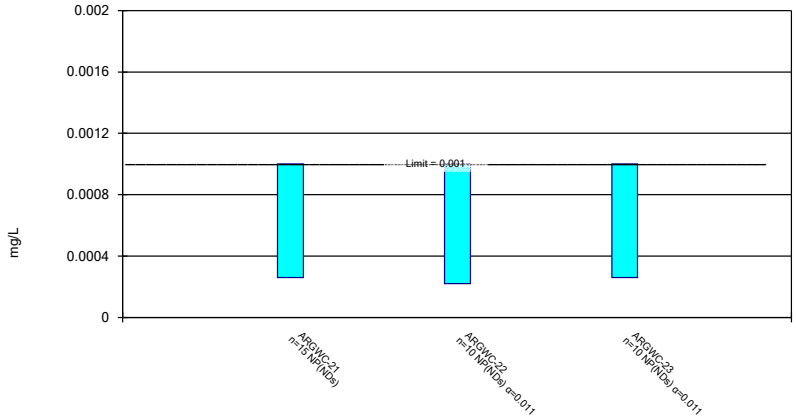

Constituent: Lead Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Parametric Confidence Interval

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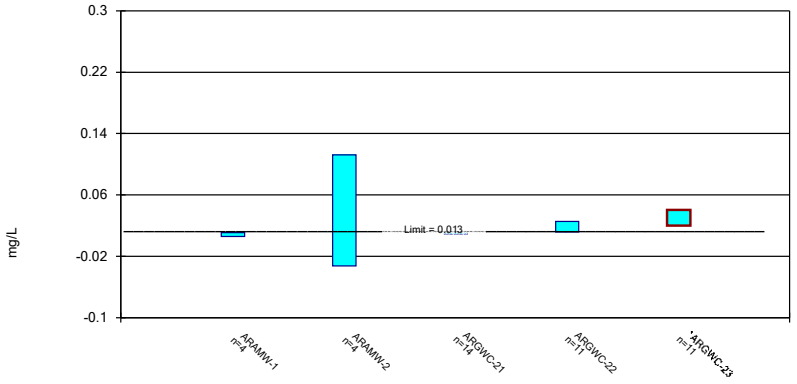
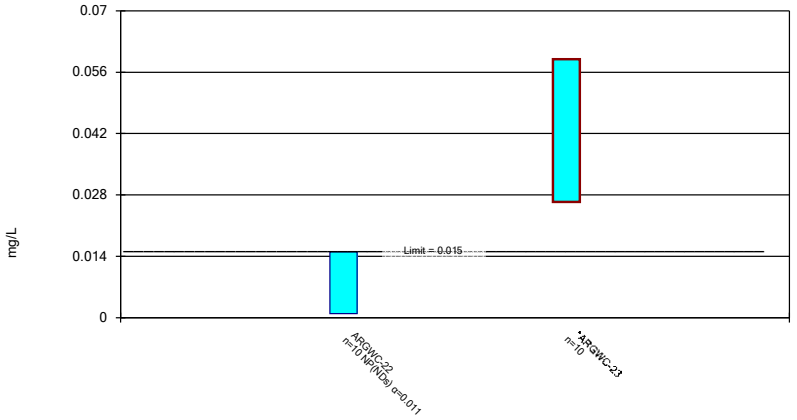


Constituent: Lithium Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

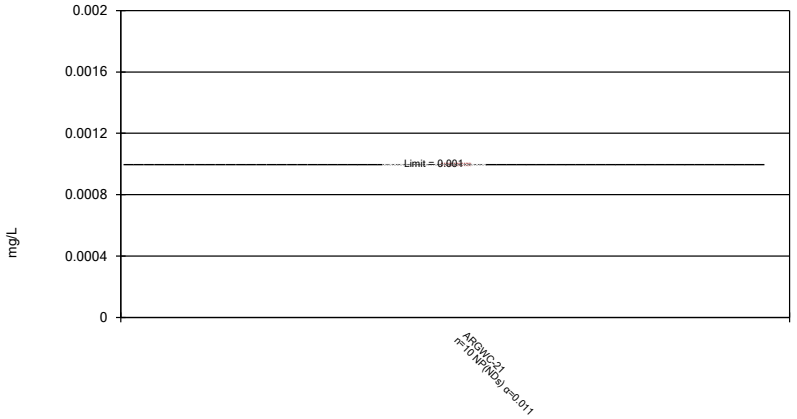


Constituent: Molybdenum Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

Sanitas™ v.9.6.27 Groundwater Stats Consulting. UG

Non-Parametric Confidence Interval

Compliance limit is exceeded.



Constituent: Silver Analysis Run 12/4/2020 12:34 PM View: Appendix I & IV
Plant Arkwright Client: Southern Company Data: Arkwright No 2

APPENDIX D

SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

Semi-Annual Remedy Selection and Design Progress Report

Georgia Power Company – Plant Arkwright

Ash Pond 2 Dry Ash Stockpile
Project No.: 6122201429

Prepared for:

Georgia Power

Atlanta, Georgia

2/26/2021

CERTIFICATION STATEMENT

This *Semi-Annual Remedy Selection and Design Progress Report, Georgia Power Company – Plant Arkwright, Ash Pond 2 Dry Ash Stockpile (AP-2 DAS)*, has been prepared in accordance with the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a).

Gregory J. Wrenn, P.E.
Project Manager

2/26/2021
Date

Rhonda N. Quinn, P.G.
Senior Geologist

2/26/2021
Date

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LIST OF ACROYMNS

ACM	Assessment of Corrective Measures
AP-2 DAS	Ash Pond 2 Dry Ash Stockpile
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
COC	Constituent of Concern
CSM	Conceptual Site Model
EPD	Environmental Protection Division
ft	feet
ft bgs	feet below ground surface
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
ISS	In-Situ Solidification/Stabilization
ISCO	In-Situ Chemical Oxidation
ISCR	In-Situ Chemical Reduction
ITRC	Interstate Technology & Regulatory Council
mg/L	milligrams per liter
MNA	Monitored Natural Attenuation
O&M	Operations and Maintenance
P&T	Pump and Treat
PRB	Permeable Reactive Barrier
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
US EPA	United States Environmental Protection Agency
ZVI	Zero Valent Iron

1.0 INTRODUCTION

1.1 Purpose

This *Semi-Annual Remedy Selection and Design Progress Report* (the semi-annual progress report) was prepared for Georgia Power Company (Georgia Power) Plant Arkwright Ash Pond 2 Dry Ash Stockpile (AP-2 DAS) (Site) in accordance with the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). Pursuant to GA EPD Rule 391-3-4-.10(6)(a), Georgia Power initiated Assessment of Corrective Measures (ACM) for AP-2 DAS when a statistically significant level (SSL) of lithium in well ARGWC-21 was identified in the October 2019 semi-annual groundwater data. New background data obtained in April 2020 was used to update the lithium Groundwater Protection Standard (GWPS) and there was no longer a lithium SSL in well ARGWC-21. Statistical analysis of the April 2020 semi-annual groundwater data identified a cobalt SSL, exceeding the state GWPS, in well ARGWC-22. A Notice of ACM was submitted to the GA EPD July 9, 2020 following the identification of the cobalt SSL. Subsequently, Georgia Power completed an ACM Report on December 4, 2020 for the cobalt SSL in well ARGWC-22. Statistical analysis of the October 2020 semi-annual groundwater data identified a cobalt SSL in well ARGWC-22 along with lithium and molybdenum SSLs in well ARGWC-23. The SSLs for cobalt and molybdenum are horizontally delineated by surface water samples from Beaverdam Creek, while the vertical delineation for cobalt and molybdenum are ongoing. The SSL for lithium is horizontally delineated by surface water samples from Beaverdam Creek and vertically delineated onsite by piezometer ARAMW-8.

In addition to the ACM investigation, Georgia Power conducted a human health and ecological risk evaluation to evaluate the cobalt SSLs in well ARGWC-22. The results indicated concentrations of cobalt detected in groundwater at AP-2 DAS are not expected to pose a risk to human health or the environment (Wood, 2020a). Surface water samples were collected February 10, 2021 from Beaverdam Creek. Cobalt concentrations in the surface water samples were below the cobalt GWPS and lithium and molybdenum were not detected. The risk assessment will be updated in August to include lithium and molybdenum.

The purpose of this semi-annual progress report is to document the process of selecting corrective measure(s) for groundwater as provided in the *Assessment of Corrective Measures Report, Georgia Power Company – Plant Arkwright Ash Pond 2 Dry Ash Stockpile* (Wood, 2020a) (ACM Report) in December 2020. This process is typically iterative and may be composed of multiple steps to analyze the effectiveness of corrective measures to improve groundwater quality. Once potential corrective measures are identified, they are further evaluated using the criteria outlined in GA EPD Rule 391-3-4-.10(6)(a). Additional details are provided within the ACM Report and the cited state regulations. Pursuant to GA EPD Rule 391-3-4-.10(6)(a), semi-

annual progress reports will be included as an appendix to the routine semi-annual groundwater monitoring and corrective action reports to document the efforts of evaluating and progressing towards selecting a groundwater corrective measure. As discussed in the ACM Report, the following corrective measures are potentially feasible for use at AP-2 DAS. A comparative screening of the corrective measures is provided in **Table 1: Evaluation of Remedial Technologies**.

1. Geochemical Manipulation (In-Situ Injection)
2. Hydraulic Containment (Pump and Treat)
3. Monitored Natural Attenuation (MNA)
4. Permeable Reactive Barrier (PRB)
5. Phytoremediation
6. Subsurface Vertical Barrier Walls

Georgia Power proactively initiated adaptive site management as outlined in the ACM Report (Wood, 2020a) to support the groundwater remedy selection process and address potential changes in Site conditions as appropriate. The adaptive site management approach will take existing Site conditions, including natural attenuation mechanisms into account. Characterization activities to evaluate attenuation mechanisms at the Site include collection of data necessary to progressively evaluate the existing and long-term effectiveness of these processes in the aquifer and reduce uncertainty for decision making at each screening step as listed in the US EPA guidelines for MNA (USEPA, 2015) summarized below.

- Tier I: Constituent concentrations & plume stability
- Tier II: Constituent attenuation mechanisms
- Tier III: Aquifer capacity and stability
- Tier IV: Performance monitoring

1.2 Site Background and Overview of Ash Pond Closure

Plant Arkwright is located in Bibb County, Georgia approximately 6 miles northwest of the city of Macon (**Figure 1: Site Location Map**). AP-2 DAS was in operation in the 1950s. Soil was placed over AP-2 DAS as a closure measure and was estimated to be closed in-place in the late 1970s to early 1980s. Georgia Power officially closed the AP-2 DAS in 2010 with Georgia EPD's

approval and in accordance with the solid waste landfill regulations specified by GA EPD Rule 391-3-4, in effect at the time of its closure. The CCR unit referred to as AP-2 DAS is defined as an inactive CCR Landfill per GA EPD Rule 391-3-4-.10(2)(a)(3).

Georgia Power has elected to remove the CCR material from AP-2 DAS Landfill. The CCR will be excavated from the AP-2 DAS Landfill area and then transported and disposed of in a permitted facility that has been approved to accept CCR or sold to an ash marketer for beneficial reuse. The AP-2 DAS Landfill area will be regraded and vegetated after CCR removal. The closure of AP-2 DAS by the removal of CCR provides significant source control that reduces the potential for migration of CCR constituents to groundwater. Corrective measures discussed in this ACM are being evaluated to address constituents detected at statistically significant levels (SSLs) in compliance monitoring network wells at the waste boundary.

1.3 Regulatory Program Status and Nature and Extent

Pursuant to GA EPD Rule 391-3-4-.10(6)(a), Georgia Power initiated an ACM for the AP-2 DAS in July 2020 for an SSL of cobalt exceeding the state GWPS. The ACM Report was subsequently prepared for AP-2 DAS cobalt SSL in well ARGWC-22 and submitted to EPD in December 2020. The compliance monitoring well network is shown in **Figure 2: Monitoring Network Well Location Map**. Based on recent statistical analysis of the October 2020 groundwater data, the following compliance wells and constituent pairs exhibited SSLs:

- Cobalt: ARGWC-22
- Lithium: ARGWC-23
- Molybdenum: ARGWC-23

Two delineation piezometers (ARAMW-7 and ARAMW-8) were installed to vertically characterize the groundwater quality and delineate SSLs. The locations of the additional piezometers are shown in **Figure 2** and well construction details are provided in **Table 2: Summary of Monitoring Network Well and Piezometer Construction and Groundwater Elevations**. Supporting details and documents (e.g., boring logs, well construction tables) have been previously submitted with the ACM Report or as separate well installation reports. A potentiometric surface map illustrating the September 2020 groundwater elevations collected during the September/October 2020 semi-annual groundwater monitoring event are provided on **Figure 3: Potentiometric Surface – September 2020**.

Based on the groundwater data reported in the *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report* (Wood, 2021), the SSL of cobalt identified in compliance well ARGWC-

22 is horizontally delineated to below the state GWPS (0.0025 mg/L) by surface water samples collected on February 10, 2021 from Beaverdam Creek downstream of AP-2 DAS as depicted in **Figure 4: Isoconcentration Map for Cobalt Ash Pond 2 – September/October 2020**. However, vertical delineation of cobalt (0.028 mg/L) at ARGWC-22 has not been accomplished following the first sampling of newly installed delineation piezometer ARAMW-7. Surface water samples collected on February 10, 2021 from Beaverdam Creek indicate horizontal delineation of GWPS exceedances for lithium and molybdenum at well location ARGWC-23 has been achieved as shown in **Figure 5: Isoconcentration Map for Lithium Ash Pond 2 – September/October 2020** and **Figure 6: Isoconcentration Map for Molybdenum Ash Pond 2 – September/October 2020**. The analytical data for the groundwater sample collected from ARAMW-8 indicate that vertical delineation was accomplished for lithium (0.0044 mg/L) but was not accomplished for molybdenum (0.056 mg/L).

Pursuant to GA EPD Rule 391-3-4-.10(6)(a), Georgia Power continues to monitor the groundwater at AP-2 DAS in accordance with the assessment monitoring program while ACM efforts are implemented to evaluate potential corrective measures to address SSLs of cobalt, lithium, and molybdenum in select AP-2 DAS monitoring wells.

2.0 SUMMARY OF WORK COMPLETED

The following summarizes the field investigations and data evaluations completed since the issuance of the *2020 Annual Groundwater Monitoring and Corrective Action Report* in July 2020 (Wood, 2020b) in support of delineating Appendix IV SSLs and evaluation of the corrective measures presented in the ACM Report. The two routine assessment monitoring events conducted in August and September/October 2020 are discussed in the *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report* (Wood, 2021).

- June 2020: Analytical data was assessed from groundwater samples collected in June 2020 from monitoring wells and delineation piezometers at the AP-2 DAS. The samples were collected in support of evaluating the geochemical composition of the groundwater relative to potential sources located within the AP-2 DAS. Samples were analyzed for boron, cobalt, lithium, and molybdenum, as well as major cations and anions.
- September/October 2020: Routine semi-annual groundwater samples were collected from the five compliance wells and the two existing delineation piezometers. The samples were analyzed for the complete suite of Appendix III parameters and for those Appendix IV parameters detected during the August 2020 assessment constituent screening event. The results are presented in the *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report*.
- November 2020: Two delineation piezometers, namely, ARAMW-7 and ARAMW-8, were installed to vertically delineate GWPS exceedances of cobalt at compliance well location ARGWC-22 and lithium and molybdenum at well location ARGWC-23. These delineation piezometers ARAMW-7 and ARAWM-8 are located adjacent wells ARGWC-22 and ARGWC-23, respectively, and were installed to depths of 48 and 47 ft below ground surface (bgs), respectively. These delineation piezometers were completely screened within the bedrock aquifer with competent bedrock encountered at depths of 36.5 bgs at well location ARAMW-7 and 35.0 bgs at ARAMW-8.
- December 1, 2020: Non-routine groundwater samples were collected from newly installed delineation piezometers ARAMW-7 and ARAMW-8. The samples were analyzed for the complete suite of Appendix III parameters and for cobalt, lithium, and molybdenum as well as major cations and anions in support of evaluating the geochemical composition vertically in the shallow fractured bedrock. These delineation piezometers will be routinely sampled as part of the assessment monitoring well network at the Site in future sampling events. The second sample collected from these two delineation wells was collected during the first semi-annual sampling event of 2021 which was completed on February 11, 2021.

3.0 SUMMARY OF RESULTS

The following presents the results of work outlined in Section 2.

3.1 Groundwater Analysis

Table 3: Water Quality Analytical Summary summarizes the analytical data collected in June, November/December 2020 from the AP-2 DAS from the compliance wells and delineation piezometers and the November 2020 and February 2021 surface water samples from Beaverdam Creek. **Figure 2** depicts the locations of the monitoring well network at AP-2 DAS. The laboratory reports for the locations sampled in June, November/December 2020 and February 2021 are provided in **Appendix A: Field Sampling Logs and Analytical Data Reports for June and November/December 2020, and February 2021**.

The major ion compositions of groundwater were used to construct Stiff diagrams, which are among the most common tools for assessing geochemical similarities and differences between aqueous samples. Laboratory data, which are normally reported in mg/L, are converted to milliequivalents per liter (meq/L) when plotted on Stiff diagram. Geochemical fingerprinting is a useful tool to identify potential origins of water samples as well as mixing of liquids along a common flow path. The Stiff diagrams are presented as **Figures 7A** through **7D: Stiff Diagrams**. In summary:

- The background wells indicate a calcium-bicarbonate type groundwater at the upgradient edge of the AP-2 DAS.
- Compliance wells for the AP-2 DAS area are mixed and include calcium-bicarbonate and calcium-sulfate water types.
- Delineation piezometers are calcium-sulfate water types
- There are differences in groundwater geochemical composition between upgradient and downgradient groundwaters.

The Stiff diagrams indicates a calcium-sulfate signature for waters in compliance wells ARGWC-21, ARGWC-22, and ARGWC-23 which is stronger than the signatures in delineation piezometers ARAMW-1 and ARAMW-2. The strongest signature is in compliance well ARGWC-22.

3.2 Delineation Piezometer Groundwater Analysis

Vertical delineation piezometers ARAMW-7 and ARAMW-8 were sampled on November 30 and December 1, 2020, respectively, using low flow sampling methods. The samples were analyzed in the same manner as indicated in Section 2.2. The analytical data from the sample collected at ARAMW-7 (vertical delineation piezometer for ARGWC-22) indicate cobalt concentrations (0.028 mg/L) was higher than the most recent cobalt concentration observed at compliance well

ARGWC-22 (0.0055 mg/L in September 2020). Vertical delineation effort for cobalt at ARGWC-22 will continue with additional sampling events to statistically evaluate the delineation data. After evaluation of additional data, the installation of a deeper vertical extent well will be considered.

Analytical results for vertical delineation piezometer ARAMW-8 indicate that lithium concentrations (0.0044 mg/L) are below the state GWPS (0.013 mg/L), thus vertically delineating the GWPS exceedance for lithium at compliance well ARGWC-23. Molybdenum concentrations observed at ARAMW-8 (0.056 mg/L), however, are above the state GWPS (0.015 mg/L) for molybdenum. Delineation piezometer ARAMW-8 will continue to be monitored to better evaluate the vertical delineation for molybdenum at well ARGWC-23. These delineation piezometers were first sampled in December 2020 and were sampled again in February 2021 with the receipt of data expected in late February to early March 2021. After evaluation of additional data, the installation of a deeper vertical extent wells will be considered.

3.3 Updated Conceptual Site Model

Following the collection and assessment of the additional data described in Sections 3.1 and 3.2, the conceptual site model for the AP-2 DAS unit has been updated accordingly. The update was to delineate SSLs identified during the October 2020 semi-annual event and to evaluate the geochemical profile to be used for evaluating the feasibility of monitored natural attenuation (MNA). The additional data indicated:

- Groundwater level monitoring data collected in 2020 and February 2021 from the Site monitoring wells, and delineation piezometers show stable water level trends, and the potentiometric maps reflect groundwater generally flowing across AP-2 DAS toward the south toward Beaverdam Creek.
- Initial sampling data from the two vertical delineation piezometers (ARAMW-7 and ARAMW-8) in November and December 2020 indicates lithium is vertically delineated at the Site. Vertical delineations of cobalt and molybdenum are ongoing with additional data collection. Additional groundwater quality data is needed from these piezometers to better understand the vertical extent and planning for deeper vertical extent piezometers. Cobalt concentrations in surface water sample data collected from Beaverdam Creek in February 2021 were below the GWPS. Lithium and molybdenum were not detected in the February 2021 surface water samples. The Beaverdam Creek February 2021 surface water sample data were used to horizontally delineate the cobalt, lithium, and molybdenum SSLs.

- As discussed in Section 3.1, heterogeneity exists in the geochemical profile of both upgradient and downgradient wells and piezometers. This may indicate different sources of the groundwater flowing through the water table aquifer which may be sourced dominantly from precipitation at some locations and from deeper bedrock at other locations. This heterogeneity of upgradient and downgradient wells and piezometers will be further assessed using additional major cation and anion analytical data collected in February 2021. This data will be evaluated with previous geochemical data to help characterize the groundwater geochemical profile and whether MNA is occurring at the Site.

4.0 UPDATED EVALUATION OF CORRECTIVE MEASURES

Based on the data collected to date, the six potential corrective measures proposed have been retained and will continue to be evaluated as further site-specific data is collected.

4.1 Geochemical Approaches (In-Situ Injection)

In-situ injections of reagents are a remediation technology for inorganic constituents such as cobalt, lithium, and molybdenum. Cobalt and molybdenum can be precipitated and/or immobilized under different combinations of pH and redox conditions. Lithium, however, because of its low reactivity and high solubility is not amenable to precipitation or immobilization involving manipulation of pH and redox conditions, but lithium may be sorbed to aluminum and iron oxides as well as clay minerals. To understand the biogeochemical processes that would effectively immobilize target constituents in groundwater, site-specific bench-scale and pilot-scale treatability studies are needed to prepare an effective amendment to create the appropriate conditions for the precipitation and/or sorption of these constituents without mobilizing other naturally occurring constituents.

Air-sparging, in-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility and/or toxicity of certain inorganic compounds. However, mixing and contact with the target constituents are necessary for these in-situ methods, and can be difficult in heterogeneous and fine-grained materials. In-situ injections may be considered a potentially viable corrective measure to address cobalt and other metals in groundwater at AP-2 DAS, especially in smaller, more localized areas. In-situ injection would likely need to be combined with an alternative technology to address lithium to provide a complete remedy for the former CCR Unit. This technology will be retained for further evaluation.

4.2 Hydraulic Containment (Pump and Treat)

Generally, hydraulic containment (or control) refers to the use of groundwater extraction to artificially induce a hydraulic gradient and capture or control the migration of impacted groundwater. Groundwater pump and treat (P&T), is often considered to be a viable remedial technology at many sites (US EPA, 1996). This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature or sewer system, reinjection into the aquifer, or reuse at the Site. Groundwater P&T is often relatively slow as a means to restore groundwater quality over a long-term period, but can be effective as an interim measure, or combined with another measure, to provide hydraulic containment to limit constituent migration toward a potential receptor.

Groundwater extraction for hydraulic control can often effectively address the variety of inorganic constituents encountered at CCR sites, including cobalt, lithium, and molybdenum. Extraction technologies may be more efficient for conservative species, such as lithium, which are not readily attenuated by other mechanisms (e.g., precipitation, adsorption). Therefore, P&T is a potentially viable corrective measure for cobalt, lithium, and molybdenum in groundwater at AP-2 DAS and will be retained for further evaluation.

4.3 Monitored Natural Attenuation

The US EPA defines monitored natural attenuation (MNA) as the reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. The natural attenuation processes that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater (US EPA, 2015).

Attenuation mechanisms for inorganic constituents, such as cobalt, lithium, molybdenum, are either physical (e.g., dilution, dispersion, flushing, and related processes) or chemical (e.g., sorption or oxidation reduction reactions). Both molybdenum and cobalt undergo sorption to iron and manganese oxides and depending on specific redox conditions. Thus, chemical attenuation mechanisms through sorption reactions, discussed in more detail below, may be viable as a corrective measure for cobalt and molybdenum. Physical attenuation mechanisms such as dilution and dispersion may be appropriate as a polishing step. Lithium requires physical attenuation mechanisms instead of chemical attenuation mechanisms.

The US EPA uses four phases to establish whether MNA can be successfully implemented at a given site. The phases (or steps) include:

1. Demonstration that SSLs in groundwater are delineated and stable or decreasing.
2. Evaluation of the mechanisms and rates of attenuation.
3. Assessment if the capacity of the aquifer is sufficient to attenuate the mass of constituents in groundwater and that the immobilized constituents are stable and will not remobilize.
4. Design of a performance monitoring program based on the mechanisms of attenuation and including a decision framework for consideration of a contingent remedy tailored to site-specific conditions should MNA not perform adequately.

A successful MNA approach requires a good understanding of hydrogeologic conditions and may require additional information and monitoring over an extended period of time. MNA is a relatively slow remedy to obtain site closure when used in isolation; as such, MNA is frequently used in combination with other remedies, including source control.

Physical and chemical MNA mechanisms for cobalt, lithium, and molybdenum including dilution, dispersion, and sorption can be operational without the potential for additional mass of constituents migrating to downgradient groundwater. Therefore, MNA is a potentially viable corrective measure for cobalt, lithium, and molybdenum in groundwater at AP-2 DAS and will be retained for further evaluation.

4.4 Permeable Reactive Barriers

Permeable reactive barriers (PRBs) can present a viable alternative for in-situ treatment of cobalt and molybdenum. PRBs typically involve the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. The use of PRBs for cobalt and molybdenum has been tested (e.g., Ludwig et al., 2002; ITRC, 2011), but additional site-specific testing is needed to confirm the applicability of this technology to remove molybdenum from groundwater because testing has shown early breakthrough with reactive media (Morrison et al., 2006). Although laboratory studies with zeolites and clays have shown to sorb lithium, due to its low reactivity and lack of field testing, PRBs are not recommended for lithium remediation.

AP-2 DAS will be closed by removal of CCR material to a lined-landfill. Removal of the source material limits the use of PRB as a remedial alternative at the Site. Additionally, there is limited space available downgradient of wells where COCs exceed groundwater protection standards. For these reasons, a PRB is likely not implementable or effective and this corrective measure has been removed from consideration.

4.5 Phytoremediation

Phytoremediation is the use of plants to degrade, immobilize, or contain constituents in soil, groundwater, surface water, and sediments. Phytotechnologies include a variety of applications ranging from constructed wetlands, alternative landfill covers, tree plantations for hydraulic control, use of plants for slope stabilization, planted (riparian) buffers for nutrient management and sediment control, and the classical applications of constituent uptake and degradation. Phytoremediation has emerged as a viable alternative to more active environmental cleanup technologies, especially for large areas with relatively low levels of constituents in shallow soils or groundwater.

The effectiveness of groundwater remediation using traditional phytoremediation approaches may be limited by compacted soil conditions that impede root penetration; or target groundwater that is too deep for root access. Given that downgradient groundwater wells at the Site that exhibited SSLs for cobalt, lithium, and molybdenum are screened to depths of up to 45 ft bgs, traditional plantings for phytoremediation are not expected to be successful. However, more recently, an engineered approach to phytoremediation, the *TreeWell*® system (which is a proprietary system developed by Applied Natural Sciences), has been shown to overcome these constraints (e.g., Gatliff et al., 2016).

By installing a cased "well" for tree planting using large diameter auger (LDA) technology, extraction of deeper groundwater zones (i.e., in excess of 50 ft bgs) can be achieved since the surface of the "well" is sealed and only groundwater from a targeted zone is allowed into the cased-off borehole. This type of system mirrors a traditional mechanical extraction system using the trees as pumps.

Also, the advantage of the system includes no above-ground water management needs and limited long-term operations and maintenance (O&M) requirements following the establishment of the tree system.

With the exception of the *TreeWell*® technology, phytoremediation technologies are not likely feasible at the AP-2 DAS unit due to the depth of SSLs. Although the *TreeWell*® technology can access SSLs at depth, the groundwater extraction rate needed to limit SSL migration needs to be further evaluated to determine if the capacity of the *TreeWell*® technology is applicable at AP-2 DAS. The limited physical space for installation of a phytoremediation system between AP-2 DAS and the adjacent surface water body (Beaverdam Creek) may cause the technology to be eliminated from consideration. Thus, phytoremediation may be technically feasible as a remedial technology for cobalt, lithium, and molybdenum; however, there is not enough site information currently available to decide to eliminate this technology from further evaluation and this technology will be retained until data indicates it is not a feasible technology.

4.6 Subsurface Vertical Barrier Walls

Subsurface vertical barrier walls (sometimes referred to as slurry walls) have been used for seep control and groundwater cutoff at impoundments and waste disposal units for more than three decades. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. This approach involves placing barrier walls typically keyed into the bedrock frequently around the source area (or the downgradient limits of the source area), to prevent future migration of dissolved constituents in groundwater from beneath

the source to downgradient areas or a lower confining unit. Using the installation of these low-permeability walls is similar to the methods described for PRBs above.

Groundwater pumping is required upgradient of the barrier wall to maintain an inward hydraulic gradient and avoid groundwater mounding behind the wall. The extracted groundwater would likely require treatment in an above-ground treatment system.

Similar to the use of a PRB at AP-2 DAS, the complete removal of CCR source material and a lack of space available downgradient of the groundwater monitoring wells where constituents of concern (COCs) exceed groundwater protection standards, subsurface vertical barrier walls have been removed from consideration.

4.7 Summary of Corrective Measures Evaluated

Based on the data collected to date, four of the six potential corrective measures being evaluated for AP-2 DAS will be retained for further evaluation. Two potential corrective measure have been removed.

- Permeable Reactive Barrier (PRB) – AP-2 DAS will be closed by removal of CCR material to a lined-landfill. Removal of the source material limits the use of PRB as a remedial alternative at the Site. Additionally, there is limited space available downgradient of wells where COCs exceed groundwater protection standards. For these reasons, PRB has been removed from consideration.
- Subsurface Vertical Barrier Walls – Similar to the use of PRBs, the complete removal of the CCR source material and a lack space available downgradient of wells where COCs exceed groundwater protection standards, subsurface vertical barrier walls have been removed from consideration.

Given that groundwater conditions and/or statistical results continue to change and are likely to also be affected by closure and construction activities at AP-2 DAS, an adaptive site management approach will be used to address groundwater conditions as a consequence of closure activities. Continued groundwater monitoring and updates to the statistical analyses will further refine the conceptual site model (CSM) and allow for the continued evaluation of an appropriate groundwater corrective measure at the Site.

5.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE

The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. During the pond closure by excavation and consolidation of CCR, temporary changes in site conditions may occur that must be considered as part of remedy selection. Georgia Power has initiated activities as outlined in the ACM Report (Wood, 2020a) to support the groundwater remedy selection process and address potential changes in site conditions as appropriate. The adaptive site management approach toward remedy selection may be adjusted over the Site's life cycle as new site information and technologies become available. To this end, Georgia Power will continue its data collection efforts as necessary in support of efforts to refine the CSM and to further evaluate the feasibility of each corrective measure proposed in the ACM Report. At this time, and as discussed in Section 4.0, four of the corrective measures outlined in the ACM Report (Wood, 2020a) are being retained for further evaluation. The four corrective measures which are being retained are as follows:

- Geochemical Approaches (In-Situ Injection)
- Hydraulic Containment (Pump and Treat)
- In-Situ Solidification/Stabilization (ISS)
- Monitored Natural Attenuation (MNA)

Supplementary data collection and evaluation activities proposed to be completed are presented on **Table 4: Proposed ACM Supplementary Data Analyses and Collection Tasks for First Semi-Annual Period 2021**, with the key elements summarized below. Additional data collection, analysis, and site-specific evaluation are necessary to refine the CSM and to further evaluate the feasibility of each corrective measure presented herein such that an appropriate groundwater corrective measure may be selected. Some of the data needed to refine the conceptual site model may be collected concurrent with routine groundwater monitoring events under the assessment monitoring program.

Additional data collection and analysis outside of routine groundwater monitoring events may include aquifer testing, geochemical modeling, material compatibility testing, bench scale studies, and pilot tests and may require an estimated one to two additional years to complete. Once sufficient data are available to arrive at a focused number of corrective measures or a combination of corrective measures that would provide an effective groundwater remedy, necessary steps will be taken to implement a remedy at the Site in accordance with GA EPD Rule 391-3-4.10.

Supplementary data collection and evaluation activities proposed to be completed during the next semi-annual reporting period are presented in the **Table 4: Proposed ACM Supplementary Data Analyses and Collection Tasks for First Semi-Annual Period 2021** and summarized below.

- Collect and analyze samples for major anions and cations for all compliance wells and delineation piezometers during semi-annual sampling events.
- Statistical evaluation of analytical data at vertical delineation wells ARAMW-7 and ARAMW-8 upon completion of 4 sampling events.
- Evaluate a plume stability analysis using time-series charts and trend analysis using linear regression or non-parametric trend tests with available data to determine if the plume is stable at AP-2 DAS.
- Evaluate plausible ionic speciation of the contaminants by reviewing field parameters (pH, ORP, temperature, and specific conductance) collected during previous field events.
- Perform additional aquifer tests at compliance wells to refine the understanding of localized hydrogeologic conditions and to assist in evaluating contaminant migration rates.

Georgia Power will continue to prepare semi-annual progress reports to document AP-2 DAS conditions, results associated with additional data collection, and the progress in selecting and designing a groundwater remedy in accordance with GA EPD Rule 391-3-4.10(6)(a). Georgia Power will include future semi-annual progress reports in routine groundwater monitoring and corrective action reports.

6.0 REFERENCES

Gatliff, E., Linton P., Riddle, D., and Thomas P., 2016, Phytoremediation of Soil and Groundwater.

ITRC (Interstate Technology & Regulatory Council), 2011, Permeable Reactive Barrier: Technology Update, Washington D.C.: Interstate Technology & Regulatory Council, PRB: Technology Update Team.

Ludwig R.D., McGregor R.G., & Blowes D.W., Benner S.G., Mountjoy K., 2002. A Permeable Reactive Barrier for Treatment of Heavy Metals. Ground water. 40. 59-66.

Morrison, S. J., Mushovic, P. S., and Niesen, P. L., 2006, Early Breakthrough of Molybdenum and Uranium in a Permeable Reactive Barrier. Environmental Science and Technology Volume 40.

US Environmental Protection Agency, 1996, Final Guidance: Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites, EPA 540/R-96/023, Office of Solid Wasted and Emergency Response Directive 9283.1-12, October 1996.

US EPA, 2015. Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites, U.S Environmental Protection Agency, Office of Solid Wasted and Emergency Response, Directive 9283.1-36. August

Wood Environment & Infrastructure Solutions, Inc., 2020a. Assessment of Corrective Measures Report – Georgia Power Company Plant Arkwright Ash Pond 2 Dry Ash Stockpile, December 2020.

Wood Environment & Infrastructure Solutions, Inc., 2020b. 2020 Annual Groundwater Monitoring and Corrective Action Report – Georgia Power Company Plant Arkwright AP-2 DAS, July 31, 2020.

Wood Environment & Infrastructure Solutions, Inc., 2021. 2020 Semi-Annual Groundwater Monitoring and Corrective Action Report – Georgia Power Company Plant Arkwright AP-2 Dry Ash Stockpile, February 26, 2021.

TABLES

TABLE 1
EVALUATION OF REMEDIAL TECHNOLOGIES

	Regulatory Citation for Criteria:	Georgia Rule 391-3-4-.10(6)(a)	
Corrective Measure	**Description**	**Performance**	**Reliability**
Geochemical Approaches (In-Situ Injection)	Use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of Cobalt (Co) and molybdenum Mo. Under anaerobic conditions, Co would be attenuated within sparingly soluble sulfide minerals; this approach might also increase the attenuation of Mo. Because Lithium (Li) does not readily adsorb or precipitate, in-situ injections are likely not an effective remedial technology for Li. Under aerobic conditions, soluble iron or manganese and oxygen (either via air sparging or through a chemical oxidant) would be injected to promote the formation of iron or manganese (oxy-) hydroxides for subsequent sorption of Co (and potentially, Mo) onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including Co. However, the main attenuation mechanism for Co and Mo is sorption, which is more dependent on pH than redox.	The effective immobilization of Co has been shown under aerobic and anaerobic conditions; however, the anaerobic approach (involving the injection of an electron donor together with iron or manganese and sulfur) requires careful study and testing. While aerobic approaches are somewhat less complex, additional aquifer characterization is needed to further evaluate these options. It is currently not well understood whether molybdenum can be efficiently attenuated using in- situ redox manipulations due to slow reaction kinetics. Mo attenuation under both aerobic and anaerobic conditions needs to be further evaluated but is expected to occur. Mo is more strongly sorbed to aluminum oxides than other metal oxides, and it is generally less sorptive and more mobile compared to Co. It is not thought that lithium can be efficiently attenuated using in- situ redox manipulations because of Lithium's low reactivity. Lithium is generally less sorptive and more mobile compared to Co.	Reliability dependent on permeability of the subsurface and the amount and distribution of secondary iron or manganese (oxy-) hydroxides (for aerobic approach), or electron donors and soluble iron or manganese and sulfur that can be consistently distributed (for anaerobic approach). Reliable technology if injected materials can be distributed throughout the impacted aquifer. Bench- and/or pilot-scale treatability testing programs are needed to understand the biogeochemical processes that would effectively reduce migration of Co and Mo in groundwater. In-Situ Injection would need to be used in conjunction with another technology to reduce migration of Lithium.
Pump and Treat (Hydraulic Containment)	Pump and Treat (P&T) refers to the use of groundwater extraction to induce a hydraulic gradient for hydraulic capture or control the migration of impacted groundwater. This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature, reinjection into the groundwater, or reuse (e.g., land application, CCR conditioning, etc.). It is applicable to a variable mix of inorganic constituents, including dissolved Co, Mo, and Li.	P&T is effective at providing hydraulic control, but it is unclear whether full groundwater remediation can be achieved without further understanding attenuation mechanisms at the Site. At the AP-2 Dry Ash Stockpile, implementation of the corrective measure is contingent on completing additional assessment activities (i.e. high-resolution site characterization, additional pump tests, flow modeling, and capture zone analysis). This is needed to refine the constituent distribution in the subsurface to target specific zones for pumping for improved mass recovery efficiency/ effectiveness and to further evaluate the potential remedy performance.	Generally reliable for hydraulic containment, but uncertainty exists whether groundwater remediation goals can be achieved within a reasonable time frame without further understanding attenuation mechanisms.
Monitored Natural Attenuation (MNA)	MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods. Under certain conditions (e.g., through sorption, mineral precipitation or oxidation- reduction reactions), MNA effectively reduces the dissolved concentrations of inorganic constituents in groundwater. Attenuation mechanisms for inorganic constituents at CCR sites, including cobalt (Co) molybdenum (Mo) and Lithium (Li) at AP-2 Dry Ash Stockpile, are either physical (e.g. dilution, dispersion, flushing, and related processes) or chemical (e.g., sorption or oxidation reduction reactions). The chemical attenuation processes include precipitation and sorption reactions such as adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Further, oxidation-reduction (redox) reactions, via abiotic or biotic processes, can transform the valence states of some inorganic constituents to less soluble and thus less mobile forms. For Co and Mo, the main attenuation processes include sorption to iron and manganese oxides (Co and Mo), aluminum oxides (Mo), and formation of sparingly soluble sulfide minerals (Co). For Li, aluminum salts have shown promise for precipitating Li out of freshwater. Lithium's low reactivity and high solubility makes it difficult to chemically attenuate such that physical methods of dispersion and flushing are needed for attenuation.	Physical and chemical MNA mechanisms for Co, Mo, and Li, including dilution, dispersion, sorption, and oxidation reduction reactions can be effective at achieving groundwater protection standards (GWPS) within a reasonable time frame. Attenuation processes for Co and Mo may already be occurring at the site as evidenced by data from some wells. Source control will improve the mass balance such that the buffer capacity of the aquifer is unlikely to be exhausted, and the attenuation processes already at work for Co at AP-2 Dry Ash Stockpile will further enhance ongoing MNA. Lithium's low reactivity and high solubility makes it difficult to chemically attenuate such that physical methods of dispersion and flushing are needed for attenuation.	Reliable as long as the aquifer conditions that result in Co, Mo, and Li attenuation remain favorable and/or are being enhanced and sufficient attenuation capacity is present. MNA is reliable and can either be used as a stand-alone corrective measure for groundwater impacted by dissolved Co, Mo, and/or Li, or in combination with a second technology, particularly for Li.
Permeable Reactive Barrier	Permeable reactive barrier (PRB) technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. Either ZVI-Carbon matrix or solid carbon (bio-barrier) are currently proposed for the concurrent removal of Co and Mo. The carbon could be composed of peat moss, mulch or another carbon source. Exact placement of the PRB is contingent on finalization of the nature and extent characterization. PRB walls are typically keyed into the bedrock. While the relatively shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the higher permeability/conductivity of the PRB is not expected to impede groundwater flow. PRBs can also be constructed as "funnel and gate" systems, where a barrier wall directs groundwater to a smaller "treatment gate" filled with reactive media.	PRBs have been shown to effectively address Co and Mo in groundwater if the right mix of reactive materials (e.g., ZVI and carbon) is selected for concurrent removal/immobilization of these constituents. The approach is expected to achieve GWPS for Co and Mo as impacted groundwater passes through the reactive barrier. Mo redox kinetics may be slow and hence a thicker wall might be needed relative to solely treating for Co. Furthermore, additional testing is required to select the appropriate sorptive media mix, especially related to Mo. Due to its low reactivity, lithium may be more challenging to treat using PRBs. In laboratory studies, zeolites and clays such as bentonite and kaolin have been shown to exhibit lithium-sorbing characteristics. However, there have not been field testing of these material and generally PRBs are not recommended for Lithium remediation.	Reliable groundwater corrective measure, but loss of reactivity over time may require re-installation depending on the duration of the remedy. Additional data collection, including conducting a bench and/or pilot study, is needed to better characterize current attenuation mechanisms and/or select the appropriate reactive media mix for a PRB wall. A different media and a secondary technology may be needed to remediate Lithium.
Phytoremediation / *TreeWell*®	Phytoremediation uses trees and other plants to degrade or immobilize constituents or achieve hydraulic control without the need for an above-ground water treatment system and infrastructure. Within the context of the AP-2 Dry Ash Stockpile, this corrective measure would likely use an engineered (proprietary) TreeWell® phytoremediation system along the point of compliance or downgradient edge of the impacted groundwater for hydraulic control. The system promotes root development to the targeted groundwater zone (depth), allowing for hydraulic control of impacted groundwater. In addition, immobilization of Co, Mo and Li within the root zone as well as incidental uptake of dissolved Co, Mo, and Li with groundwater is expected to occur concurrent with hydraulic control.	Once established (typically at the end of the third growing season), a TreeWell® system is effective for providing hydraulic containment of groundwater, and potential reduction of Co concentrations through immobilization and/or uptake and sequestration in the tree biomass; however, the main purpose is to provide hydraulic control. Given the site-specific hydrogeology and reported Co, Mo, and Li groundwater concentrations surrounding the AP-2 Dry Ash Stockpile, the approach is currently considered to be applicable in this setting. However, additional aquifer testing and/or groundwater flow modeling may be needed to confirm suitability for the area downgradient of the AP-2 Dry Ash Stockpile.	Engineered phytoremediation is a proven technology where hydrogeologic factors are taken into account (e.g., hydraulic conductivity, flow velocity, depth to impacted groundwater zone, etc.). This is considered an active remedial approach through the use of trees as the "pumps" driving the system. Careful design will be needed to select the proper species, which will include consideration of groundwater chemistry, plant uptake of constituents, and groundwater flow modeling to evaluate the required number and placement of TreeWell® units.

TABLE 1
EVALUATION OF REMEDIAL TECHNOLOGIES

	Regulatory Citation for Criteria:	Georgia Rule 391-3-4-.10(6)(a)	
Corrective Measure	**Description**	**Performance**	**Reliability**
Subsurface Vertical Barrier Walls	This approach involves placing a barrier to groundwater flow in the subsurface, frequently around a source area, to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. Barrier walls can also be used in downgradient applications; to limit discharge to a surface water feature or to reduce aquifer recharge from an adjacent surface water feature when groundwater extraction wells are placed near one. A variety of barrier materials can be used, including cement and/or bentonite slurries, geomembrane composite materials, or driven materials such as steel or vinyl sheet pile. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.	Barrier walls are a proven technology for seepage control and/or groundwater cutoff at impoundments. Slurry walls are limited by the depth of installation, which is approximately 90 ft bgs. However, site-specific geologic and technology-specific considerations may limit this depth to shallower installations. Within the context of AP-2 Dry Ash Stockpile, a barrier wall might be used in conjunction with a "funnel and gate" system for a PRB rather than a stand-alone technology. As such, groundwater with Co, Mo, and Li above GWPS could either be directed to "treatment gates" for passive treatment (in a PRB) or migration of impacted groundwater could be minimized via barrier wall installation. Additional treatment technology, beyond treatment for Cobalt, would be needed to treat Lithium in either extracted groundwater or in-situ. Additional subsurface investigations, aquifer testing, and compatibility testing with site- specific groundwater will be needed.	Generally reliable as a barrier to groundwater flow; however, treatment of downgradient groundwater is incidental and not the primary objective.

TABLE 1
EVALUATION OF REMEDIAL TECHNOLOGIES

Corrective Measure	Georgia Rule 391-3-4-.10(6)(a) Ease of Implementation	Georgia Rule 391-3-4-.10(6)(a) Potential Impacts	Georgia Rule 391-3-4-.10(6)(a) Time Requirement to Begin/Complete
Geochemical Approaches (In-Situ Injection)	Moderate. Installation of injection well network or other injection infrastructure would be required. Alternative installation approaches may be considered, such as along the downgradient edge of impacted groundwater, which would function similar to a PRB application. Potential for clogging of aquifer matrix and/or injection well infrastructure. Chemical distribution during injections (i.e., radius of influence) needs to be evaluated.	Minimal impacts are expected if remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and bench/pilot study results. Redox-altering processes have the potential to mobilize naturally-occurring constituents as an unintended consequence if not properly studied and implemented.	Installation of the injection network can be accomplished relatively quickly (1 to 2 months). However, a thorough pre-design investigation, geochemical modeling, and/or bench- and/or pilot-testing will be required to obtain design parameters prior to design and construction of the corrective measure, which may take up to 24 months. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation process kinetics of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.
Pump and Treat (Hydraulic Containment)	Moderate. Proven approach, and supplemental installation of extraction wells/trenches is fairly straightforward. The extracted groundwater may potentially require an above-ground treatment system. A variety of sorption and precipitation approaches exist for ex-situ treatment of Co and Mo. Treatment of Lithium would require a different treatment technology than Co and Mo. Operation and maintenance (O&M) requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.	Moderate. The main potential impacts are related to the presence and operation of an on-site above-ground water treatment facility and related infrastructure to convey and treat extracted groundwater. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone. Also nearby surface water will need to be taken into account for hydraulic and geochemical impacts to pumping groundwater.	Installation of extraction wells and/or trenches can be accomplished relatively quickly (1 to 2 months). However, additional aquifer testing, system design and installation, and permit approval may be required, which may take up to 24 months. The initiation of the approach would be contingent on the start-up of the wastewater treatment infrastructure. Hydraulic containment can be achieved relatively quickly after startup of the extraction system, but uncertainty exists with respect to the time to achieve GWPS without additional data collection to better understand attenuation mechanisms for Co, Mo, and Li.
Monitored Natural Attenuation (MNA)	Reasonably implementable with respect to infrastructure, but moderate to complex with respect to documentation. Proven approach, but additional data are needed to show that the existing attenuation capacity is sufficient to meet site objectives within a reasonable timeframe. A monitoring well network already exists to implement future groundwater monitoring efforts.	None. MNA relies on the natural processes active in the aquifer matrix to reduce constituent concentrations without disturbing the surface or the subsurface.	The infrastructure to initiate MNA is already in place. Demonstrating attenuation mechanisms and capacity can be time-consuming and can take up to 24 months. MNA is expected to be successful within a reasonable time frame.
Permeable Reactive Barrier	Moderate to difficult. Trenching would be required to install a mix of reactive materials in the subsurface. Continuous trenching may be the most feasible construction method. Site-specific geology (i.e., partially weathered bedrock layer) poses a possible constructability challenge when attempting to key PRB material into competent bedrock. Installation methods and materials are readily available. Once installed, treatment will be passive and O&M requirements are minimal if replacement of the PRB is not necessary.	Minimal impacts are expected following the construction of the remedy. However, ZVI has the potential to create anaerobic conditions downgradient of the PRB wall that may mobilize redox-sensitive naturally-occurring constituents. These conditions need to be carefully monitored. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures.	Installation of a PRB can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, bench- and/or pilot- testing would be required to obtain design parameters prior to design and construction of the remedy, which may take up to 24 months. Once installed, the time to achieve GWPS downgradient of the PRB is anticipated to be relatively quick.
Phytoremediation / *TreeWell*®	Reasonably implementable to moderate. Engineered approach has been proven effective, and specific depth zones can be targeted. Trees are installed as "tree wells" in a large diameter boring to get the roots deep enough to intercept impacted groundwater flow paths. Area must be clear of above- and below- ground structures (i.e., power lines). The system, once established (approximately three growing seasons), is a self-maintaining, sustainable remedial system that has no external energy requirements and little maintenance (i.e., efforts normally associated with landscaping).	Minimal impacts are expected. In fact, there are several positive impacts expected, including enhanced aesthetics, wildlife habitat, and limited energy consumption.	The design phase will require some groundwater modeling for optimal placement of the TreeWell® units, which may take up to 6 months. Depending on the number of required units, the installation effort is expected to last several weeks. Hydraulic capture/control is expected approximately three years after planting and system performance is expected to further improve over time.
Subsurface Vertical Barrier Walls	Moderate to difficult. Trenching will be required to fill in the various slurry mixes; alternatively, sheet pile installations can be accomplished without excavation of trenches. The application of barrier walls is limited by the depth of installation, which similar to PRBs, should be keyed into a low permeability layer such as a thick clay layer or bedrock. Installation methods and materials are readily available. Once installed, above-ground infrastructure to pump and treat groundwater will be required. O&M requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.	Minimal impacts are expected following the construction of the remedy. Short- term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures. Changes to groundwater flow patterns due to installation of the barrier wall are expected, which can affect other aspects of groundwater corrective action. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone that may result in the mobilization of other constituents that may require treatment.	Installation of a barrier wall can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, some design phase and additional aquifer and compatibility testing will be required, which may take up to 24 months. Once installed, preventing migration of constituents dissolved in groundwater is anticipated to be relatively quick. Since this approach does not treat the downgradient area of impacted groundwater but prevents migration from a source area, it will likely have to be maintained long- term and coupled with other approaches.

TABLE 1
EVALUATION OF REMEDIAL TECHNOLOGIES

	Georgia Rule 391-3-4-.10(6)(a)			
Corrective Measure	**Institutional Requirements**	**Other Environmental or Public Health Requirements**	**Relative Costs**	**Retention Evaluation**
Geochemical Approaches (In-Situ Injection)	Deed restrictions may be necessary until in-situ treatment has achieved GWPS. An underground injection control (UIC) permit (for in-situ injections) would be required to implement this corrective measure. No other institutional requirements are expected at this time.	None expected at this point. Potential mobilization of redox- sensitive constituents exists during implementation of an anerobic attenuation approach. Following installation, the remedy is passive.	Medium (depending on expanse of injection network required and injectate volume required per derived design parameters)	Retained for further analysis; may be used as a stand-alone corrective measure or in conjunction with other potential groundwater corrective measures.
Pump and Treat (Hydraulic Containment)	Depending on the effluent management strategy, an NPDES permit may be required, or obtaining an underground injection control (UIC) permit may be needed if groundwater reinjection is chosen. In addition, deed restrictions may be required as long as groundwater conditions are above regulatory standards for unrestricted use.	Above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on remedy duration, complexity of above-ground treatment system, and volume of water processed)	Retained for further analysis; may be used as a stand-alone corrective measure or in conjunction with other potential groundwater corrective measures.
Monitored Natural Attenuation (MNA)	MNA may require the implementation of institutional controls, such as deed restrictions, to preclude potential exposure to groundwater within the footprint of impacted groundwater until GWPS are achieved.	Little to no physical disruption to remediation areas and no adverse construction- related impacts are expected on the surrounding community.	Low to medium	Retained for further analysis; may be used as a stand-alone corrective measure or in conjunction with other potential groundwater corrective measures.
Permeable Reactive Barrier	Deed restrictions may be necessary for groundwater areas upgradient of the PRB (if not installed along the waste boundary). No other institutional requirements are expected at this time.	None expected at this point. Following installation, the remedy is passive. However, certain treatment media (such as ZVI) have the potential to mobilize naturally-occurring constituents downgradient of the PRB.	Medium to high (for installation) - minimal O&M requirements if replacement is not necessary	Not retained for further analysis; limited space available downgradient of impacted wells; removal of the source material limits the use of PRBs as a remedial alternative.
Phytoremediation / *TreeWell*®	Deed restrictions may be necessary for groundwater areas upgradient of the TreeWell® system. No other institutional requirements are expected at this time.	None expected at this point. Innovative and green technology may be positively received by various stakeholders. Following installation, the remedy is passive and does not require external energy.	Medium (for installation) - minimal O&M requirements	Retained for further analysis; may be used as a stand-alone corrective measure or in conjunction with other potential groundwater corrective measures.
Subsurface Vertical Barrier Walls	Deed restrictions may be necessary for groundwater areas downgradient of the barrier wall until remedial goals are met. No other institutional requirements are expected at this time.	Due to the need for groundwater extraction associated with barrier walls, above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on length and depth of wall, remedy duration and complexity of above-ground treatment system)	Not retained for further analysis; limited space available downgradient of impacted wells; removal of the source material limits the use of subsurface vertical barrier walls as a remedial alternative.

TABLE 2

SUMMARY OF MONITORING NETWORK WELL AND PIEZOMETER CONSTRUCTION AND GROUNDWATER ELEVATIONS

Well	Installation Date	Northing [1]	Easting [1]	Top of Casing Elevation (feet above MSL)[2] (Prior to June 2020 Resurvey)	Top of Casing Elevation (feet above MSL)[2] (June 2020 Resurvey)[3]	Ground Surface Elevation (feet above MSL)[2] (June 2020 Resurvey)[3]	Top of Screen Elevation (feet above MSL)[3]	Screen Bottom Elevation (feet above MSL)[3]	Screen Length (feet)	Total Well Depth on Construction Log (feet below land surface)	Total Well Depth Measured September 2020 (feet below TOC)	Groundwater Zone Screened	Location	Depth to Water (feet below TOC) 9/28/2020	Groundwater Elevation (feet above MSL) 9/28/2020
Monitoring Network Compliance Wells															
ARGWA-19	12/16/2008	1063774.45	2439488.71	343.48	343.30	339.86	300.18	290.18	10.00	49.98	44.55	Bedrock	Upgradient	26.60	316.70
ARGWA-20	12/4/2008	1063732.73	2439088.01	331.48	331.28	327.73	303.18	293.18	10.00	34.85	29.44	Overburden	Upgradient	14.24	317.04
ARGWC-21	12/2/2008	1062941.24	2439112.52	309.40	309.15	305.97	291.70	281.70	10.00	24.57	18.71	Overburden	Downgradient	14.12	295.03
ARGWC-22	11/19/2019	1063039.36	2438925.04	310.18	309.95	307.01	292.01	282.01	10.00	25.00	27.74	Overburden	Downgradient	13.67	296.28
ARGWC-23	11/20/2019	1062884.38	2439202.38	307.79	307.70	304.29	289.29	279.29	10.00	25.00	28.08	Overburden	Downgradient	12.10	295.60
Delineation Piezometers															
ARAMW-1	11/20/2019	1062938.38	2439120.01	308.67	308.51	305.07	271.07	261.07	10.00	44.00	45.32	Bedrock	Downgradient	13.39	295.12
ARAMW-2	11/20/2019	1062925.96	2439114.97	308.52	308.27	305.12	293.12	283.12	10.00	22.00	24.84	Overburden	Downgradient	13.58	294.69
ARAMW-7	11/14/2020	1063049.07	2438913.27	NA	309.81	307.13	269.30	259.30	10.00	48.00	50.82[4]	Bedrock	Downgradient	Not Installed[6]	
ARAMW-8	11/13/2020	1062895.98	2439197.40	NA	307.36	304.53	268.10	258.10	10.00	47.00	49.61[4]	Bedrock	Downgradient	Not Installed[6]	

Notes:

1. Horizontal locations referenced to Georgia State Plane West, North American Datum of (NAD) 1983 surveyed in June 2020.
2. MSL indicates feet above mean sea level and referenced to North American Vertical Datum of 1988
3. Elevations based on June 2020 survey.
4. Total well depths for piezometers ARAMW-7 and ARAMW-8 were measured November 13 and 14, 2020.
5. TOC indicates top of casing. NA indicates not applicable
6. ARAMW-7 and ARAMW-8 were installed in November 2020, thus was not measured in September 2020.

Prepared by: NJM 1/4/2021
Checked by: EIWP 2/10/2021

TABLE 3
WATER QUALITY ANALYTICAL SUMMARY

Groundwater Analytical Results in mg/L																			
Well ID	**Sample Date**	**Total Alkalinity as CaCO3**	**Bicarbonate Alkalinity as CaCO3**	**Carbonate Alkalinity as CaCO3**	**Boron**	**Calcium**	**Chloride**	**Cobalt**	**Fluoride**	**Dissolved Iron**	**Lithium**	**Magnesium**	**Dissolved Manganese**	**Molybdenum**	**pH**	**Potassium**	**Sodium**	**Sulfate**	**Sulfide**	**Total Dissolved Solids**
ARAMW-1	6/24/2020	170	170	<5.0	0.84	81	5.3	0.00097 J	0.21	0.42	0.0084	34	0.41	0.0051 J	6.31	5.5	21	250	<2.1	NA
ARAMW-2	6/24/2020	130	130	<5.0	0.89	89	4.3	0.0027	0.11	9.7	0.018	36	1.0	<0.00061	6.19	6.9	20	290	<2.1	NA
ARAMW-7	11/30/2020	120	120	<5.0	2.1	260	6.3	0.028	0.044 J	17	0.061	74	11	0.0012 J	6.00	13	27	990	<2.1	1600
ARAMW-8	12/1/2020	220	220	<5.0	0.40	81	12	0.0054	0.14	1.8	0.0044 J	25	2.9	0.056	7.05	7.0	22	120	<2.1	420
ARGWA-19	6/25/2020	33	33	<5.0	0.091	14	11	<0.00013	0.030 J	<0.020	0.0053	5.5	0.00089 J	<0.00061	5.80	2.6	13	9.8	<2.1	NA
ARGWA-20	6/25/2020	39	39	<5.0	0.081	9.6	5.1	0.00015 J	<0.026	<0.020	<0.0034	4.9	0.0028 J	<0.00061	5.61	1.5	9.7	16	<2.1	NA
ARGWC-21	6/25/2020	140	140	<5.0	0.82	80	3.7	0.00097 J	0.041 J	1.0	0.013	37	0.36	<0.00061	5.98	6.1	19	210	<2.1	NA
ARGWC-22	6/24/2020	96	96	<5.0	2.5	180	5.7	0.0047	0.048 J	6.2	0.023	87	16	<0.00061	5.82	4.6	26	810	<2.1	NA
ARGWC-23	6/25/2020	160	160	<5.0	0.42	72	3.4	0.0014 J	0.25	<0.020	0.043	13	0.62	0.055	6.37	2.4	14	77	<2.1	NA
Surface Water Analytical Results in mg/L																			
Surface Water Location ID on Beaverdam Creek	**Sample Date**	**Total Alkalinity as CaCO3**	**Bicarbonate Alkalinity as CaCO3**	**Carbonate Alkalinity as CaCO3**	**Boron**	**Calcium**	**Chloride**	**Cobalt**	**Fluoride**	**Dissolved Iron**	**Lithium**	**Magnesium**	**Dissolved Manganese**	**Molybdenum**	**pH**	**Potassium**	**Sodium**	**Sulfate**	**Sulfide**	**Total Dissolved Solids**
BC-0.8	11/3/2020	55	55	NA	NA	NA	9.5	0.00042 J	0.066 J	NA	NA	NA	NA	NA	7.6	NA	NA	3.8	NA	84
BC-0.8	2/10/2021	43	43	NA	0.27	15	8.0	0.0019 J	0.050 J	NA	<0.0034	8.0	NA	<0.00061	7.2	1.6	9.3	32	NA	130
BC-0.5.7	2/10/2021	44	44	NA	0.047 J	8.4	8.5	0.00056 J	0.055 J	NA	<0.0034	4.2	NA	<0.00061	7.3	1.9	8.2	6.4	NA	85
BC-0.5.6	2/10/2021	43	43	NA	<0.039	8.7	8.6	0.00057 J	0.055 J	NA	<0.0034	4.3	NA	<0.00061	7.4	1.9	8.4	6.7	NA	96
BC-0.5.5	11/3/2020	55	55	NA	NA	NA	9.2	0.00047 J	0.050 J	NA	NA	NA	NA	NA	7.4	NA	NA	6.1	NA	88
BC-0.5.5	2/10/2021	44	44	NA	<0.039	8.1	8.7	0.00050 J	0.062 J	NA	<0.0034	4.2	NA	<0.00061	7.4	1.8	8.1	6.8	NA	76
BC-BR	11/3/2020	55	55	NA	NA	NA	9.3	0.00048 J	<0.044	NA	NA	NA	NA	NA	7.4	NA	NA	6.2	NA	85
BC-BR	2/10/2021	43	43	NA	<0.039	9.0	8.6	0.00052 J	0.056 J	NA	<0.0034	4.4	NA	<0.00061	7.4	1.9	8.6	6.7	NA	88
BC-0.3	2/10/2021	44	44	NA	<0.039	8.6	8.0	0.00050 J	0.051 J	NA	<0.0034	4.3	NA	<0.00061	7.5	1.9	8.4	6.5	NA	98
BC-0.1	2/10/2021	43	43	NA	<0.039	8.3	8.7	0.00057 J	0.056 J	NA	<0.0034	4.2	NA	<0.00061	7.5	1.9	8.2	6.9	NA	92

Notes:

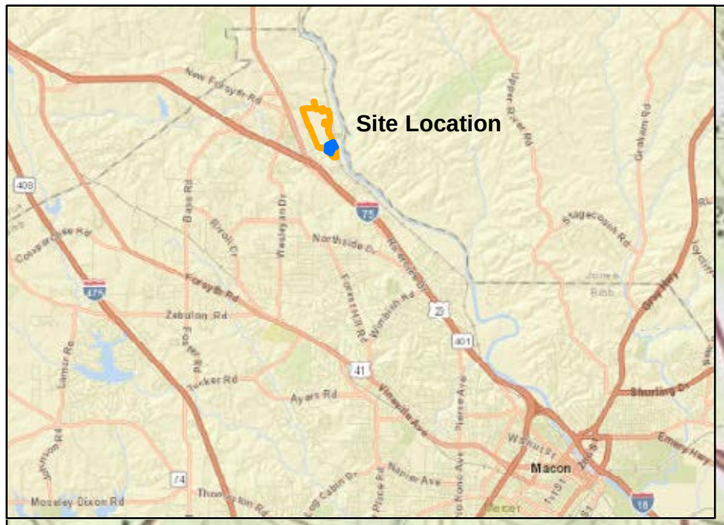
1. Results for metals, anions, and cations are reported in milligrams per liter (mg/L). pH values are in standard units (su)
2. < indicates the analyte was not detected above the analytical method detection limit (MDL).
3. (J) indicates the constituent was detected between the analytical method detection limit and laboratory reporting limit. The value followed by (J) is qualified by the laboratory as estimated.
4. CaCO3 is calcium carbonate
5. NA indicates constituent was not analyzed

TABLE 4
PROPOSED ACM SUPPLEMENTARY DATA ANALYSES AND COLLECTION TASKS
FOR FIRST SEMI-ANNUAL PERIOD 2021

Data Collection Event	Applicable CMs (1)	Applicability/Rationale	Field Component	Parameters of Interest (POI)	Analytical Lab Performing Analysis
Groundwater Sampling	3 and 4	Evaluation of: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) in-situ conditions to establish phytoremediation measures downgradient of the unit	Collect groundwater samples from existing well network currently sampled under the assessment monitoring program	In addition to routine App III/IV parameters: major cations (i.e., calcium, magnesium, sodium, and potassium) and anions (i.e., chloride, nitrate, nitrite, sulfate, and bicarbonate), sulfide, iron, manganese.	TestAmerica Laboratories, Inc. (Eurofins) of Pittsburgh, Pennsylvania
Plume Stability Analysis	1, 2, 3	Evaluate plume stability using time-series charts and trend analysis using linear regression or non-parametric trend tests.	Not Applicable (Desktop Study)	Determine plume stability to understand if the plume is growing, shrinking, or is stable at the AP-2 DAS unit.	No Lab data required
Slug Tests	1, 2, 4	Refine our understanding of hydrogeologic conditions within the anticipated treatment area. Slug test data will be used to further refine the conceptual site model and groundwater flow.	Conduct slug tests in both upgradient and downgradient wells.	Hydraulic conductivity and transmissivity	No lab data required
Determine Ionic Speciation of Contaminants	1 and 3	Evaluate field parameters (pH, ORP, temperature) to determine plausible ionic speciation of the contaminants, and evaluation ionic strength to guide assessment of adsorption potential.	Not Applicable (Desktop Study)	Mechanism and rate of attenuation	No lab data required

Note:
(1) Corrective Measure (CM) Codes:
1 – Geochemical Manipulation (In-Situ Injection
2 – Hydraulic Containment and Dewatering (Pump and Treat)
3 – Monitored Natural Attenuation (MNA)
4 – Phytoremediation (TreeWells®)

FIGURES



N

Pumping Sta
WT
Arkwright
Power Plant
INTERCHANGE 56
INTERCHANGE 55
BR 369
Substa
Sewage Disposal Pond
SHERATON
ARKWRIGHT
DRIVE
BM 338
BM 321

Legend

- Ash Pond 2 Dry Ash
- Ash Pond 3 Landfill and Monofill
- Approximate Property Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China

0 750 1,500 3,000 Feet

Plant Arkwright
Macon, Georgia

Site Location Map

Prepared By-Date: NJM - 2/1/2021	
Checked By-Date: RQ - 2/1/2021	wood.
Project Number: 6122201429	**Figure: 1**

Document Path: Z:\Arkwright\1_MXDs\Report_Figs\Site_Location_AP2.mxd

Plant Arkwright
Macon, Georgia

Monitoring Network Well Location Map

Prepared By-Date: NJM - 2/23/2021	wood.
Checked By-Date: RQ - 2/23/2021	**Figure: 2**
Project Number: 6122201429	

N

ARGWA-19
316.70

ARGWA-20
317.04

315

310

305

300

ARGWC-22
296.28

295

ARGWC-21
295.03

ARAMW-1
295.12*

ARAMW-2
294.69

ARGWC-23
295.60

Legend

296.28 Groundwater Elevation (ft NAVD88)

Groundwater Elevation Location

* Indicates groundwater elevation was not used in contouring

Groundwater Elevation Contour (ft NAVD88)

Interpreted Groundwater Flow Direction

Beaver Dam Creek

Approximate Limits of AP-2DAS

Approximate Property Boundary

0 50 100 200 Feet

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Document Path: Z:\Arkwright\1_MXDs\Pot_Maps\September_2020_AP2_.mxd

Plant Arkwright
Macon, Georgia

Potentiometric Surface - September 2020

Prepared By-Date: NJM - 1/6/2021

Checked By-Date: RQ - 1/6/2021

Project Number: 6122201429

wood.

Figure: 3

N

ARGWA-20
0.00031 J

ARGWA-19
<0.00013

BC-0.8
0.0019 J

315
315
310
310
305
305
300
300
295
295
0.0025

ARGWC-22
0.0055

ARGWC-21
0.00082 J

BC-0.5.7
0.00056 J

ARAMW-1
0.0010 J

ARAMW-2
0.0036

ARGWC-23
0.0052

BC-0.5.6
0.00057 J

BC-0.5.5
0.0005 J

BC-BR
0.00052 J

0 125 250 500 Feet

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Notes:

Groundwater cobalt concentrations data from groundwater samples collected during the September/October 2020 semiannual monitoring event.

Surface water cobalt concentrations data from surface water samples were collected on February 10, 2021.

J indicates the constituent was detected between the analytical method detection limit and the laboratory reporting limit. The value followed by J is qualified by the laboratory as estimated.

* ARAMW-1 is a vertical delineation piezometer and concentrations were not used in contouring.

Cobalt concentrations are reported in mg/L.

Analyte	Units	GWPS
Cobalt	mg/L	0.0025

Legend

- Groundwater Quality Monitoring Well in Monitoring Well Network
- Piezometer Installed November 2019
- Surface Water Sample Location
- Cobalt Concentration Contour (mg/L)
- Inferred Cobalt Concentration Contour (mg/L)
- Groundwater Elevation Contour (ft NAVD88)
- Interpreted Groundwater Flow Direction
- Beaver Dam Creek
- Approximate Limits of AP-2DAS
- Approximate Property Boundary

Document Path: Z:\Arkwright\1_MXDs\Report_Figs\ACM_Add_2020\AP2\2020_Sept_Oct_AP2_Cobalt.mxd

Plant Arkwright
Macon, Georgia

Isoconcentration Map for Cobalt
Ash Pond 2 - September/October 2020

Prepared By-Date: NJM - 2/23/2021
Checked By-Date: RQ - 2/23/2021
Project Number: 6122201429

wood.

Figure: 4

N

ARGWA-19
0.0041 J

ARGWA-20
<0.0034

315

315

310

310

BC-0.8
<0.0034

305

305

300

300

ARGWC-22
0.014

ARGWC-21
0.012

ARAMW-1
0.0091

BC-0.5.7
<0.0034

295

0.013

ARAMW-2
0.019

ARGWC-23
0.040

BC-0.5.6
<0.0034

BC-0.5.5
<0.0034

BC-BR
<0.0034

0 125 250 500 Feet

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Notes:

Groundwater lithium concentrations data from groundwater samples collected during the September/October 2020 semiannual monitoring event.

Lithium was not analyzed for surface water samples collected on February 10, 2021.

J indicates the constituent was detected between the analytical method detection limit and the laboratory reporting limit. The value followed by J is qualified by the laboratory as estimated.

* ARAMW-1 is a vertical delineation piezometer and concentrations were not used in contouring.

Lithium concentrations are reported in mg/L.

Analyte	Units	GWPS
Lithium	mg/L	0.013

Legend

- Groundwater Quality Monitoring Well in Monitoring Well Network
- Piezometer Installed November 2019
- Surface Water Sample Location
- Lithium Concentration Contour (mg/L)
- Inferred Lithium Concentration Contour (mg/L)
- Groundwater Elevation Contour (ft NAVD88)
- Interpreted Groundwater Flow Direction
- Beaver Dam Creek
- Approximate Limits of AP-2DAS
- Approximate Property Boundary

Plant Arkwright
Macon, Georgia

Isoconcentration Map for Lithium
Ash Pond 2 - September/October 2020

Prepared By-Date: NJM - 2/23/2021

Checked By-Date: RQ - 2/23/2021

Project Number: 6122201429

wood.

Figure: 5

Document Path: Z:\Arkwright\1_MXDs\Report_Figs\ACM_Add_2020\AP2\2020_Sept_Oct_AP2_Lithium.mxd

N

ARGWA-19
<0.00061

ARGWA-20
<0.00061

315

315

310

310

BC-0.8
<0.00061

305

305

300

300

ARGWC-22
<0.00061

ARGWC-21
<0.00061

ARAMW-1
0.0054 J

BC-0.5.7
<0.00061

295

ARAMW-2
<0.00061

0.015

ARGWC-23
0.064

BC-0.5.6
<0.00061

BC-0.5.5
<0.00061

BC-BR
<0.00061

0 125 250 500 Feet

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Notes:

Groundwater molybdenum concentrations data from groundwater samples collected during the September/October 2020 semiannual monitoring event.

Molybdenum was not analyzed for surface water samples collected on February 10, 2021.

J indicates the constituent was detected between the analytical method detection limit and the laboratory reporting limit. The value followed by J is qualified by the laboratory as estimated.

* ARAMW-1 is a vertical delineation piezometer and concentrations were not used in contouring.

Molybdenum concentrations are reported in mg/L.

Analyte	Units	GWPS
Molybdenum	mg/L	0.015

Legend

- Groundwater Quality Monitoring Well in Monitoring Well Network
- Piezometer Installed November 2019
- Surface Water Sample Location
- Molybdenum Concentration Contour (mg/L)
- Inferred Molybdenum Concentration Contour (mg/L)
- Groundwater Elevation Contour (ft NAVD88)
- Interpreted Groundwater Flow Direction
- Beaver Dam Creek
- Approximate Limits of AP-2DAS
- Approximate Property Boundary

Plant Arkwright
Macon, Georgia

Isoconcentration Map for Molybdenum
Ash Pond 2 - September/October 2020

Prepared By-Date: NJM - 2/23/2021

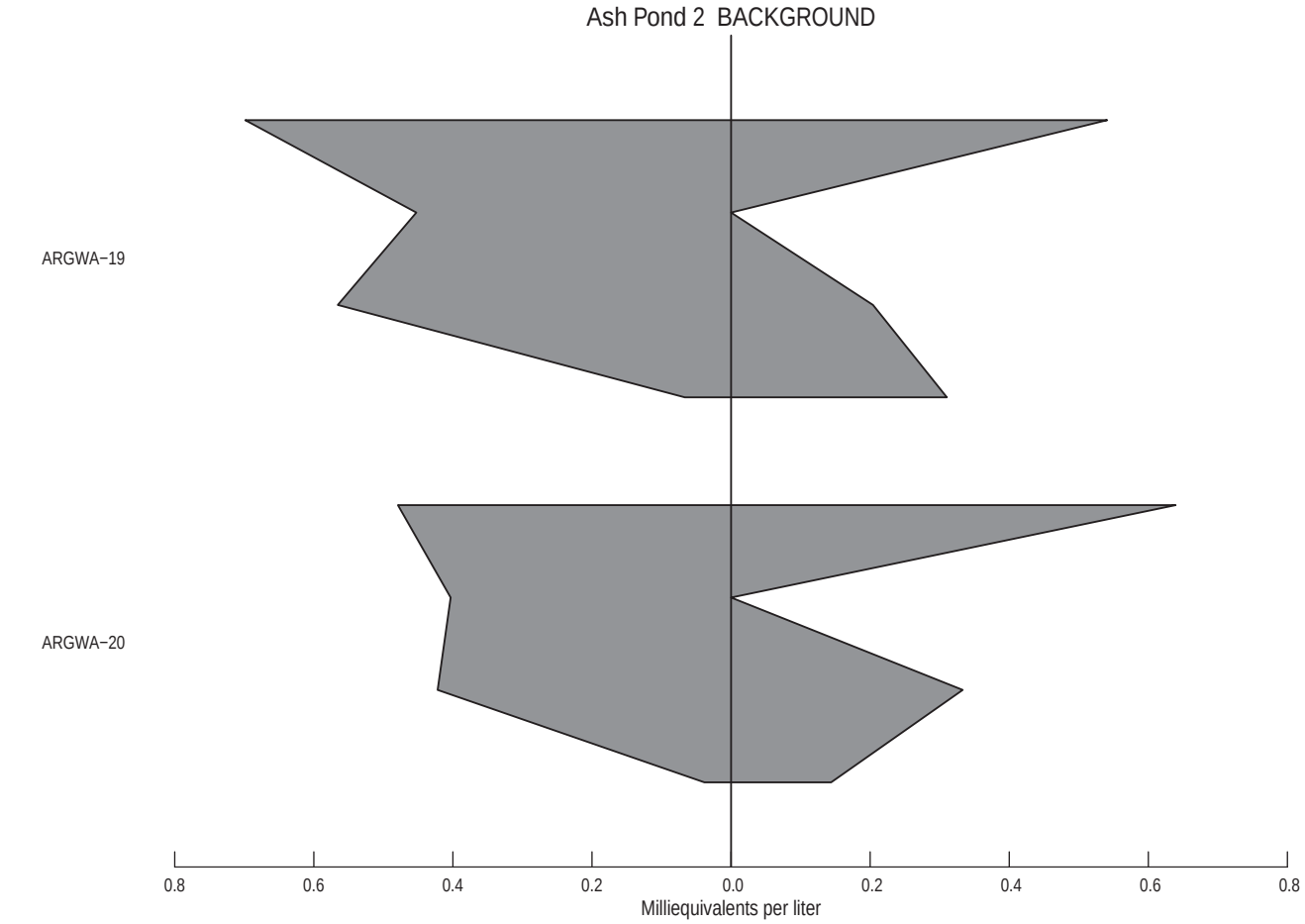
Checked By-Date: RQ - 2/23/2021

Project Number: 6122201429

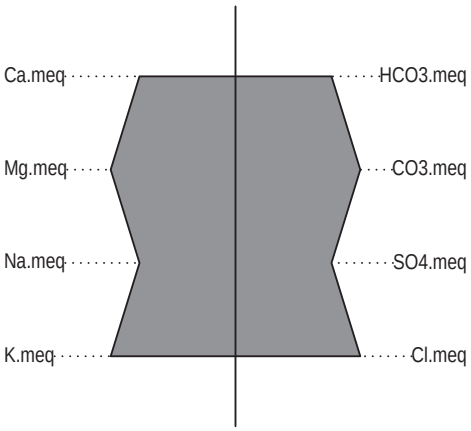
wood.

Figure: 6

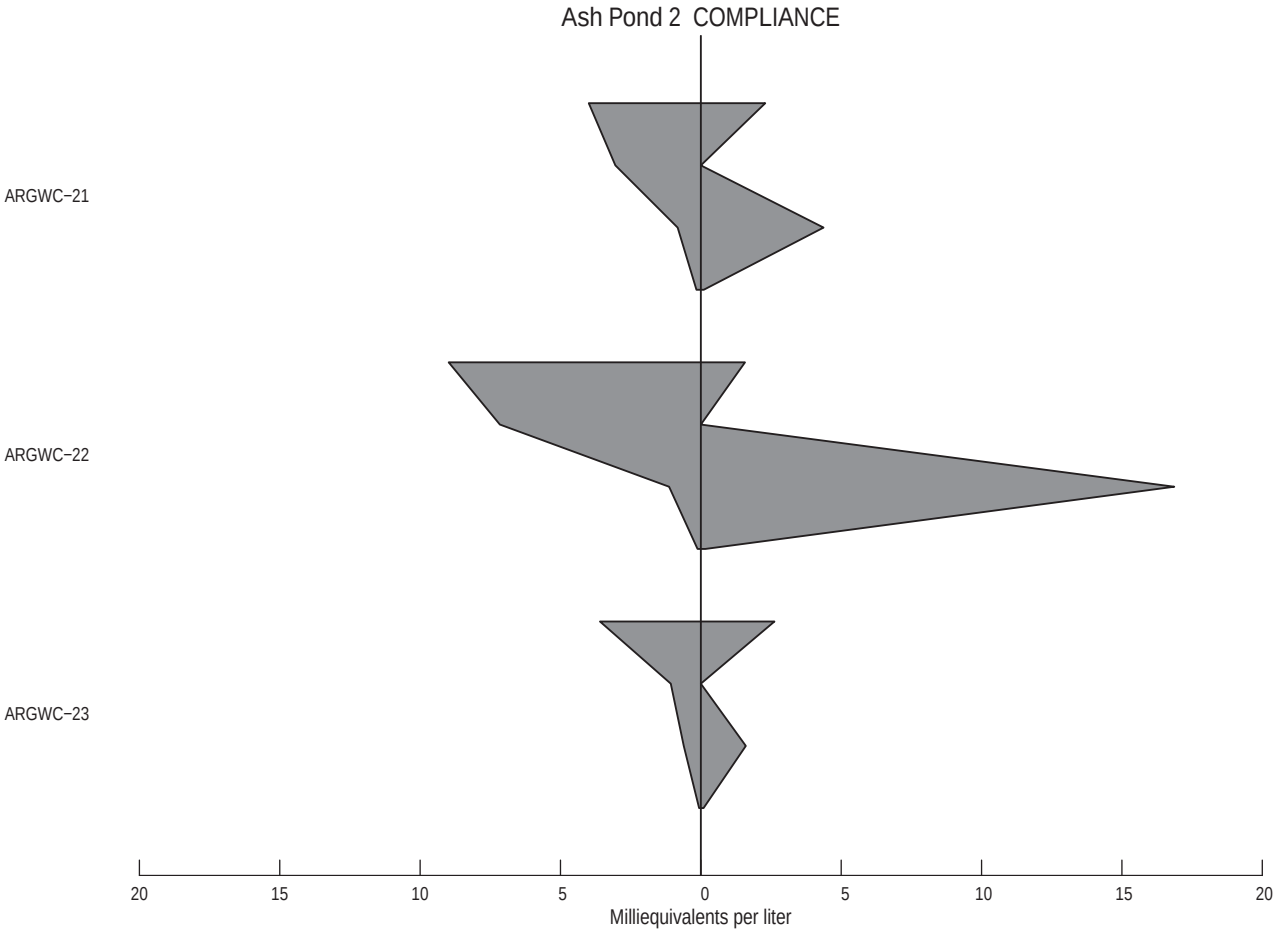
Document Path: Z:\Arkwright\1_MXDs\Report_Figs\ACM_Add_2020\AP2\2020_Sept_Oct_AP2_Molybdenum.mxd



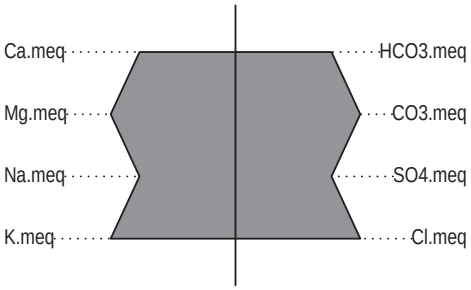
EXPLANATION



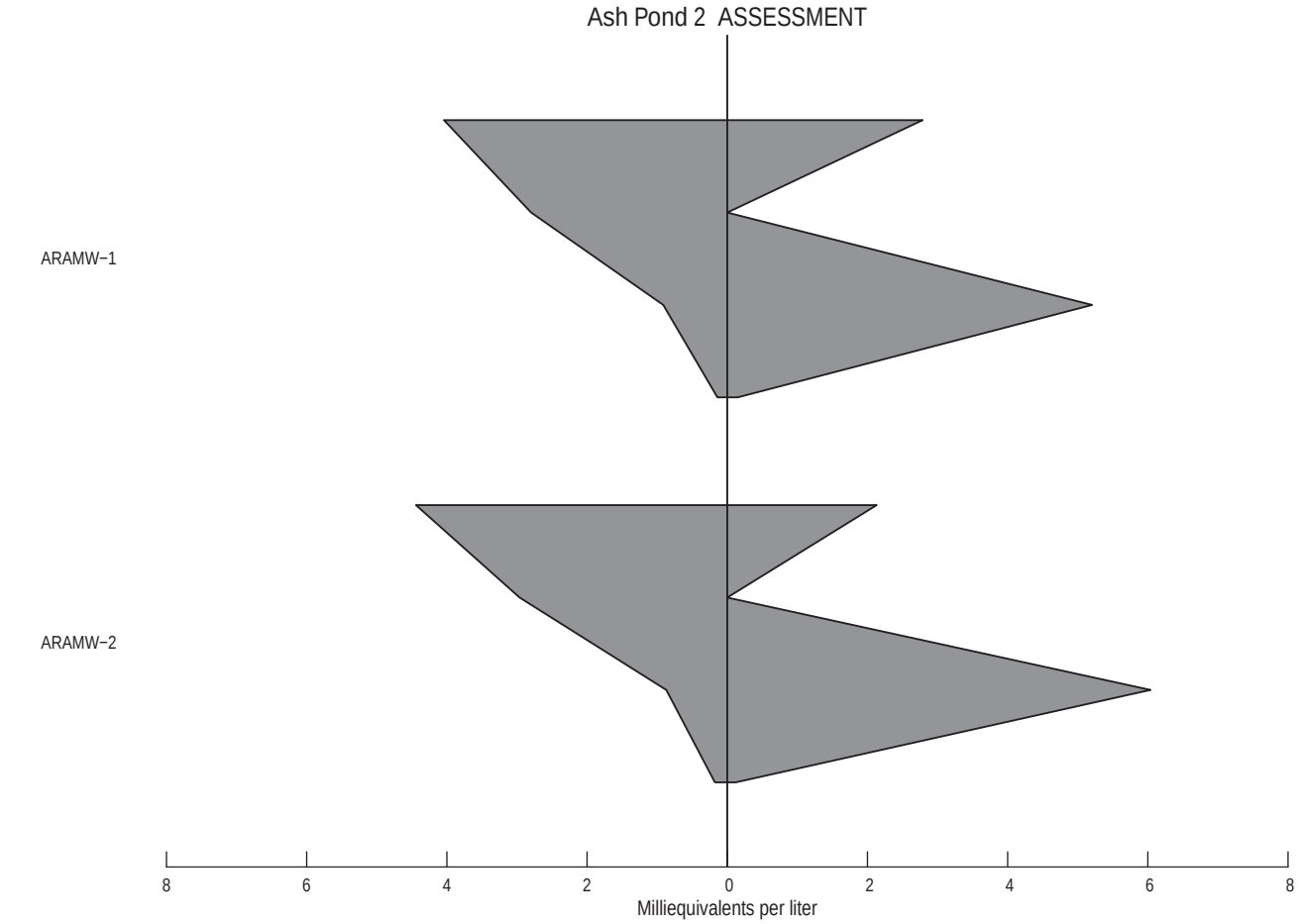
Plant Arkwright Macon, Georgia		
Stiff Diagram - Background Compliance Wells		
Prepared By-Date: NJM - 1/6/2021	wood.	**Figure: 7A**
Checked By-Date: RQ - 1/6/2021		
Project Number: 6122201429		



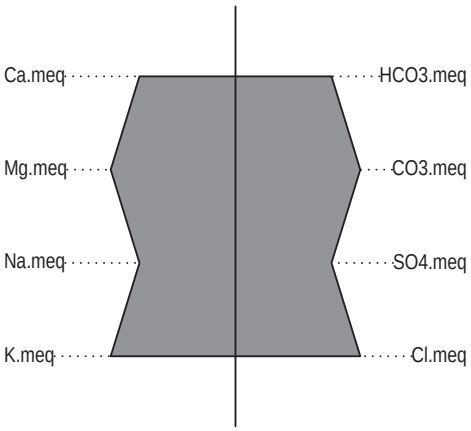
EXPLANATION



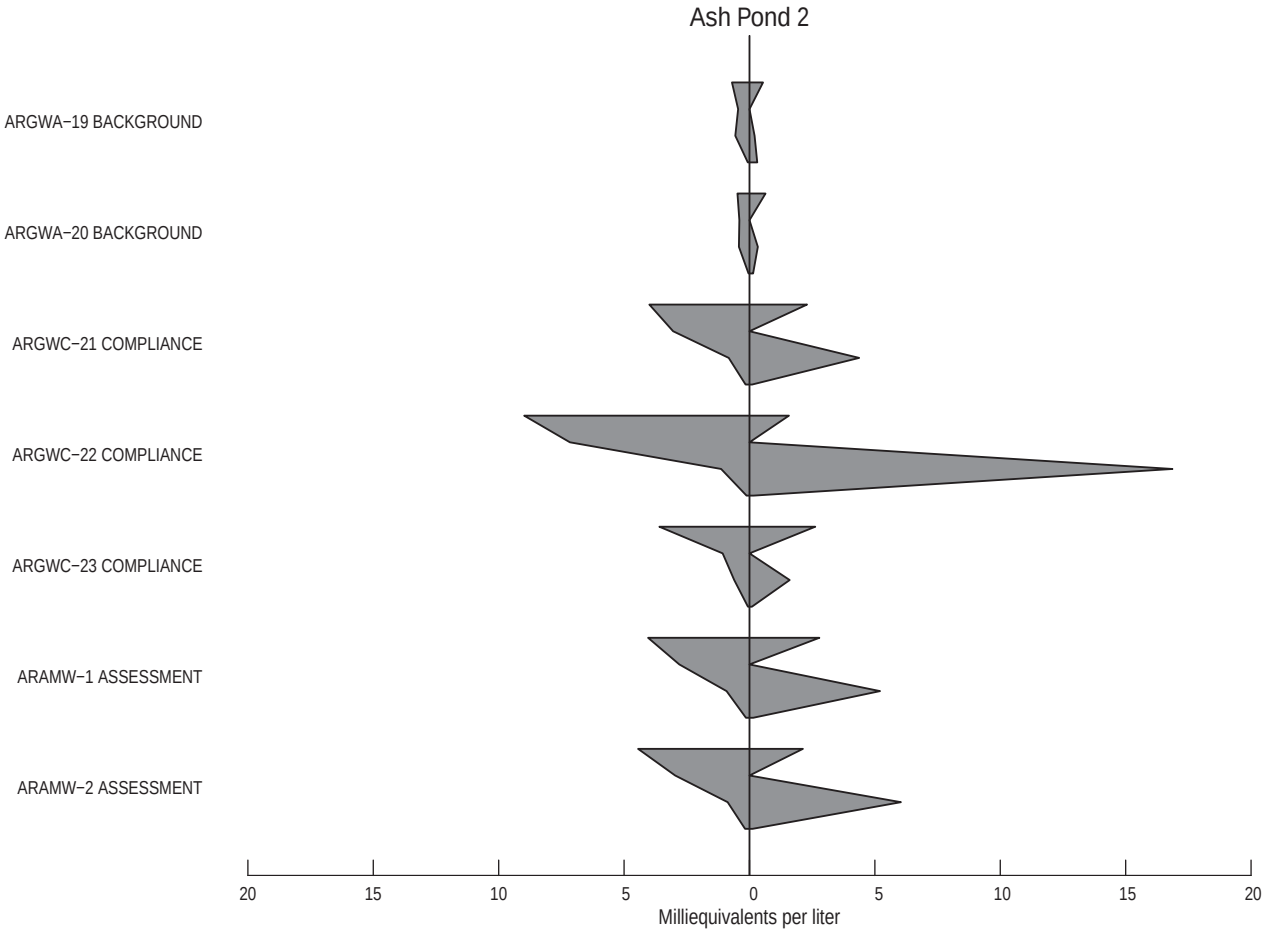
Plant Arkwright Macon, Georgia		
Stiff Diagram - Downgradient Compliance Wells		
Prepared By-Date: NJM - 1/6/2021	wood.	**Figure: 7B**
Checked By-Date: RQ - 1/6/2021		
Project Number: 6122201429		



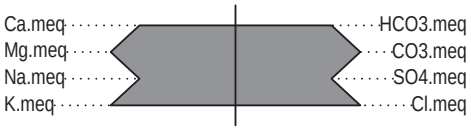
EXPLANATION



Plant Arkwright Macon, Georgia		
Stiff Diagram - Delineation Piezometers		
Prepared By-Date: NJM - 1/6/2021	wood.	**Figure: 7C**
Checked By-Date: RQ - 1/6/2021		
Project Number: 6122201429		



EXPLANATION



Plant Arkwright Macon, Georgia		
Stiff Diagram Comparison		
Prepared By-Date: NJM - 1/6/2021	wood.	**Figure: 7D**
Checked By-Date: RQ - 1/6/2021		
Project Number: 6122201429		

APPENDIX A

FIELD SAMPLING LOGS AND ANALYTICAL DATA REPORTS FOR JUNE AND NOVEMBER/DECEMBER 2020 AND FEBRUARY 2021

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-107491-1
Client Project/Site: Plant Arkwright AP3 Alternate Source

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
7/8/2020 3:56:14 PM

Shali Brown, Project Manager II
(615)301-5031
shali.brown@testamericainc.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

Job ID: 180-107491-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-107491-1

Comments
No additional comments.

Receipt
The samples were received on 6/25/2020 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

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.

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
Job ID: 180-107491-1
Project/Site: Plant Arkwright AP3 Alternate Source

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.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-107491-1
Project/Site: Plant Arkwright AP3 Alternate Source

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-20 *
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	08-01-20
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	05-23-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
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	05-31-21
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-20

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

Sample Summary

Client: Southern Company
Job ID: 180-107491-1
Project/Site: Plant Arkwright AP3 Alternate Source

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-107491-1	ARGWC-22	Water	06/24/20 10:05	06/25/20 09:00	
180-107491-2	DUP#2	Water	06/24/20 00:00	06/25/20 09:00	
180-107491-3	ARAMW-1	Water	06/24/20 12:45	06/25/20 09:00	
180-107491-4	ARAMW-2	Water	06/24/20 16:40	06/25/20 09:00	

Method Summary

Client: Southern Company
Job ID: 180-107491-1
Project/Site: Plant Arkwright AP3 Alternate Source

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

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: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

Client Sample ID: ARGWC-22

Date Collected: 06/24/20 10:05
Date Received: 06/25/20 09:00

Lab Sample ID: 180-107491-1

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			319460	06/26/20 02:36	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		10			319460	06/26/20 02:52	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Dissolved	Prep	3005A			50 mL	50 mL	319682	06/26/20 08:36	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320364	07/02/20 08:55	RJR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	319682	06/26/20 08:36	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320364	07/02/20 08:25	RJR	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:33	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320796	07/07/20 10:05	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/24/20 10:05	NJD	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP#2

Date Collected: 06/24/20 00:00
Date Received: 06/25/20 09:00

Lab Sample ID: 180-107491-2

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			319460	06/26/20 03:08	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		10			319460	06/26/20 03:23	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Dissolved	Prep	3005A			50 mL	50 mL	319682	06/26/20 08:36	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320364	07/02/20 08:58	RJR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	319682	06/26/20 08:36	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320364	07/02/20 08:28	RJR	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:34	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320796	07/07/20 10:11	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

Client Sample ID: ARAMW-1

Date Collected: 06/24/20 12:45
Date Received: 06/25/20 09:00

Lab Sample ID: 180-107491-3

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			319460	06/26/20 03:39	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		5			319945	06/30/20 10:34	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	319682	06/26/20 08:36	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320364	07/02/20 09:00	RJR	TAL PIT
	Instrument ID: NEMO									
Total Recoverable	Prep	3005A			50 mL	50 mL	319682	06/26/20 08:36	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320364	07/02/20 08:31	RJR	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:36	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 15:12	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/24/20 12:45	NJD	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARAMW-2

Date Collected: 06/24/20 16:40
Date Received: 06/25/20 09:00

Lab Sample ID: 180-107491-4

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			319460	06/26/20 03:55	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		5			319945	06/30/20 10:50	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	319684	06/26/20 08:47	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320376	07/01/20 22:18	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	319684	06/26/20 08:47	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320376	07/01/20 22:21	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:37	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 15:19	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/24/20 16:40	NJD	TAL PIT
	Instrument ID: NOEQUIP									

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: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

Analyst References:

Lab: TAL PIT

Batch Type: Prep

CMR = Carl Reagle

TJO = Tyler Oliver

Batch Type: Analysis

AVS = Abbey Smith

CMR = Carl Reagle

MJH = Matthew Hartman

NJD = Nicholas DiNardo

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

Client Sample ID: ARGWC-22

Date Collected: 06/24/20 10:05
Date Received: 06/25/20 09:00

Lab Sample ID: 180-107491-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.7**		1.0	0.32	mg/L			06/26/20 02:36	1
Fluoride	**0.048**	**J**	0.10	0.026	mg/L			06/26/20 02:36	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 02:36	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 02:36	1
Sulfate	**810**		10	3.8	mg/L			06/26/20 02:52	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**2.5**		0.080	0.039	mg/L		06/26/20 08:36	07/02/20 08:25	1
Calcium	**180**		0.50	0.13	mg/L		06/26/20 08:36	07/02/20 08:25	1
Cobalt	**0.0047**		0.0025	0.00013	mg/L		06/26/20 08:36	07/02/20 08:25	1
Lithium	**0.023**		0.0050	0.0034	mg/L		06/26/20 08:36	07/02/20 08:25	1
Magnesium	**87**		0.50	0.083	mg/L		06/26/20 08:36	07/02/20 08:25	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/26/20 08:36	07/02/20 08:25	1
Potassium	**4.6**		0.50	0.16	mg/L		06/26/20 08:36	07/02/20 08:25	1
Sodium	**26**		0.50	0.35	mg/L		06/26/20 08:36	07/02/20 08:25	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**6.2**		0.050	0.020	mg/L		06/26/20 08:36	07/02/20 08:55	1
Manganese	**16**		0.0050	0.00087	mg/L		06/26/20 08:36	07/02/20 08:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:33	1
Total Alkalinity as CaCO3 to pH 4.	**96**		5.0	5.0	mg/L			07/07/20 10:05	1
Bicarbonate Alkalinity as CaCO3	**96**		5.0	5.0	mg/L			07/07/20 10:05	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			07/07/20 10:05	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.82**				SU			06/24/20 10:05	1

Client Sample ID: DUP#2
Lab Sample ID: 180-107491-2

Date Collected: 06/24/20 00:00
Matrix: Water

Date Received: 06/25/20 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.9**		1.0	0.32	mg/L			06/26/20 03:08	1
Fluoride	**0.045**	**J**	0.10	0.026	mg/L			06/26/20 03:08	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 03:08	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 03:08	1
Sulfate	**830**		10	3.8	mg/L			06/26/20 03:23	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**2.5**		0.080	0.039	mg/L		06/26/20 08:36	07/02/20 08:28	1
Calcium	**180**		0.50	0.13	mg/L		06/26/20 08:36	07/02/20 08:28	1
Cobalt	**0.0039**		0.0025	0.00013	mg/L		06/26/20 08:36	07/02/20 08:28	1
Lithium	**0.023**		0.0050	0.0034	mg/L		06/26/20 08:36	07/02/20 08:28	1
Magnesium	**83**		0.50	0.083	mg/L		06/26/20 08:36	07/02/20 08:28	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/26/20 08:36	07/02/20 08:28	1
Potassium	**4.4**		0.50	0.16	mg/L		06/26/20 08:36	07/02/20 08:28	1
Sodium	**25**		0.50	0.35	mg/L		06/26/20 08:36	07/02/20 08:28	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**6.0**		0.050	0.020	mg/L		06/26/20 08:36	07/02/20 08:58	1
Manganese	**16**		0.0050	0.00087	mg/L		06/26/20 08:36	07/02/20 08:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:34	1
Total Alkalinity as CaCO3 to pH 4.5	**100**		5.0	5.0	mg/L			07/07/20 10:11	1
Bicarbonate Alkalinity as CaCO3	**100**		5.0	5.0	mg/L			07/07/20 10:11	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			07/07/20 10:11	1

Client Sample ID: ARAMW-1
Lab Sample ID: 180-107491-3

Date Collected: 06/24/20 12:45
Matrix: Water
Date Received: 06/25/20 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.3**		1.0	0.32	mg/L			06/26/20 03:39	1
Fluoride	**0.21**		0.10	0.026	mg/L			06/26/20 03:39	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 03:39	1
Nitrite as N	**0.042**	**J**	0.050	0.029	mg/L			06/26/20 03:39	1
Sulfate	**250**		5.0	1.9	mg/L			06/30/20 10:34	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.84**		0.080	0.039	mg/L		06/26/20 08:36	07/02/20 08:31	1
Calcium	**81**		0.50	0.13	mg/L		06/26/20 08:36	07/02/20 08:31	1
Cobalt	**0.00097**	**J**	0.0025	0.00013	mg/L		06/26/20 08:36	07/02/20 08:31	1
Lithium	**0.0084**		0.0050	0.0034	mg/L		06/26/20 08:36	07/02/20 08:31	1
Magnesium	**34**		0.50	0.083	mg/L		06/26/20 08:36	07/02/20 08:31	1
Molybdenum	**0.0051**	**J**	0.015	0.00061	mg/L		06/26/20 08:36	07/02/20 08:31	1
Potassium	**5.5**		0.50	0.16	mg/L		06/26/20 08:36	07/02/20 08:31	1
Sodium	**21**		0.50	0.35	mg/L		06/26/20 08:36	07/02/20 08:31	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.42**		0.050	0.020	mg/L		06/26/20 08:36	07/02/20 09:00	1
Manganese	**0.41**		0.0050	0.00087	mg/L		06/26/20 08:36	07/02/20 09:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:36	1
Total Alkalinity as CaCO3 to pH 4.	**170**		5.0	5.0	mg/L			06/30/20 15:12	1
Bicarbonate Alkalinity as CaCO3	**170**		5.0	5.0	mg/L			06/30/20 15:12	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 15:12	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.31**				SU			06/24/20 12:45	1

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

Client Sample ID: ARAMW-2

Date Collected: 06/24/20 16:40
Date Received: 06/25/20 09:00

Lab Sample ID: 180-107491-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.3**		1.0	0.32	mg/L			06/26/20 03:55	1
Fluoride	**0.11**		0.10	0.026	mg/L			06/26/20 03:55	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 03:55	1
Nitrite as N	**0.033**	**J**	0.050	0.029	mg/L			06/26/20 03:55	1
Sulfate	**290**		5.0	1.9	mg/L			06/30/20 10:50	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.89**		0.080	0.039	mg/L		06/26/20 08:47	07/01/20 22:21	1
Calcium	**89**		0.50	0.13	mg/L		06/26/20 08:47	07/01/20 22:21	1
Cobalt	**0.0027**		0.0025	0.00013	mg/L		06/26/20 08:47	07/01/20 22:21	1
Lithium	**0.018**		0.0050	0.0034	mg/L		06/26/20 08:47	07/01/20 22:21	1
Magnesium	**36**		0.50	0.083	mg/L		06/26/20 08:47	07/01/20 22:21	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/26/20 08:47	07/01/20 22:21	1
Potassium	**6.9**		0.50	0.16	mg/L		06/26/20 08:47	07/01/20 22:21	1
Sodium	**20**		0.50	0.35	mg/L		06/26/20 08:47	07/01/20 22:21	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**9.7**	**B**	0.050	0.020	mg/L		06/26/20 08:47	07/01/20 22:18	1
Manganese	**1.0**		0.0050	0.00087	mg/L		06/26/20 08:47	07/01/20 22:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:37	1
Total Alkalinity as CaCO3 to pH 4.	**130**		5.0	5.0	mg/L			06/30/20 15:19	1
Bicarbonate Alkalinity as CaCO3	**130**		5.0	5.0	mg/L			06/30/20 15:19	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 15:19	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.19**				SU			06/24/20 16:40	1

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

Lab Sample ID: MB 180-319460/50
Matrix: Water
Analysis Batch: 319460

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			06/25/20 19:12	1
Fluoride	<0.026		0.10	0.026	mg/L			06/25/20 19:12	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/25/20 19:12	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/25/20 19:12	1
Sulfate	<0.38		1.0	0.38	mg/L			06/25/20 19:12	1

Lab Sample ID: LCS 180-319460/49
Matrix: Water
Analysis Batch: 319460

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	55.2		mg/L		110	90 - 110
Fluoride	2.50	2.70		mg/L		108	90 - 110
Nitrate as N	2.50	2.65		mg/L		106	90 - 110
Nitrite as N	2.50	2.59		mg/L		104	90 - 110
Sulfate	50.0	52.3		mg/L		105	90 - 110

Lab Sample ID: MB 180-319945/6
Matrix: Water
Analysis Batch: 319945

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.38		1.0	0.38	mg/L			06/30/20 05:56	1

Lab Sample ID: LCS 180-319945/5
Matrix: Water
Analysis Batch: 319945

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	54.1		mg/L		108	90 - 110

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

Lab Sample ID: MB 180-319682/1-A
Matrix: Water
Analysis Batch: 320364

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 319682

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		06/26/20 08:36	07/02/20 07:40	1
Iron	<0.020		0.050	0.020	mg/L		06/26/20 08:36	07/02/20 07:40	1
Calcium	<0.13		0.50	0.13	mg/L		06/26/20 08:36	07/02/20 07:40	1
Manganese	<0.00087		0.0050	0.00087	mg/L		06/26/20 08:36	07/02/20 07:40	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		06/26/20 08:36	07/02/20 07:40	1
Lithium	<0.0034		0.0050	0.0034	mg/L		06/26/20 08:36	07/02/20 07:40	1
Magnesium	<0.083		0.50	0.083	mg/L		06/26/20 08:36	07/02/20 07:40	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/26/20 08:36	07/02/20 07:40	1
Potassium	<0.16		0.50	0.16	mg/L		06/26/20 08:36	07/02/20 07:40	1
Sodium	<0.35		0.50	0.35	mg/L		06/26/20 08:36	07/02/20 07:40	1

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

Lab Sample ID: LCS 180-319682/2-A
Matrix: Water
Analysis Batch: 320364

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 319682

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.17		mg/L		93	80 - 120
Iron	5.00	5.29		mg/L		106	80 - 120
Calcium	25.0	26.0		mg/L		104	80 - 120
Manganese	1.00	0.983		mg/L		98	80 - 120
Cobalt	1.00	1.03		mg/L		103	80 - 120
Lithium	1.00	1.09		mg/L		109	80 - 120
Magnesium	25.0	26.5		mg/L		106	80 - 120
Molybdenum	1.00	1.04		mg/L		104	80 - 120
Potassium	25.0	25.5		mg/L		102	80 - 120
Sodium	25.0	25.4		mg/L		102	80 - 120

Lab Sample ID: MB 180-319684/1-A
Matrix: Water
Analysis Batch: 320376

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 319684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		06/26/20 08:47	07/01/20 22:00	1
Iron	0.0422	J	0.050	0.020	mg/L		06/26/20 08:47	07/01/20 22:00	1
Calcium	<0.13		0.50	0.13	mg/L		06/26/20 08:47	07/01/20 22:00	1
Cobalt	<0.00013		0.00050	0.00013	mg/L		06/26/20 08:47	07/01/20 22:00	1
Lithium	<0.0034		0.0050	0.0034	mg/L		06/26/20 08:47	07/01/20 22:00	1
Magnesium	<0.083		0.50	0.083	mg/L		06/26/20 08:47	07/01/20 22:00	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		06/26/20 08:47	07/01/20 22:00	1
Potassium	<0.16		0.50	0.16	mg/L		06/26/20 08:47	07/01/20 22:00	1
Sodium	<0.35		0.50	0.35	mg/L		06/26/20 08:47	07/01/20 22:00	1

Lab Sample ID: MB 180-319684/1-A
Matrix: Water
Analysis Batch: 320376

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 319684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	<0.00087		0.0050	0.00087	mg/L		06/26/20 08:47	07/02/20 00:55	1

Lab Sample ID: LCS 180-319684/2-A
Matrix: Water
Analysis Batch: 320456

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 319684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.13		mg/L		91	80 - 120
Iron	5.00	5.03		mg/L		101	80 - 120
Calcium	25.0	26.9		mg/L		108	80 - 120
Manganese	0.500	0.524		mg/L		105	80 - 120
Cobalt	0.500	0.504		mg/L		101	80 - 120
Lithium	0.500	0.503		mg/L		101	80 - 120
Magnesium	25.0	25.1		mg/L		101	80 - 120
Molybdenum	0.500	0.530		mg/L		106	80 - 120
Potassium	25.0	24.9		mg/L		100	80 - 120
Sodium	25.0	25.8		mg/L		103	80 - 120

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-320115/1-A
Matrix: Water
Analysis Batch: 320175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 320115

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:13	1

Lab Sample ID: LCS 180-320115/2-A
Matrix: Water
Analysis Batch: 320175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 320115

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	11.9	10.5		mg/L		89	85 - 115

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-320519/5
Matrix: Water
Analysis Batch: 320519

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	<5.0		5.0	5.0	mg/L			06/30/20 13:11	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 13:11	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 13:11	1

Lab Sample ID: LCS 180-320519/4
Matrix: Water
Analysis Batch: 320519

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	233		mg/L		93	90 - 110

Lab Sample ID: MB 180-320796/5
Matrix: Water
Analysis Batch: 320796

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	<5.0		5.0	5.0	mg/L			07/07/20 08:32	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			07/07/20 08:32	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			07/07/20 08:32	1

Lab Sample ID: LCS 180-320796/4
Matrix: Water
Analysis Batch: 320796

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	235		mg/L		94	90 - 110

QC Association Summary

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107491-1

HPLC/IC

Analysis Batch: 319460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-107491-1	ARGWC-22	Total/NA	Water	EPA 300.0 R2.1	
180-107491-2	DUP#2	Total/NA	Water	EPA 300.0 R2.1	
180-107491-2	DUP#2	Total/NA	Water	EPA 300.0 R2.1	
180-107491-3	ARAMW-1	Total/NA	Water	EPA 300.0 R2.1	
180-107491-4	ARAMW-2	Total/NA	Water	EPA 300.0 R2.1	
MB 180-319460/50	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-319460/49	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 319945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-3	ARAMW-1	Total/NA	Water	EPA 300.0 R2.1	
180-107491-4	ARAMW-2	Total/NA	Water	EPA 300.0 R2.1	
MB 180-319945/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-319945/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 319682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Dissolved	Water	3005A	
180-107491-1	ARGWC-22	Total Recoverable	Water	3005A	
180-107491-2	DUP#2	Dissolved	Water	3005A	
180-107491-2	DUP#2	Total Recoverable	Water	3005A	
180-107491-3	ARAMW-1	Dissolved	Water	3005A	
180-107491-3	ARAMW-1	Total Recoverable	Water	3005A	
MB 180-319682/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-319682/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 319684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-4	ARAMW-2	Dissolved	Water	3005A	
180-107491-4	ARAMW-2	Total Recoverable	Water	3005A	
MB 180-319684/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-319684/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 320364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Dissolved	Water	EPA 6020B	319682
180-107491-1	ARGWC-22	Total Recoverable	Water	EPA 6020B	319682
180-107491-2	DUP#2	Dissolved	Water	EPA 6020B	319682
180-107491-2	DUP#2	Total Recoverable	Water	EPA 6020B	319682
180-107491-3	ARAMW-1	Dissolved	Water	EPA 6020B	319682
180-107491-3	ARAMW-1	Total Recoverable	Water	EPA 6020B	319682
MB 180-319682/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	319682
LCS 180-319682/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	319682

Analysis Batch: 320376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-4	ARAMW-2	Dissolved	Water	EPA 6020B	319684
180-107491-4	ARAMW-2	Total Recoverable	Water	EPA 6020B	319684

Metals (Continued)

Analysis Batch: 320376 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-319684/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	319684
MB 180-319684/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	319684

Analysis Batch: 320456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-319684/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	319684

General Chemistry

Prep Batch: 320115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Total/NA	Water	9030B	
180-107491-2	DUP#2	Total/NA	Water	9030B	
180-107491-3	ARAMW-1	Total/NA	Water	9030B	
180-107491-4	ARAMW-2	Total/NA	Water	9030B	
MB 180-320115/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-320115/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 320175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Total/NA	Water	EPA 9034	320115
180-107491-2	DUP#2	Total/NA	Water	EPA 9034	320115
180-107491-3	ARAMW-1	Total/NA	Water	EPA 9034	320115
180-107491-4	ARAMW-2	Total/NA	Water	EPA 9034	320115
MB 180-320115/1-A	Method Blank	Total/NA	Water	EPA 9034	320115
LCS 180-320115/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	320115

Analysis Batch: 320519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-3	ARAMW-1	Total/NA	Water	SM2320 B	
180-107491-4	ARAMW-2	Total/NA	Water	SM2320 B	
MB 180-320519/5	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-320519/4	Lab Control Sample	Total/NA	Water	SM2320 B	

Analysis Batch: 320796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Total/NA	Water	SM2320 B	
180-107491-2	DUP#2	Total/NA	Water	SM2320 B	
MB 180-320796/5	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-320796/4	Lab Control Sample	Total/NA	Water	SM2320 B	

Field Service / Mobile Lab

Analysis Batch: 320074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107491-1	ARGWC-22	Total/NA	Water	Field Sampling	
180-107491-3	ARAMW-1	Total/NA	Water	Field Sampling	
180-107491-4	ARAMW-2	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 America

Client Information	Sampler: Terrell Parker	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-61590-12490.1
Client Contact: Joju Abraham	Phone:	E-Mail: shali.brown@testamericainc.com		Page: Page 1 of 3
Company: Southern Company		Analysis Requested		Job #:
Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested:			Preservation Codes:
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone:	PO #: SCS10382606			
Email: JAbraham@southernco.com	WO #:			
Project Name: Plant Arkwright AP3 Alternate Source	Project #: 18020201			
Site: Georgia	SSOW#:			Other:

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)

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)	23208, 300_ORGFMS	6020B - (MOD) Custom 8 (CoMoLiCaMgNaK)	6020B - (MOD) Dissolved Fe/Mn	2540C_Calcd - Solids, Total Dissolved (TDS)	9034_Calc - Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	D	D	N	CB		
ARGWC-22	6/24/20	1005	G	Water	Y		X	X	X		X	4	pH = 5.82
DUP#2	↓	—	G	Water	Y		X	X	X		X	4	
ARAMW-1	↓	1245	G	Water	Y		X	X	X		X	4	pH = 6.31
ARAMW-2	↓	1640	G	Water	Y		X	X	X		X	4	pH = 6.19
				Water									
				Water									
				Water									
				Water									
				Water									
				Water									
				Water									

180-107491 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: Daniel L Howard	Date/Time: 6/24/20/1815	Company	Received by: [signature]	Date/Time: 6/25/20 900	Company: EM [illegible]
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

Recipient's Copy

Packages up to 150 lbs.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day.* Saturday Delivery NOT available.

* Declared value limit $500.

FedEx Pak* | FedEx Box | FedEx Tube | Other

Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

ay Delivery
Available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

fedex.com 1.800.GoFed

ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100

KENNESAW, GA 30144
UNITED STATES US

SHIP DATE: 24JUN20
ACTWGT: 44.15 LB
CAD: 6994493/SSFE2110
DIMS: 20x16x13 IN

BILL THIRD PARTY

Part # 156287-435 TRK# 0215 EXP 05/21

TO SAMPLE RECIEVING
EUROFINS TEST AMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238

(412) 963-7068 REF:

INV:
PO: DEPT:

FedEx Express

TRK# 0215 8121 9394 5771

THU - 25 JUN 10:30A
PRIORITY OVERNIGHT

DSR AHS
15238
PIT

NA AGCA

PA-US

Uncorrected temp 3.8 °C
Thermometer ID 14
CF 0 Initials JB

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-107491-1

Login Number: 107491
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: 180-107513-1
Client Project/Site: Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
7/6/2020 6:59:57 AM

Shali Brown, Project Manager II
(615)301-5031
shali.brown@testamericainc.com

PA Lab ID: 02-00416

Table of Contents

Definitions/Glossary

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

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.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-05-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	05-23-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
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	05-31-21
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-20

Sample Summary

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-107513-1	ARGWC-22 10-12	Solid	06/23/20 10:00	06/25/20 09:00	
180-107513-2	ARGWC-23 9-11	Solid	06/23/20 10:00	06/25/20 09:00	
180-107513-3	ARAMW-1 5-6	Solid	06/23/20 10:00	06/25/20 09:00	
180-107513-4	ARAMW-2 7-9	Solid	06/23/20 10:00	06/25/20 09:00	
180-107513-5	ARAMW-3 20-22	Solid	06/23/20 10:00	06/25/20 09:00	
180-107513-6	ARAMW-4 23-25	Solid	06/23/20 10:00	06/25/20 09:00	
180-107513-7	ARAMW-6 8-10	Solid	06/23/20 10:00	06/25/20 09:00	

Method Summary

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

Method	Method Description	Protocol	Laboratory
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
3050B	Preparation, Metals	SW846	TAL PIT

Protocol References:

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: Plant Arkwright

Job ID: 180-107513-1

Client Sample ID: ARGWC-22 10-12

Lab Sample ID: 180-107513-1
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.24 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 17:46	RJR	TAL PIT
	Instrument ID: NEMO									

Client Sample ID: ARGWC-23 9-11

Lab Sample ID: 180-107513-2
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 96.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 17:49	RJR	TAL PIT
	Instrument ID: NEMO									

Client Sample ID: ARAMW-1 5-6

Lab Sample ID: 180-107513-3
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.62 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 17:52	RJR	TAL PIT
	Instrument ID: NEMO									

Client Sample ID: ARAMW-2 7-9

Lab Sample ID: 180-107513-4
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 97.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.13 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 17:54	RJR	TAL PIT
	Instrument ID: NEMO									

Client Sample ID: ARAMW-3 20-22

Lab Sample ID: 180-107513-5
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 79.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.27 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 17:57	RJR	TAL PIT
	Instrument ID: NEMO									

Lab Chronicle

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

Client Sample ID: ARAMW-4 23-25

Lab Sample ID: 180-107513-6
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 72.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.13 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 18:00	RJR	TAL PIT
	Instrument ID: NEMO									

Client Sample ID: ARAMW-6 8-10

Lab Sample ID: 180-107513-7
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.10 g	100 mL	319743	06/26/20 14:29	JL	TAL PIT
Total/NA	Analysis	EPA 6020B		1			320292	07/01/20 18:08	RJR	TAL PIT
	Instrument ID: NEMO									

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

JL = James Lyu

Batch Type: Analysis

RJR = Ron Rosenbaum

Client Sample ID: ARGWC-22 10-12

Lab Sample ID: 180-107513-1
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 80.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	12		0.050	0.013	mg/Kg	☼	06/26/20 14:29	07/01/20 17:46	1
Molybdenum	0.27	J	0.50	0.16	mg/Kg	☼	06/26/20 14:29	07/01/20 17:46	1
Lithium	7.1		0.50	0.40	mg/Kg	☼	06/26/20 14:29	07/01/20 17:46	1

Client Sample ID: ARGWC-23 9-11

Lab Sample ID: 180-107513-2
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 96.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	17		0.052	0.013	mg/Kg	☼	06/26/20 14:29	07/01/20 17:49	1
Molybdenum	0.62		0.52	0.17	mg/Kg	☼	06/26/20 14:29	07/01/20 17:49	1
Lithium	15		0.52	0.41	mg/Kg	☼	06/26/20 14:29	07/01/20 17:49	1

Client Sample ID: ARAMW-1 5-6

Lab Sample ID: 180-107513-3
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 80.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	1.3		0.039	0.010	mg/Kg	☼	06/26/20 14:29	07/01/20 17:52	1
Molybdenum	<0.13		0.39	0.13	mg/Kg	☼	06/26/20 14:29	07/01/20 17:52	1
Lithium	1.5		0.39	0.31	mg/Kg	☼	06/26/20 14:29	07/01/20 17:52	1

Client Sample ID: ARAMW-2 7-9

Lab Sample ID: 180-107513-4
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 97.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	2.2		0.045	0.012	mg/Kg	☼	06/26/20 14:29	07/01/20 17:54	1
Molybdenum	<0.15		0.45	0.15	mg/Kg	☼	06/26/20 14:29	07/01/20 17:54	1
Lithium	2.9		0.45	0.36	mg/Kg	☼	06/26/20 14:29	07/01/20 17:54	1

Client Sample ID: ARAMW-3 20-22

Lab Sample ID: 180-107513-5
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 79.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	5.6		0.050	0.013	mg/Kg	☼	06/26/20 14:29	07/01/20 17:57	1
Molybdenum	<0.16		0.50	0.16	mg/Kg	☼	06/26/20 14:29	07/01/20 17:57	1
Lithium	7.3		0.50	0.40	mg/Kg	☼	06/26/20 14:29	07/01/20 17:57	1

Client Sample ID: ARAMW-4 23-25

Lab Sample ID: 180-107513-6
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 72.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	5.7		0.061	0.016	mg/Kg	☼	06/26/20 14:29	07/01/20 18:00	1
Molybdenum	0.23	J	0.61	0.20	mg/Kg	☼	06/26/20 14:29	07/01/20 18:00	1

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

Client Sample ID: ARAMW-4 23-25

Lab Sample ID: 180-107513-6
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 72.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.4		0.61	0.49	mg/Kg	☼	06/26/20 14:29	07/01/20 18:00	1

Client Sample ID: ARAMW-6 8-10

Lab Sample ID: 180-107513-7
Date Collected: 06/23/20 10:00
Matrix: Solid
Date Received: 06/25/20 09:00
Percent Solids: 82.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	14		0.055	0.014	mg/Kg	☼	06/26/20 14:29	07/01/20 18:08	1
Molybdenum	0.21	J	0.55	0.18	mg/Kg	☼	06/26/20 14:29	07/01/20 18:08	1
Lithium	5.1		0.55	0.44	mg/Kg	☼	06/26/20 14:29	07/01/20 18:08	1

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

Lab Sample ID: MB 180-319743/1-A
Matrix: Solid
Analysis Batch: 320292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 319743

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.013		0.050	0.013	mg/Kg		06/26/20 14:29	07/01/20 16:53	1
Molybdenum	<0.16		0.50	0.16	mg/Kg		06/26/20 14:29	07/01/20 16:53	1
Lithium	<0.40		0.50	0.40	mg/Kg		06/26/20 14:29	07/01/20 16:53	1

Lab Sample ID: LCS 180-319743/2-A
Matrix: Solid
Analysis Batch: 320292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 319743

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	50.0	44.0		mg/Kg		88	80 - 120
Molybdenum	50.0	46.9		mg/Kg		94	80 - 120
Lithium	50.0	44.8		mg/Kg		90	80 - 120

QC Association Summary

Client: Southern Company
Project/Site: Plant Arkwright

Job ID: 180-107513-1

Metals

Prep Batch: 319743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107513-1	ARGWC-22 10-12	Total/NA	Solid	3050B	
180-107513-2	ARGWC-23 9-11	Total/NA	Solid	3050B	
180-107513-3	ARAMW-1 5-6	Total/NA	Solid	3050B	
180-107513-4	ARAMW-2 7-9	Total/NA	Solid	3050B	
180-107513-5	ARAMW-3 20-22	Total/NA	Solid	3050B	
180-107513-6	ARAMW-4 23-25	Total/NA	Solid	3050B	
180-107513-7	ARAMW-6 8-10	Total/NA	Solid	3050B	
MB 180-319743/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 180-319743/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 320292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107513-1	ARGWC-22 10-12	Total/NA	Solid	EPA 6020B	319743
180-107513-2	ARGWC-23 9-11	Total/NA	Solid	EPA 6020B	319743
180-107513-3	ARAMW-1 5-6	Total/NA	Solid	EPA 6020B	319743
180-107513-4	ARAMW-2 7-9	Total/NA	Solid	EPA 6020B	319743
180-107513-5	ARAMW-3 20-22	Total/NA	Solid	EPA 6020B	319743
180-107513-6	ARAMW-4 23-25	Total/NA	Solid	EPA 6020B	319743
180-107513-7	ARAMW-6 8-10	Total/NA	Solid	EPA 6020B	319743
MB 180-319743/1-A	Method Blank	Total/NA	Solid	EPA 6020B	319743
LCS 180-319743/2-A	Lab Control Sample	Total/NA	Solid	EPA 6020B	319743

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: Jeff Moore	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-59746-11178.1
Client Contact: SCS Contacts	Phone: 770-421-3400	E-Mail: shali.brown@testamericainc.com		Page: 1
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Atlanta	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: GA, 30308				Other:
Phone: 404-506-7116(Tel)	PO #: SCS10382606			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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)	Sch. Methods Co. Li. Mo	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
ARGWC-22 10-12	6-23-2020	10:00	G	S Water			N		
ARGWC-23 9-11				Water					
ARAMW-1 5-6				Water					
ARAMW-2 7-9				Water					
ARAMW-3 20-22				Water					
ARAMW-4 23-25				Water					
ARAMW-6 8-10				Water					
				Water					
				Water					
				Water					
				Water					

180-107513 Chain of Custody

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

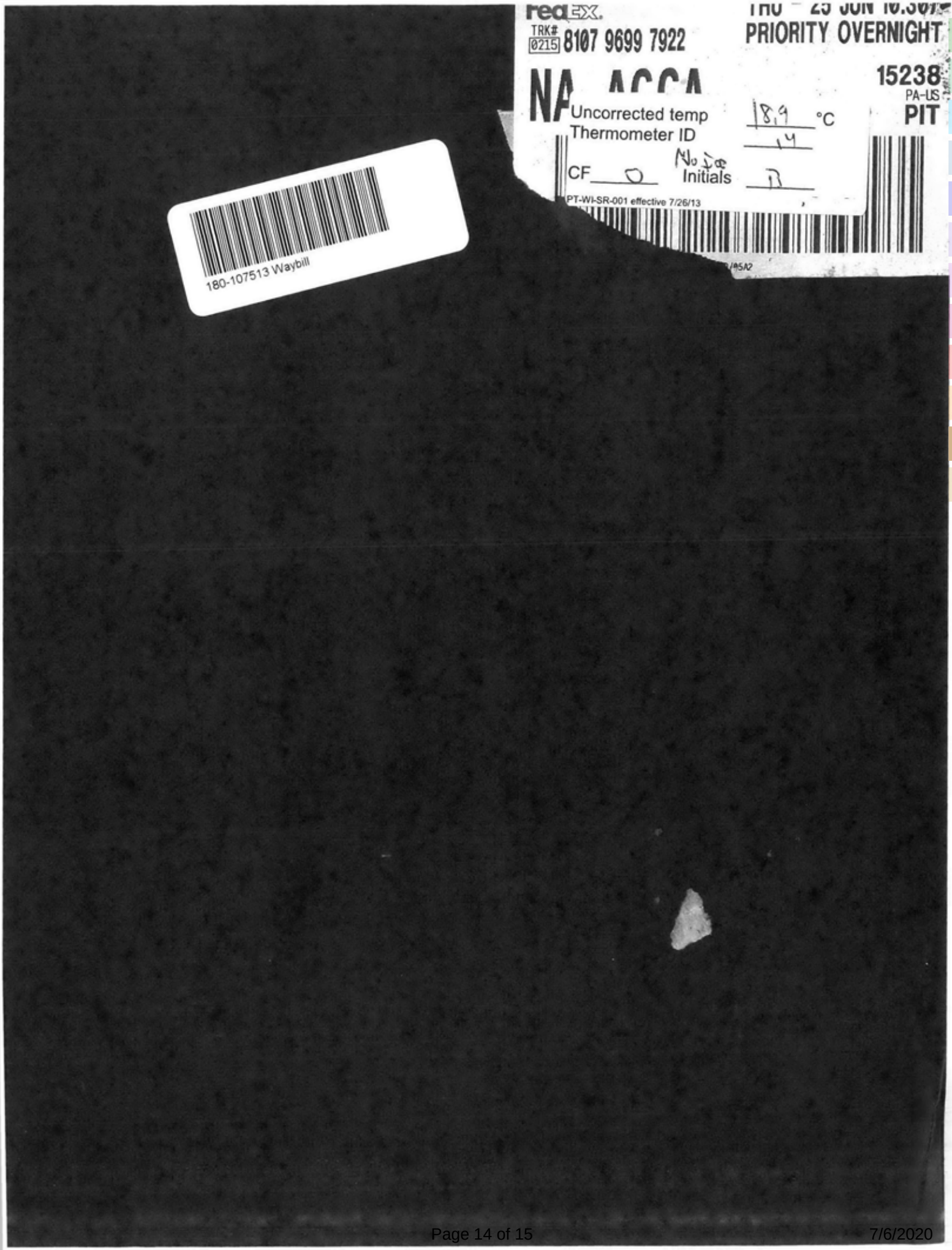
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

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: 6/25/20 900	Company EGAMP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company


FedEx
TRK# 0215 8107 9699 7922
PRIORITY OVERNIGHT
15238
PA-US
PIT
Uncorrected temp
Thermometer ID
18.9 °C
14
CF 0
Initials
PT-WI-SR-001 effective 7/26/13
180-107513 Waybill

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-107513-1

Login Number: 107513
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.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

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

Laboratory Job ID: 180-107562-1
Client Project/Site: Plant Arkwright AP3 Alternate Source

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
7/9/2020 1:13:03 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Job ID: 180-107562-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-107562-1

Comments
No additional comments.

Receipt
The samples were received on 6/26/2020 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.4º C.

Receipt Exceptions
The containers provided for the following samples did not match the information listed on the Chain-of-Custody (COC): EB#2 (180-107562-1), ARGWC-23 (180-107562-2), ARGWC-21 (180-107562-3), ARGWA-19 (180-107562-4) and ARGWA-20 (180-107562-5). Nitric dissolved containers were provided, though the COC is not marked for filtered metals. The COC lists TDS analysis. however, no containers were provided. The client was contacted, and the lab was instructed to analyze for dissolved metals but that TDS is not required.

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

Metals
Method 6020B: The post digestion spike % recovery for calcium,magnesium, and sodium associated with batch 180-320452 was outside of control limits. The associated sample is: EB#2 (180-107562-1).

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
Job ID: 180-107562-1
Project/Site: Plant Arkwright AP3 Alternate Source

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-107562-1
Project/Site: Plant Arkwright AP3 Alternate Source

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	08-01-20
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	05-23-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
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	05-31-21
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-20

Sample Summary

Client: Southern Company
Job ID: 180-107562-1
Project/Site: Plant Arkwright AP3 Alternate Source

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-107562-1	EB#2	Water	06/25/20 09:10	06/26/20 09:00	
180-107562-2	ARGWC-23	Water	06/25/20 11:18	06/26/20 09:00	
180-107562-3	ARGWC-21	Water	06/25/20 13:15	06/26/20 09:00	
180-107562-4	ARGWA-19	Water	06/25/20 10:15	06/26/20 09:00	
180-107562-5	ARGWA-20	Water	06/25/20 12:30	06/26/20 09:00	

Method Summary

Client: Southern Company
Job ID: 180-107562-1
Project/Site: Plant Arkwright AP3 Alternate Source

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

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: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Client Sample ID: EB#2

Date Collected: 06/25/20 09:10
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-1

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			319637	06/26/20 17:29	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320452	07/02/20 21:43	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320452	07/02/20 22:22	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:42	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 16:58	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: ARGWC-23

Date Collected: 06/25/20 11:18
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-2

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			319637	06/26/20 17:45	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320452	07/02/20 22:01	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320452	07/02/20 22:25	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:43	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 17:05	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/25/20 11:18	NJD	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWC-21

Date Collected: 06/25/20 13:15
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-3

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		10	1 mL	1.0 mL	320882	07/08/20 20:44	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		1			319637	06/26/20 16:40	MJH	TAL PIT
	Instrument ID: CHICS2100B									

Lab Chronicle

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Client Sample ID: ARGWC-21

Date Collected: 06/25/20 13:15
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320452	07/02/20 22:04	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320452	07/02/20 22:29	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	9030B			50 mL	50 mL	320115	07/01/20 06:00	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320175	07/01/20 07:45	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 17:24	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/25/20 13:15	NJD	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-19

Date Collected: 06/25/20 10:15
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-4

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			319637	06/26/20 16:56	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320452	07/02/20 22:08	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320452	07/02/20 22:32	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	9030B			50 mL	50 mL	320341	07/02/20 11:40	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320374	07/02/20 13:00	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 17:36	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/25/20 10:15	NJD	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ARGWA-20

Date Collected: 06/25/20 12:30
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-5

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			319637	06/26/20 17:13	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	319816	06/27/20 13:54	JL	TAL PIT
Dissolved	Analysis	EPA 6020B		1			320452	07/02/20 22:11	RSK	TAL PIT
	Instrument ID: DORY									

Lab Chronicle

Client: Southern Company
Job ID: 180-107562-1
Project/Site: Plant Arkwright AP3 Alternate Source

Client Sample ID: ARGWA-20
Lab Sample ID: 180-107562-5
Date Collected: 06/25/20 12:30
Matrix: Water
Date Received: 06/26/20 09:00

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	319816	06/27/20 13:54	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			320452	07/02/20 22:36	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	9030B			50 mL	50 mL	320341	07/02/20 11:40	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			320374	07/02/20 13:05	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			320519	06/30/20 17:43	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			320074	06/25/20 12:30	NJD	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

CMR = Carl Reagle
JL = James Lyu

Batch Type: Analysis

AVS = Abbey Smith
CMR = Carl Reagle
MJH = Matthew Hartman
NJD = Nicholas DiNardo
RSK = Robert Kurtz

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Client Sample ID: EB#2

Date Collected: 06/25/20 09:10
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			06/26/20 17:29	1
Fluoride	<0.026		0.10	0.026	mg/L			06/26/20 17:29	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 17:29	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 17:29	1
Sulfate	<0.38		1.0	0.38	mg/L			06/26/20 17:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		06/27/20 13:54	07/02/20 22:22	1
Calcium	<0.13		0.50	0.13	mg/L		06/27/20 13:54	07/02/20 22:22	1
Cobalt	**0.00033**	**J**	0.0025	0.00013	mg/L		06/27/20 13:54	07/02/20 22:22	1
Lithium	<0.0034		0.0050	0.0034	mg/L		06/27/20 13:54	07/02/20 22:22	1
Magnesium	<0.083		0.50	0.083	mg/L		06/27/20 13:54	07/02/20 22:22	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/27/20 13:54	07/02/20 22:22	1
Potassium	<0.16		0.50	0.16	mg/L		06/27/20 13:54	07/02/20 22:22	1
Sodium	<0.35		0.50	0.35	mg/L		06/27/20 13:54	07/02/20 22:22	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.020		0.050	0.020	mg/L		06/27/20 13:54	07/02/20 21:43	1
Manganese	<0.00087		0.0050	0.00087	mg/L		06/27/20 13:54	07/02/20 21:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:42	1
Total Alkalinity as CaCO3 to pH 4.5	<5.0		5.0	5.0	mg/L			06/30/20 16:58	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 16:58	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 16:58	1

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Client Sample ID: ARGWC-23

Date Collected: 06/25/20 11:18
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4		1.0	0.32	mg/L			06/26/20 17:45	1
Fluoride	0.25		0.10	0.026	mg/L			06/26/20 17:45	1
Nitrate as N	1.8		0.10	0.023	mg/L			06/26/20 17:45	1
Nitrite as N	0.11		0.050	0.029	mg/L			06/26/20 17:45	1
Sulfate	77		1.0	0.38	mg/L			06/26/20 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.42		0.080	0.039	mg/L		06/27/20 13:54	07/02/20 22:25	1
Calcium	72		0.50	0.13	mg/L		06/27/20 13:54	07/02/20 22:25	1
Cobalt	0.0014	J	0.0025	0.00013	mg/L		06/27/20 13:54	07/02/20 22:25	1
Lithium	0.043		0.0050	0.0034	mg/L		06/27/20 13:54	07/02/20 22:25	1
Magnesium	13		0.50	0.083	mg/L		06/27/20 13:54	07/02/20 22:25	1
Molybdenum	0.055		0.015	0.00061	mg/L		06/27/20 13:54	07/02/20 22:25	1
Potassium	2.4		0.50	0.16	mg/L		06/27/20 13:54	07/02/20 22:25	1
Sodium	14		0.50	0.35	mg/L		06/27/20 13:54	07/02/20 22:25	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.020		0.050	0.020	mg/L		06/27/20 13:54	07/02/20 22:01	1
Manganese	0.62		0.0050	0.00087	mg/L		06/27/20 13:54	07/02/20 22:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:43	1
Total Alkalinity as CaCO3 to pH 4.5	160		5.0	5.0	mg/L			06/30/20 17:05	1
Bicarbonate Alkalinity as CaCO3	160		5.0	5.0	mg/L			06/30/20 17:05	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 17:05	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.37				SU			06/25/20 11:18	1

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Client Sample ID: ARGWC-21

Date Collected: 06/25/20 13:15
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.7**		1.0	0.32	mg/L			06/26/20 16:40	1
Fluoride	**0.041**	**J**	0.10	0.026	mg/L			06/26/20 16:40	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 16:40	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 16:40	1
Sulfate	**210**		10	3.8	mg/L			07/08/20 20:44	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.82**		0.080	0.039	mg/L		06/27/20 13:54	07/02/20 22:29	1
Calcium	**80**		0.50	0.13	mg/L		06/27/20 13:54	07/02/20 22:29	1
Cobalt	**0.00097**	**J**	0.0025	0.00013	mg/L		06/27/20 13:54	07/02/20 22:29	1
Lithium	**0.013**		0.0050	0.0034	mg/L		06/27/20 13:54	07/02/20 22:29	1
Magnesium	**37**		0.50	0.083	mg/L		06/27/20 13:54	07/02/20 22:29	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/27/20 13:54	07/02/20 22:29	1
Potassium	**6.1**		0.50	0.16	mg/L		06/27/20 13:54	07/02/20 22:29	1
Sodium	**19**		0.50	0.35	mg/L		06/27/20 13:54	07/02/20 22:29	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.0**		0.050	0.020	mg/L		06/27/20 13:54	07/02/20 22:04	1
Manganese	**0.36**		0.0050	0.00087	mg/L		06/27/20 13:54	07/02/20 22:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:45	1
Total Alkalinity as CaCO3 to pH 4.5	**140**		5.0	5.0	mg/L			06/30/20 17:24	1
Bicarbonate Alkalinity as CaCO3	**140**		5.0	5.0	mg/L			06/30/20 17:24	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 17:24	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.98**				SU			06/25/20 13:15	1

Client Sample Results

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

Client Sample ID: ARGWA-19

Date Collected: 06/25/20 10:15
Date Received: 06/26/20 09:00

Lab Sample ID: 180-107562-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		1.0	0.32	mg/L			06/26/20 16:56	1
Fluoride	**0.030**	**J**	0.10	0.026	mg/L			06/26/20 16:56	1
Nitrate as N	**6.7**		0.10	0.023	mg/L			06/26/20 16:56	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 16:56	1
Sulfate	**9.8**		1.0	0.38	mg/L			06/26/20 16:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.091**		0.080	0.039	mg/L		06/27/20 13:54	07/02/20 22:32	1
Calcium	**14**		0.50	0.13	mg/L		06/27/20 13:54	07/02/20 22:32	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		06/27/20 13:54	07/02/20 22:32	1
Lithium	**0.0053**		0.0050	0.0034	mg/L		06/27/20 13:54	07/02/20 22:32	1
Magnesium	**5.5**		0.50	0.083	mg/L		06/27/20 13:54	07/02/20 22:32	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/27/20 13:54	07/02/20 22:32	1
Potassium	**2.6**		0.50	0.16	mg/L		06/27/20 13:54	07/02/20 22:32	1
Sodium	**13**		0.50	0.35	mg/L		06/27/20 13:54	07/02/20 22:32	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.020		0.050	0.020	mg/L		06/27/20 13:54	07/02/20 22:08	1
Manganese	**0.00089**	**J**	0.0050	0.00087	mg/L		06/27/20 13:54	07/02/20 22:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/02/20 11:40	07/02/20 13:00	1
Total Alkalinity as CaCO3 to pH 4.	**33**		5.0	5.0	mg/L			06/30/20 17:36	1
Bicarbonate Alkalinity as CaCO3	**33**		5.0	5.0	mg/L			06/30/20 17:36	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 17:36	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.80**				SU			06/25/20 10:15	1

Client Sample ID: ARGWA-20
Lab Sample ID: 180-107562-5

Date Collected: 06/25/20 12:30
Matrix: Water
Date Received: 06/26/20 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.1**		1.0	0.32	mg/L			06/26/20 17:13	1
Fluoride	<0.026		0.10	0.026	mg/L			06/26/20 17:13	1
Nitrate as N	**0.46**		0.10	0.023	mg/L			06/26/20 17:13	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 17:13	1
Sulfate	**16**		1.0	0.38	mg/L			06/26/20 17:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.081**		0.080	0.039	mg/L		06/27/20 13:54	07/02/20 22:36	1
Calcium	**9.6**		0.50	0.13	mg/L		06/27/20 13:54	07/02/20 22:36	1
Cobalt	**0.00015**	**J**	0.0025	0.00013	mg/L		06/27/20 13:54	07/02/20 22:36	1
Lithium	<0.0034		0.0050	0.0034	mg/L		06/27/20 13:54	07/02/20 22:36	1
Magnesium	**4.9**		0.50	0.083	mg/L		06/27/20 13:54	07/02/20 22:36	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		06/27/20 13:54	07/02/20 22:36	1
Potassium	**1.5**		0.50	0.16	mg/L		06/27/20 13:54	07/02/20 22:36	1
Sodium	**9.7**		0.50	0.35	mg/L		06/27/20 13:54	07/02/20 22:36	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.020		0.050	0.020	mg/L		06/27/20 13:54	07/02/20 22:11	1
Manganese	**0.0028**	**J**	0.0050	0.00087	mg/L		06/27/20 13:54	07/02/20 22:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/02/20 11:40	07/02/20 13:05	1
Total Alkalinity as CaCO3 to pH 4.	**39**		5.0	5.0	mg/L			06/30/20 17:43	1
Bicarbonate Alkalinity as CaCO3	**39**		5.0	5.0	mg/L			06/30/20 17:43	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 17:43	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.61**				SU			06/25/20 12:30	1

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

Lab Sample ID: MB 180-319637/6
Matrix: Water
Analysis Batch: 319637

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			06/26/20 07:33	1
Fluoride	<0.026		0.10	0.026	mg/L			06/26/20 07:33	1
Nitrate as N	<0.023		0.10	0.023	mg/L			06/26/20 07:33	1
Nitrite as N	<0.029		0.050	0.029	mg/L			06/26/20 07:33	1
Sulfate	<0.38		1.0	0.38	mg/L			06/26/20 07:33	1

Lab Sample ID: LCS 180-319637/5
Matrix: Water
Analysis Batch: 319637

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.9		mg/L		100	90 - 110
Fluoride	2.50	2.37		mg/L		95	90 - 110
Nitrate as N	2.50	2.41		mg/L		97	90 - 110
Nitrite as N	2.50	2.42		mg/L		97	90 - 110
Sulfate	50.0	50.3		mg/L		101	90 - 110

Lab Sample ID: MB 180-320882/6
Matrix: Water
Analysis Batch: 320882

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.38		1.0	0.38	mg/L			07/08/20 13:49	1

Lab Sample ID: LCS 180-320882/5
Matrix: Water
Analysis Batch: 320882

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	50.3		mg/L		101	90 - 110

Lab Sample ID: 180-107562-3 MS
Matrix: Water
Analysis Batch: 320882

Client Sample ID: ARGWC-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	210		500	709		mg/L		101	90 - 110

Lab Sample ID: 180-107562-3 MSD
Matrix: Water
Analysis Batch: 320882

Client Sample ID: ARGWC-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	210		500	713		mg/L		101	90 - 110	1	20

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

Lab Sample ID: MB 180-319816/1-A
Matrix: Water
Analysis Batch: 320452

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 319816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		06/27/20 13:54	07/02/20 21:26	1
Iron	<0.020		0.050	0.020	mg/L		06/27/20 13:54	07/02/20 21:26	1
Calcium	<0.13		0.50	0.13	mg/L		06/27/20 13:54	07/02/20 21:26	1
Manganese	<0.00087		0.0050	0.00087	mg/L		06/27/20 13:54	07/02/20 21:26	1
Cobalt	<0.00013		0.00050	0.00013	mg/L		06/27/20 13:54	07/02/20 21:26	1
Lithium	<0.0034		0.0050	0.0034	mg/L		06/27/20 13:54	07/02/20 21:26	1
Magnesium	<0.083		0.50	0.083	mg/L		06/27/20 13:54	07/02/20 21:26	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		06/27/20 13:54	07/02/20 21:26	1
Potassium	<0.16		0.50	0.16	mg/L		06/27/20 13:54	07/02/20 21:26	1
Sodium	<0.35		0.50	0.35	mg/L		06/27/20 13:54	07/02/20 21:26	1

Lab Sample ID: LCS 180-319816/2-A
Matrix: Water
Analysis Batch: 320452

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 319816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.23		mg/L		99	80 - 120
Iron	5.00	5.16		mg/L		103	80 - 120
Calcium	25.0	28.5		mg/L		114	80 - 120
Manganese	0.500	0.507		mg/L		101	80 - 120
Cobalt	0.500	0.527		mg/L		105	80 - 120
Lithium	0.500	0.521		mg/L		104	80 - 120
Magnesium	25.0	25.5		mg/L		102	80 - 120
Molybdenum	0.500	0.535		mg/L		107	80 - 120
Potassium	25.0	25.1		mg/L		101	80 - 120
Sodium	25.0	25.4		mg/L		101	80 - 120

Lab Sample ID: 180-107562-1 MS
Matrix: Water
Analysis Batch: 320452

Client Sample ID: EB#2
Prep Type: Dissolved
Prep Batch: 319816

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.042	J	1.25	1.23		mg/L		95	75 - 125
Iron	<0.020		5.00	5.23		mg/L		105	75 - 125
Calcium	<0.13		25.0	28.4		mg/L		114	75 - 125
Manganese	<0.00087		0.500	0.501		mg/L		100	75 - 125
Cobalt	0.00023	J	0.500	0.521		mg/L		104	75 - 125
Lithium	<0.0034		0.500	0.522		mg/L		104	75 - 125
Magnesium	<0.083		25.0	25.2		mg/L		101	75 - 125
Molybdenum	<0.00061		0.500	0.533		mg/L		107	75 - 125
Potassium	<0.16		25.0	24.8		mg/L		99	75 - 125
Sodium	<0.35		25.0	25.6		mg/L		102	75 - 125

Lab Sample ID: 180-107562-1 MSD
Matrix: Water
Analysis Batch: 320452

Client Sample ID: EB#2
Prep Type: Dissolved
Prep Batch: 319816

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.042	J	1.25	1.27		mg/L		98	75 - 125	3	20

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

Lab Sample ID: 180-107562-1 MSD
Matrix: Water
Analysis Batch: 320452

Client Sample ID: EB#2
Prep Type: Dissolved
Prep Batch: 319816

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	<0.020		5.00	5.00		mg/L		100	75 - 125	5	20
Calcium	<0.13		25.0	27.7		mg/L		111	75 - 125	2	20
Manganese	<0.00087		0.500	0.501		mg/L		100	75 - 125	0	20
Cobalt	0.00023	J	0.500	0.510		mg/L		102	75 - 125	2	20
Lithium	<0.0034		0.500	0.504		mg/L		101	75 - 125	4	20
Magnesium	<0.083		25.0	25.0		mg/L		100	75 - 125	1	20
Molybdenum	<0.00061		0.500	0.516		mg/L		103	75 - 125	3	20
Potassium	<0.16		25.0	24.2		mg/L		97	75 - 125	2	20
Sodium	<0.35		25.0	24.9		mg/L		100	75 - 125	3	20

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-320115/1-A
Matrix: Water
Analysis Batch: 320175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 320115

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/01/20 06:00	07/01/20 07:13	1

Lab Sample ID: LCS 180-320115/2-A
Matrix: Water
Analysis Batch: 320175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 320115

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	11.9	10.5		mg/L		89	85 - 115

Lab Sample ID: MB 180-320341/1-A
Matrix: Water
Analysis Batch: 320374

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 320341

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		07/02/20 11:40	07/02/20 12:53	1

Lab Sample ID: LCS 180-320341/2-A
Matrix: Water
Analysis Batch: 320374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 320341

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	11.6	9.95		mg/L		86	85 - 115

Lab Sample ID: 180-107562-4 MS
Matrix: Water
Analysis Batch: 320374

Client Sample ID: ARGWA-19
Prep Type: Total/NA
Prep Batch: 320341

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	<2.1		11.6	9.73		mg/L		84	75 - 125

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 180-107562-4 MSD
Matrix: Water
Analysis Batch: 320374

Client Sample ID: ARGWA-19
Prep Type: Total/NA
Prep Batch: 320341

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	<2.1		11.6	9.73		mg/L		84	75 - 125	0	20

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-320519/29
Matrix: Water
Analysis Batch: 320519

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	<5.0		5.0	5.0	mg/L			06/30/20 16:03	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 16:03	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			06/30/20 16:03	1

Lab Sample ID: LCS 180-320519/28
Matrix: Water
Analysis Batch: 320519

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	230		mg/L		92	90 - 110

Lab Sample ID: 180-107562-3 DU
Matrix: Water
Analysis Batch: 320519

Client Sample ID: ARGWC-21
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	140		140		mg/L		1	20
Bicarbonate Alkalinity as CaCO3	140		140		mg/L		1	20
Carbonate Alkalinity as CaCO3	<5.0		<5.0		mg/L		NC	20

QC Association Summary

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

HPLC/IC

Analysis Batch: 319637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-1	EB#2	Total/NA	Water	EPA 300.0 R2.1	
180-107562-2	ARGWC-23	Total/NA	Water	EPA 300.0 R2.1	
180-107562-3	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
180-107562-4	ARGWA-19	Total/NA	Water	EPA 300.0 R2.1	
180-107562-5	ARGWA-20	Total/NA	Water	EPA 300.0 R2.1	
MB 180-319637/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-319637/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 320882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-3	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
MB 180-320882/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-320882/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-107562-3 MS	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	
180-107562-3 MSD	ARGWC-21	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 319816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-1	EB#2	Dissolved	Water	3005A	
180-107562-1	EB#2	Total Recoverable	Water	3005A	
180-107562-2	ARGWC-23	Dissolved	Water	3005A	
180-107562-2	ARGWC-23	Total Recoverable	Water	3005A	
180-107562-3	ARGWC-21	Dissolved	Water	3005A	
180-107562-3	ARGWC-21	Total Recoverable	Water	3005A	
180-107562-4	ARGWA-19	Dissolved	Water	3005A	
180-107562-4	ARGWA-19	Total Recoverable	Water	3005A	
180-107562-5	ARGWA-20	Dissolved	Water	3005A	
180-107562-5	ARGWA-20	Total Recoverable	Water	3005A	
MB 180-319816/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-319816/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-107562-1 MS	EB#2	Dissolved	Water	3005A	
180-107562-1 MSD	EB#2	Dissolved	Water	3005A	

Analysis Batch: 320452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-1	EB#2	Dissolved	Water	EPA 6020B	319816
180-107562-1	EB#2	Total Recoverable	Water	EPA 6020B	319816
180-107562-2	ARGWC-23	Dissolved	Water	EPA 6020B	319816
180-107562-2	ARGWC-23	Total Recoverable	Water	EPA 6020B	319816
180-107562-3	ARGWC-21	Dissolved	Water	EPA 6020B	319816
180-107562-3	ARGWC-21	Total Recoverable	Water	EPA 6020B	319816
180-107562-4	ARGWA-19	Dissolved	Water	EPA 6020B	319816
180-107562-4	ARGWA-19	Total Recoverable	Water	EPA 6020B	319816
180-107562-5	ARGWA-20	Dissolved	Water	EPA 6020B	319816
180-107562-5	ARGWA-20	Total Recoverable	Water	EPA 6020B	319816
MB 180-319816/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	319816
LCS 180-319816/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	319816
180-107562-1 MS	EB#2	Dissolved	Water	EPA 6020B	319816
180-107562-1 MSD	EB#2	Dissolved	Water	EPA 6020B	319816

QC Association Summary

Client: Southern Company
Project/Site: Plant Arkwright AP3 Alternate Source

Job ID: 180-107562-1

General Chemistry

Prep Batch: 320115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-1	EB#2	Total/NA	Water	9030B	
180-107562-2	ARGWC-23	Total/NA	Water	9030B	
180-107562-3	ARGWC-21	Total/NA	Water	9030B	
MB 180-320115/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-320115/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 320175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-1	EB#2	Total/NA	Water	EPA 9034	320115
180-107562-2	ARGWC-23	Total/NA	Water	EPA 9034	320115
180-107562-3	ARGWC-21	Total/NA	Water	EPA 9034	320115
MB 180-320115/1-A	Method Blank	Total/NA	Water	EPA 9034	320115
LCS 180-320115/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	320115

Prep Batch: 320341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-4	ARGWA-19	Total/NA	Water	9030B	
180-107562-5	ARGWA-20	Total/NA	Water	9030B	
MB 180-320341/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-320341/2-A	Lab Control Sample	Total/NA	Water	9030B	
180-107562-4 MS	ARGWA-19	Total/NA	Water	9030B	
180-107562-4 MSD	ARGWA-19	Total/NA	Water	9030B	

Analysis Batch: 320374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-4	ARGWA-19	Total/NA	Water	EPA 9034	320341
180-107562-5	ARGWA-20	Total/NA	Water	EPA 9034	320341
MB 180-320341/1-A	Method Blank	Total/NA	Water	EPA 9034	320341
LCS 180-320341/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	320341
180-107562-4 MS	ARGWA-19	Total/NA	Water	EPA 9034	320341
180-107562-4 MSD	ARGWA-19	Total/NA	Water	EPA 9034	320341

Analysis Batch: 320519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-1	EB#2	Total/NA	Water	SM2320 B	
180-107562-2	ARGWC-23	Total/NA	Water	SM2320 B	
180-107562-3	ARGWC-21	Total/NA	Water	SM2320 B	
180-107562-4	ARGWA-19	Total/NA	Water	SM2320 B	
180-107562-5	ARGWA-20	Total/NA	Water	SM2320 B	
MB 180-320519/29	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-320519/28	Lab Control Sample	Total/NA	Water	SM2320 B	
180-107562-3 DU	ARGWC-21	Total/NA	Water	SM2320 B	

Field Service / Mobile Lab

Analysis Batch: 320074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107562-2	ARGWC-23	Total/NA	Water	Field Sampling	
180-107562-3	ARGWC-21	Total/NA	Water	Field Sampling	
180-107562-4	ARGWA-19	Total/NA	Water	Field Sampling	
180-107562-5	ARGWA-20	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

681-Atlanta

eurofins

Client Information	Sampler: D Howard, E Guillen, F Mayila	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 180-61584-12490.1
Client Contact: Joju Abraham	Phone:	E-Mail: shali.brown@testamericainc.com		Page: Page 1 of 1
Company: Southern Company				Job #:

Address: 241 Ralph McGill Blvd SE B10185	Due Date Requested:	Analysis Requested
City: Atlanta	TAT Requested (days): 5 days	
State, Zip: GA, 30308		
Phone:	PO #: SCS10382606	
Email: JAbraham@southernco.com	WO #:	
Project Name: Plant Arkwright AP3 Alternate Source	Project #: 18020201	
Site: Georgia	SSOW#:	

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastoil, ST=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B; 300_ORGFMS	6020B - (MOD) Custom 8 (CoMoLiCaMgNaK)	6020B - (MOD) Dissolved Fe/Mn	2540C_Calcd - Solids, Total Dissolved (TDS)	9034_Calc - Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	N	CB		
EB#2	6/25/20	0910	G	Water	Y		X	X		X	X	4	1
ARGWC-23		1118	G	Water	Y		X	X		X	X	4	pH=6.37
ARGWC-21		1315	G	Water	Y		X	X		X	X	4	pH=5.98
ARGWA-19		1015	G	Water	Y		X	X		X	X	4	pH=5.80
ARGWA-20	↓	1230	G	Water	Y		X	X		X	X	4	pH=5.61
				Water									
				Water									
				Water									
				Water									
				Water									

180-107562 Chain of Custody

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed): [ ] Return To Client [X] Disposal By Lab [ ] Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

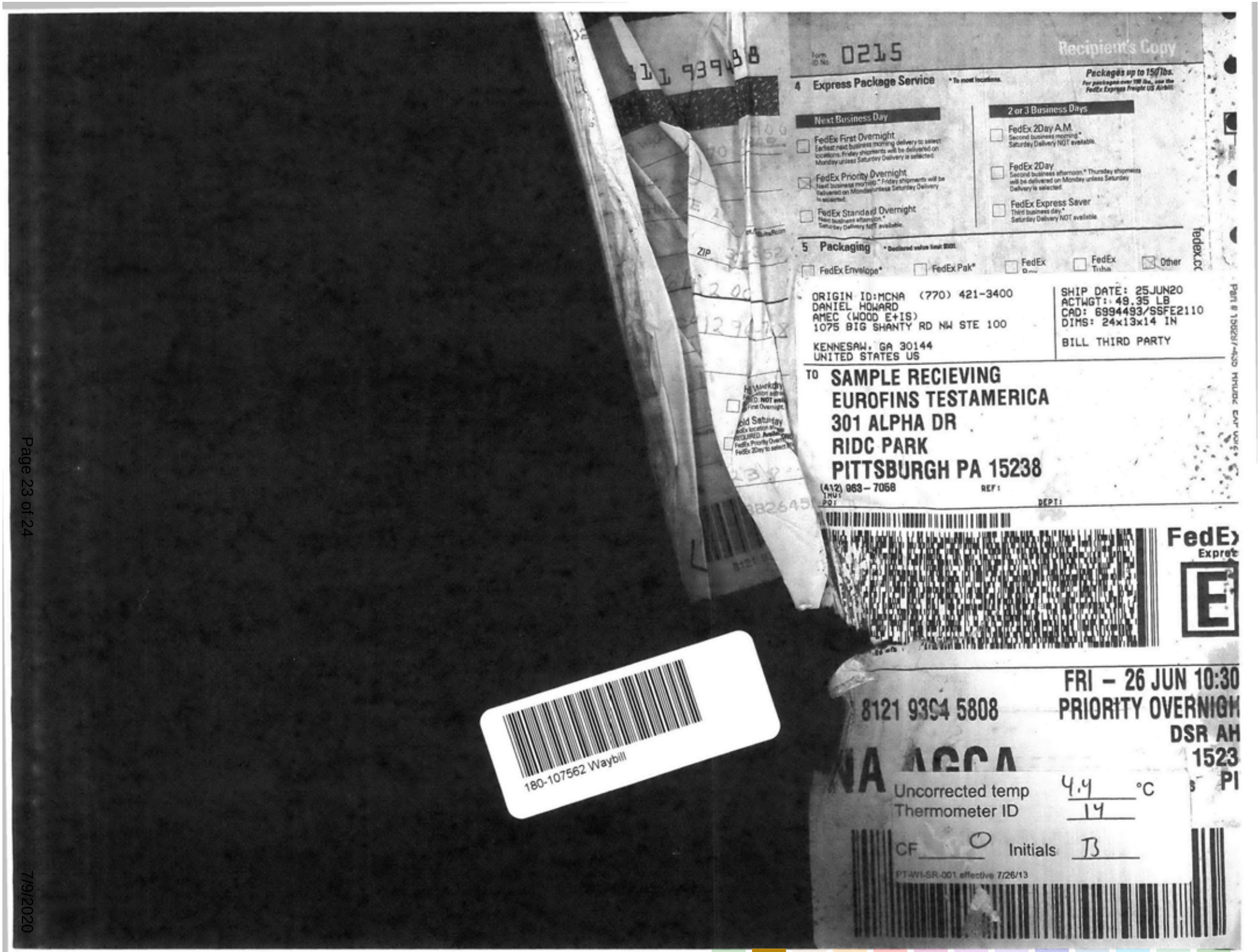
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Daniel L Howard	6/25/20/1815			6/26/20 900	EMSR
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


Recipient's Copy
Express Package Service
Packages up to 150 lbs.
Next Business Day
2 or 3 Business Days
FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight
FedEx 2Day A.M.
FedEx 2Day
FedEx Express Saver
Packaging
FedEx Envelope*
FedEx Pak*
Other
ORIGIN ID:MCNA (770) 421-3400
DANIEL HOWARD
AMEC (WOOD E+IS)
1075 BIG SHANTY RD NW STE 100
KENNESAW, GA 30144
UNITED STATES US
SHIP DATE: 25JUN20
ACTWGT: 49.35 LB
CAD: 6994493/SSFE2110
DIMS: 24x13x14 IN
BILL THIRD PARTY
TO SAMPLE RECIEVING
EUROFINS TESTAMERICA
301 ALPHA DR
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7068
FedEx
8121 9394 5808
FRI - 26 JUN 10:30
PRIORITY OVERNIGHT
DSR AH
1523
Uncorrected temp 4.4 °C
Thermometer ID 14
CF O
Initials JB
PT-WI-SR-001 effective 7/26/13
180-107562 Waybill

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-107562-1

Login Number: 107562
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	

Date: 6-23-20
Time: 0710
Prepared By: T. PARKER
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 369323 VLOG
Pine Handset ID: 030616
Battery Voltage %: 100
BATT. PACK: Rev No. 407845 V1.03

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes____ No____ Date:____ Time:____	N/A
Current Air Temperature °C (meter reading):		23.2°C
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):	RDO Cap; 52 days remaining	756.5 mm Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	N/A
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		8.45
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.19
DO concentration after Calibration (mg/L):		8.44
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	100%
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	6-23-20

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Exp. 12/2020 Lot# 96L814	1.413 mS/cm
Temperature (°C)		25.72
Reading before Calibration (mS/cm)		1.31 mS/cm
Reading AFTER Calibration (mS/cm)		1.41
Conductivity Cell Constant (unitless):		N/A

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Exp. 11/2021 Lot# 96K721	
pH 7.0 value after calibration:	25.4°C	
pH 7.0 mV **(range is -50 to +50 mV)**:		-16.0
pH 10 value before calibration:	Exp. 11/2021 Lot# 96K672	
pH 10 value after calibration:		10.01
pH 10 mV **(range is -130 to -230 mV)**:		-196.9
pH 4.0 value before calibration:	Exp. 12/2021 Lot# 96L804	4.02
pH 4.0 value after calibration:	25.51	
pH 4.0 mV **(range is 130 to 230 mV)**:		142.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Exp. 08/2020 Lot# 96K142	24.2
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	232.04
Reading before calibration (mV):		221.0
Reading after calibration (mV):		232.3

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot# A0113 Exp. Jul. 2021	Before Cal:	After Cal:	19.2
180 NTU Turbidity Standard Lot# A9134 Exp. Aug. 2020	Before Cal:	After Cal:	98.9
800 NTU Turbidity Standard Lot# A0111 Exp. Jul. 2021	Before Cal:	After Cal:	795
10 NTU Turbidity Check STD Lot# A9268 Exp. Jan. 2021	Before Cal:	After Cal:	9.56
0.1 NTU Turbidity Check STD Lot# A0033 Exp. Feb. 2022	Before Cal:	After Cal:	0.12
CALIBRATION SUCCESSFUL?			

Hach Cat. # 2659749

Date: 6-24-20
Time: 07:16
Prepared By: T. PARKER
Checked By: D Howard

Wood.
Project No.
6122201429

Pine Sonde ID: 367323 V1.09
Pine Handset ID: 030616
Battery Voltage %: 100
BATT. PACK SN.: 407943 V1.03

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes____ No____ Date:____ Time: N/A	
Current Air Temperature °C (meter reading):		24.40
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		751.4 mm Hg
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	N/A
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		8.26 mg/L
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.16
DO concentration after Calibration (mg/L):		8.27
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	100% GMA
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	~~GMA~~ 6-24-20

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Exp 12/2020 Lot# 9GL814	1.413
Temperature (°C)		25.03
Reading before Calibration (mS/cm)		1.42
Reading AFTER Calibration (mS/cm)		1.41 GMA
Conductivity Cell Constant (unitless):		N/A

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Exp. 11/2021 Lot# 9GK721	N/A
pH **7.0** value after calibration:		N/A
pH **7.0** mV **(range is -50 to +50 mV)**:		-17.5
pH 10 value before calibration:	Exp. 11/2021 Lot# 9GK672	N/A
pH 10 value after calibration:		10.01 GMA
pH 10 mV **(range is -130 to -230 mV)**:		-195.1
pH **4.0** value before calibration:	Exp. 12/2021 Lot# 9GL804	4.05
pH **4.0** value after calibration:		N/A
pH **4.0** mV **(range is 130 to 230 mV)**:		140.2

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Exp. 08/2020 Lot# 9GK142	24.78
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	231.3
Reading before calibration (mV):		228.8
Reading after calibration (mV):		231.7 GMA

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot# A8112 Exp. Jul. 2021	Before Cal:	After Cal:	20.0
100 NTU Turbidity Standard Lot# A9134 Exp. Aug. 2020	Before Cal:	After Cal:	99.4
800 NTU Turbidity Standard Lot# A0111 Exp. Jul. 2022	Before Cal:	After Cal:	884
10 NTU Turbidity Check STD Lot# A9268 Exp. Jan 2021	Before Cal:	After Cal:	9.38 parked
0.1 NTU Turbidity Check STD Lot# A0837 Exp. Feb. 2022	Before Cal:	After Cal:	0.14
CALIBRATION SUCCESSFUL?			

Date: 6-23-20
Time: 715
Prepared By: Ever Guillen
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 30666
Pine Handset ID: 30619
Battery Voltage %: 80

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes____ No ✓ Date:____ Time:____	
Current Air Temperature °C (meter reading):	~~24.63~~	~~24.6~~ 22.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	751.6
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.62
DO concentration after Calibration (mg/L):	8.04	~~8.03~~
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		23.37
Reading before Calibration (mS/cm)	1.466	~~1.444~~
Reading AFTER Calibration (mS/cm)	1.413	~~1.46~~
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.55
pH 7.0 value after calibration:		7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-32.9
pH 10 value before calibration:	10.46	~~10.0~~
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-206.3
pH **4.0** value before calibration:		4.65
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		139.5

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		23.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	240
Reading before calibration (mV):		207.1
Reading after calibration (mV):		231.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.				
10 NTU Turbidity Standard	Before Cal:	9.45	After Cal:	9.78
20 NTU Turbidity Standard	Before Cal:	19.8	After Cal:	20.1
100 NTU Turbidity Standard	Before Cal:	92.9	After Cal:	100
800 NTU Turbidity Check STD	Before Cal:	788	After Cal:	790
____ NTU Turbidity Check STD	Before Cal:		After Cal:	
CALIBRATION SUCCESSFUL?				YES

Date: 6-24-20
Time: 715
Prepared By: EVER GUILLEN
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 30666
Pine Handset ID: 30614
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):	23.3	23.94
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	751.4
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.76
DO concentration after Calibration (mg/L):		8.18
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		23.6
Reading before Calibration (mS/cm)		1.433
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		-

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:		7.55
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-33.0
pH 10 value before calibration:		10.48
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-206.8
pH 4.0 value before calibration:		4.66
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		139.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		23.4
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	240.0
Reading before calibration (mV):		206.4
Reading after calibration (mV):		231

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.				
10 NTU Turbidity Standard	Before Cal:	9.57	After Cal:	10.1
20 NTU Turbidity Standard	Before Cal:	19.9	After Cal:	20.6
100 NTU Turbidity Standard	Before Cal:	99.2	After Cal:	99.9
800 NTU Turbidity Check STD	Before Cal:	798	After Cal:	803
____ NTU Turbidity Check STD	Before Cal:		After Cal:	
CALIBRATION SUCCESSFUL?				

Date: 6-25-20
Time: 745
Prepared By: EVER GUICHER
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 30666
Pine Handset ID: 30614
Battery Voltage %: 100

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes_____ No ✓ Date:_____ Time:_____	
Current Air Temperature °C (meter reading):		22.2 ~~22.2~~
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	753.5
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	8.43
DO concentration after Calibration (mg/L):		8.17
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	-
DO Charge (DO ch):	Acceptable Range is 25 to 75	-
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	-

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		22.7
Reading before Calibration (mS/cm)		1.431
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		-

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:		7.56
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-33.4
pH 10 value before calibration:		10.46
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-206.0
pH **4.0** value before calibration:		4.66
pH **4.0** value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		139.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		23.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	240
Reading before calibration (mV):		206.3
Reading after calibration (mV):		237

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
10 NTU Turbidity Standard	Before Cal:	9.55	After Cal:	9.98
20 NTU Turbidity Standard	Before Cal:	20.2	After Cal:	20.0
100 NTU Turbidity Standard	Before Cal:	100	After Cal:	100.0
800 NTU Turbidity Check STD	Before Cal:	797	After Cal:	793
_____ NTU Turbidity Check STD	Before Cal:		After Cal:	
CALIBRATION SUCCESSFUL?				YES

Date: 6/23/20
Time: 730
Prepared By: Daniel Howard
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 646770
Pine Handset ID:
Battery Voltage %: 90

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date: ___ Time: ___	
Current Air Temperature °C (meter reading):		22.8
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	753.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.80
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0968

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 20010025 Exp 8/21	1.413
Temperature (°C)	Lot 9Gt170 Exp 9/20	25.2
Reading before Calibration (mS/cm)		1.632
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.8658

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 Exp 8/21	7.05
pH **7.0** value after calibration:	23.6°C	7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-2.9
pH 10 value before calibration:	Lot 19320102 Exp 8/21	9.96
pH 10 value after calibration:	23.9	10.00
pH 10 mV **(range is -130 to -230 mV)**:		-176.1
pH **4.0** value before calibration:	Lot 20010025 Exp 8/21	4.13
pH **4.0** value after calibration:	23.6°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		170.6

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 Exp 8/21	23.7
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	231
Reading before calibration (mV):		225.8
Reading after calibration (mV):		231

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A9254, Exp 4/20 (A0022	Before Cal:	After Cal:	19.5
100 NTU Turbidity Standard Lot A9127, Exp 8/20	Before Cal:	After Cal:	99.4
800 NTU Turbidity Standard Lot A9213, Exp 11/20	Before Cal:	After Cal:	781
10 NTU Turbidity Check STD Lot A9254, Exp 4/20	Before Cal:	After Cal:	9.80
<0.1 NTU Turbidity Check STD Lot A0037, Exp 2/22	Before Cal:	After Cal:	0.14
CALIBRATION SUCCESSFUL?			

Hach 2100 Q

Date: 6/24/20
Time: 0935
Prepared By: Daniel Howard
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 646770
Pine Handset ID:
Battery Voltage %: 90.6 85%

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date: ___ Time: ___	
Current Air Temperature °C (meter reading):		24.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	751.8
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.56
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0902

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 9GI 170 Exp 9/20	1.413
Temperature (°C)		25.8
Reading before Calibration (mS/cm)		1.619
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.8727

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 Exp 8/21	7.10
pH **7.0** value after calibration:	25.5°C	7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-5.5
pH 10 value before calibration:	Lot 19320102 Exp 8/21	9.99
pH 10 value after calibration:	25.4°C	10.00
pH 10 mV **(range is -130 to -230 mV)**:		-176.4
pH **4.0** value before calibration:	Lot 20010025 Exp 8/21	4.12
pH **4.0** value after calibration:	25.4°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		170.2

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 Exp 8/21	25.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	229
Reading before calibration (mV):		199.0
Reading after calibration (mV):		229

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.				
20 NTU Turbidity Standard	Lot A0022 Exp 8/20	Before Cal:	After Cal:	20.0
100 NTU Turbidity Standard	Lot A9127, Exp 8/20	Before Cal:	After Cal:	99.9
800 NTU Turbidity Standard	Lot A9213, Exp 11/20	Before Cal:	After Cal:	798
10 NTU Turbidity Check STD	Lot A9254, Exp 12/20	Before Cal:	After Cal:	9.41
<0.1 NTU Turbidity Check STD	Lot A0057 Exp 2/22	Before Cal:	After Cal:	0.17
CALIBRATION SUCCESSFUL?				

Hach 2100 Q

Date: 6/25/20
Time: 0745
Prepared By: David Howard
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 646770
Pine Handset ID: _____
Battery Voltage %: 85

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		23.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	755.2
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.69
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0958

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 96I170 Exp 9/20	1.413
Temperature (°C)		24.9
Reading before Calibration (mS/cm)		1.593
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.8874

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 19340057 Exp 8/21	7.07
pH 7.0 value after calibration:	24.4°C	7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-3.9
pH 10 value before calibration:	Lot 19320102 Exp 8/21	9.96
pH 10 value after calibration:	24.5°C	10.00
pH 10 mV **(range is -130 to -230 mV)**:		-175.5
pH 4.0 value before calibration:	Lot 20010025 Exp 8/21	4.14
pH 4.0 value after calibration:	24.4°C	4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		169.5

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 Exp 8/21	24.2
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	230.0
Reading before calibration (mV):		208.8
Reading after calibration (mV):		230.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard Lot A0022, Exp 12/20	Before Cal:	After Cal:	19.9
100 NTU Turbidity Standard Lot A9127, Exp 8/20	Before Cal:	After Cal:	100
800 NTU Turbidity Standard Lot A9213, Exp 11/20	Before Cal:	After Cal:	801
10 NTU Turbidity Check STD Lot A9254, Exp 11/20	Before Cal:	After Cal:	9.42
<0.1 NTU Turbidity Check STD Lot A0087, Exp 2/22	Before Cal:	After Cal:	0.15
CALIBRATION SUCCESSFUL?			

Hach 2100 Q

Date: 6/26/20
Time: 0735
Prepared By: Daniel Howard
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 646770
Pine Handset ID:
Battery Voltage %: 85

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		VALUE
Was DO membrane changed?	Yes ___ No ✓ Date:___ Time:___	
Current Air Temperature °C (meter reading):		23.1
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	758.9
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.84
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0917

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot 9GI170 Exp 9/20	1.413
Temperature (°C)		23.1
Reading before Calibration (mS/cm)		1.591
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.8882

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH 7.0 value before calibration:	Lot 19340057 Exp 8/21 23.5°C	7.07
pH 7.0 value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-4.3
pH 10 value before calibration:	Lot 19320102 Exp 8/21 23.6°C	9.96
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-176.1
pH 4.0 value before calibration:	Lot 20010025 Exp 8/21 23.5°C	4.17
pH 4.0 value after calibration:		4.00
pH 4.0 mV **(range is 130 to 230 mV)**:		168.4

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 Exp 8/21	23.4
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	231
Reading before calibration (mV):		217.2
Reading after calibration (mV):		231.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard Lot A0022, Exp 12/20	Before Cal:	After Cal:	20.0
100 NTU Turbidity Standard Lot A9127, Exp 8/20	Before Cal:	After Cal:	100
800 NTU Turbidity Standard Lot A9213, Exp 11/20	Before Cal:	After Cal:	797
10 NTU Turbidity Check STD Lot A9254, Exp 11/20	Before Cal:	After Cal:	9.51
20.1 NTU Turbidity Check STD Lot A0083, Exp 2/22	Before Cal:	After Cal:	0.19
CALIBRATION SUCCESSFUL?			

Hach 2100Q

Date: 8/23/20
Time: 0715
Prepared By: F. MAYILA
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 040821
Pine Handset ID: 30612
Battery Voltage %: _____

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes_____ No X Date:_____ Time:_____	
Current Air Temperature °C (meter reading):		26.1
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		751.6
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.56
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	93.3
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		26.0
Reading before Calibration (mS/cm)		1.633
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.60
pH **7.0** value after calibration:		7.0
pH **7.0** mV **(range is -50 to +50 mV)**:		21.6
pH 10 value before calibration:		10.56
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-209.4
pH **4.0** value before calibration:		4.69
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		136.2

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		26.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	
Reading before calibration (mV):		202.8
Reading after calibration (mV):		227

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
10 NTU Turbidity Standard	Before Cal:	After Cal:	9.07
20 NTU Turbidity Standard	Before Cal:	After Cal:	19.6
100 NTU Turbidity Standard	Before Cal:	After Cal:	100.0
800 NTU Turbidity ~~Check STD~~	Before Cal:	After Cal:	796
10 NTU Turbidity Check STD PASSED	Before Cal:	After Cal:	9.81
CALIBRATION SUCCESSFUL?			

Date: 6/24/2020
Time: 0720
Prepared By: F. MAYLA
Checked By: _____

Wood.
Project No.
6122201429

Pine Sonde ID: 040821
Pine Handset ID: 30612
Battery Voltage %: _____

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes____ No NO Date:____ Time:____	
Current Air Temperature °C (meter reading):		25.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		751.7
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.85
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	93.6
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		26.3
Reading before Calibration (mS/cm)		1.574
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.66
pH **7.0** value after calibration:		7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-38.7
pH 10 value before calibration:		10.57
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-209.9
pH **4.0** value before calibration:		4.71
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		134.9

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		26.1
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	
Reading before calibration (mV):		202.8
Reading after calibration (mV):		228.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
____NTU Turbidity Standard		Before Cal:	After Cal:	
20 NTU Turbidity Standard		Before Cal:	After Cal:	19.7
100 NTU Turbidity Standard	CALIBR CHECK	Before Cal:	After Cal:	102
800 NTU Turbidity ~~Check STD~~		Before Cal:	After Cal:	797
10 NTU Turbidity Check STD	PASSED	Before Cal:	After Cal:	9.98
CALIBRATION SUCCESSFUL?				

Date: 6/25/20
Time: 0730
Prepared By: EMAYILA
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 040821
Pine Handset ID: 30612
Battery Voltage %:

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes____ No X Date:____ Time:____	
Current Air Temperature °C (meter reading):		22.94
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		753.3
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.88
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	93.2
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [**Note:** Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		25.2
Reading before Calibration (mS/cm)		1.584
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.62
pH **7.0** value after calibration:		7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-36.4
pH 10 value before calibration:		10.53
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-208.9
pH **4.0** value before calibration:		4.72
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		135.1

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		24.8
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	
Reading before calibration (mV):		206.1
Reading after calibration (mV):		229

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**				
20 NTU Turbidity Standard		Before Cal:	After Cal:	20.1
100 NTU Turbidity Standard		Before Cal:	After Cal:	101
800 NTU Turbidity Standard		Before Cal:	After Cal:	807
10 NTU Turbidity Check STD	Passed Calibration Check	Before Cal:	After Cal:	9.51
____ NTU Turbidity Check STD		Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?				

Date: 6/26/20
Time: 0735
Prepared By: FMAYLA
Checked By:

Wood.
Project No.
6122201429

Pine Sonde ID: 040821
Pine Handset ID: 30612
Battery Voltage %:

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes____ No X Date:____ Time:____	
Current Air Temperature °C (meter reading):		20.03
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		757.3
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		8.29
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.8
DO Charge (DO ch):	Acceptable Range is 25 to 75	
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)		1.413
Temperature (°C)		22.5
Reading before Calibration (mS/cm)		1.566
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:		7.60
pH **7.0** value after calibration:		7.00
pH 7.0 mV **(range is -50 to +50 mV)**:		-35.6
pH 10 value before calibration:		10.47
pH 10 value after calibration:		10.00
pH 10 mV **(range is -130 to -230 mV)**:		-207.1
pH **4.0** value before calibration:		4.77
pH **4.0** value after calibration:		4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		133.0

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):		22.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	
Reading before calibration (mV):		210.7
Reading after calibration (mV):		233

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.				
20 NTU Turbidity Standard		Before Cal:	After Cal:	20.1
100 NTU Turbidity Standard		Before Cal:	After Cal:	101
800 NTU Turbidity Standard		Before Cal:	After Cal:	805
10 NTU Turbidity Check STD	Passed Calibration Check	Before Cal:	After Cal:	9.47
____ NTU Turbidity Check STD		Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?				

Product Name: Low-Flow System

Date: 2020-06-24 12:39:41

Project Information:		Pump Information:	
Operator Name	Terrell Parker	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.170 in
Site Name	ARAMW-1	Tubing Length	48 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369323		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	42.0 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-1	Final Pumping Rate	125 mL/min
Well diameter	2 in	Total System Volume	0.3142443 L
Well Total Depth	45.31 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.04 in
Depth to Water	12.93 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	12:13:49	2100.03	21.97	6.34	730.89	6.26	13.10	0.26	57.89
Last 5	12:18:49	2400.02	22.14	6.33	731.25	5.19	13.10	0.26	60.33
Last 5	12:23:49	2700.02	22.14	6.31	729.62	3.92	13.10	0.24	62.35
Last 5	12:28:49	2999.91	22.13	6.31	730.56	4.13	13.10	0.23	62.17
Last 5	12:33:49	3299.91	22.08	6.31	738.10	3.95	13.10	0.24	61.60
Variance 0			-0.01	-0.01	-1.63			-0.02	2.01
Variance 1			-0.01	-0.00	0.94			-0.01	-0.18
Variance 2			-0.04	-0.00	7.54			0.01	-0.58

Notes

Sample time: 12:45

Grab Samples

ARAMW-1

Groundwater

Product Name: Low-Flow System

Date: 2020-06-24 16:38:57

Project Information:		Pump Information:	
Operator Name	Terrell Parker	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.170 in
Site Name	ARAMW-2	Tubing Length	25 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369323		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	20 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-2	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2115856 L
Well Total Depth	24.85 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.24 in
Depth to Water	13.12 ft	Total Volume Pumped	22 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	16:15:18	6900.18	21.70	6.18	712.84	6.10	13.14	0.08	35.98
Last 5	16:20:18	7200.18	21.67	6.19	700.41	5.24	13.14	0.08	36.50
Last 5	16:25:18	7500.18	21.79	6.19	710.15	4.70	13.14	0.09	33.32
Last 5	16:30:18	7800.18	21.62	6.19	719.21	4.69	13.14	0.09	33.11
Last 5	16:35:18	8100.18	21.66	6.19	718.48	4.90	13.14	0.09	32.36
Variance 0			0.12	-0.00	9.74			0.01	-3.17
Variance 1			-0.18	0.00	9.06			0.00	-0.22
Variance 2			0.04	0.00	-0.73			-0.01	-0.75

Notes

Sample time: 16:40

Grab Samples

ARAMW-2

Groundwater

Product Name: Low-Flow System

Date: 2020-06-25 10:13:11

Project Information:		Pump Information:	
Operator Name	Ever Guillen	Pump Model/Type	QED
Company Name	Wood	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.17 in
Site Name	ARGWA-19	Tubing Length	52.74 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	459710		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	47.74 ft

Well Information:		Pumping Information:	
Well ID	ARGWA-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.7154009 L
Well Total Depth	52.74 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	24.67 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond mS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	09:51:41	900.03	19.42	5.79	0.19	1.81	24.77	3.81	99.10
Last 5	09:56:41	1199.92	19.42	5.80	0.19	1.17	24.77	3.75	96.03
Last 5	10:01:41	1499.93	19.31	5.80	0.19	1.31	24.77	3.70	94.35
Last 5	10:06:41	1799.93	19.23	5.80	0.19	1.05	24.77	3.67	93.74
Last 5	10:11:41	2099.93	19.21	5.80	0.19	0.77	24.77	3.63	91.86
Variance 0			-0.10	0.00	-0.00			-0.05	-1.68
Variance 1			-0.08	-0.00	-0.00			-0.03	-0.61
Variance 2			-0.02	-0.00	-0.00			-0.04	-1.88

Notes

Sampled@ 1015

Grab Samples

Product Name: Low-Flow System

Date: 2020-06-25 12:29:18

Project Information:		Pump Information:	
Operator Name	Ever Guillen	Pump Model/Type	QED
Company Name	Wood	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.17 in
Site Name	ARGWA-20	Tubing Length	37.70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	459710		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	32.70 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6482711 L
Well Total Depth	37.70 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	12.07 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond mS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	12:05:26	899.94	19.91	5.58	0.13	8.46	12.29	5.42	94.08
Last 5	12:10:26	1199.93	19.64	5.58	0.13	6.72	12.29	5.34	91.29
Last 5	12:15:30	1503.93	19.71	5.61	0.13	5.96	12.29	5.41	91.24
Last 5	12:20:30	1803.99	19.93	5.61	0.14	5.40	12.29	5.32	90.80
Last 5	12:25:30	2103.95	19.98	5.61	0.13	3.37	12.29	5.23	90.20
Variance 0			0.07	0.03	0.00			0.07	-0.06
Variance 1			0.23	-0.00	0.00			-0.09	-0.44
Variance 2			0.04	-0.00	-0.00			-0.09	-0.60

Notes

SAMPLED @ 1230

Grab Samples

Product Name: Low-Flow System

Date: 2020-06-25 13:18:31

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	QED Micropurge Bladder Pump
Company Name	Wood	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.25 in
Site Name	ARGWC-21	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646770		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	22 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-21	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.7406238 L
Well Total Depth	26.98 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	13.63 ft	Total Volume Pumped	9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	12:54:58	1500.00	19.96	5.98	600.23	9.11	14.90	0.15	60.75
Last 5	12:59:58	1799.99	20.03	5.98	600.63	7.18	14.90	0.15	60.51
Last 5	13:04:58	2099.99	19.96	5.98	600.65	5.38	14.90	0.14	60.14
Last 5	13:09:58	2399.98	19.98	5.98	601.51	4.97	14.90	0.14	59.80
Last 5	13:14:58	2699.98	20.06	5.98	601.94	4.40	14.90	0.14	59.34
Variance 0			-0.07	-0.00	0.02			-0.01	-0.37
Variance 1			0.02	-0.00	0.86			0.00	-0.34
Variance 2			0.08	-0.00	0.43			0.00	-0.46

Notes

ARGWC-21 sample time 1315

Grab Samples

Product Name: Low-Flow System

Date: 2020-06-24 10:02:17

Project Information:		Pump Information:	
Operator Name	Terrell Parker	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.170 in
Site Name	ARGWC-22	Tubing Length	30 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	369323		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	22.9 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-22	Final Pumping Rate	125 mL/min
Well diameter	2 in	Total System Volume	0.2339027 L
Well Total Depth	27.87 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.28 in
Depth to Water	13.51 ft	Total Volume Pumped	4.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	09:39:08	1200.02	20.04	5.90	1505.18	5.58	13.68	0.16	83.69
Last 5	09:44:08	1500.02	20.06	5.87	1509.91	3.15	13.68	0.16	82.64
Last 5	09:49:08	1800.02	19.83	5.85	1497.67	3.88	13.70	0.14	80.34
Last 5	09:54:08	2100.03	19.75	5.84	1498.71	2.67	13.70	0.13	80.17
Last 5	09:59:08	2400.03	19.79	5.82	1498.79	2.73	13.70	0.13	79.47
Variance 0			-0.22	-0.02	-12.25			-0.02	-2.30
Variance 1			-0.09	-0.01	1.05			-0.01	-0.17
Variance 2			0.04	-0.02	0.08			0.00	-0.70

Notes

Sample time: 10:05

Grab Samples

ARGWC-22

Groundwater

Product Name: Low-Flow System

Date: 2020-06-25 11:20:12

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Masterflex Peristaltic Pump
Company Name	Wood	Tubing Type	HDPE
Project Name	Plant Arkwright AP2 ASD	Tubing Diameter	0.17 in
Site Name	ARGWC-23	Tubing Length	28 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646770		
Turbidity Make/Model	Hatch 2100Q	Pump placement from TOC	23 ft

Well Information:		Pumping Information:	
Well ID	ARGWC-23	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2149758 L
Well Total Depth	28.08 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.2 in
Depth to Water	11.61 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	10:55:59	600.02	22.21	6.38	432.84	5.41	12.74	0.18	57.30
Last 5	11:00:59	900.00	22.03	6.37	434.46	3.56	12.83	0.15	52.60
Last 5	11:05:59	1200.01	22.29	6.37	435.17	2.26	12.82	0.17	49.21
Last 5	11:10:59	1500.00	22.17	6.37	434.84	2.34	12.82	0.16	47.02
Last 5	11:15:59	1800.00	22.17	6.37	433.63	2.03	12.82	0.15	45.16
Variance 0			0.26	-0.00	0.71			0.01	-3.39
Variance 1			-0.12	-0.00	-0.33			-0.01	-2.18
Variance 2			-0.01	0.00	-1.21			-0.01	-1.86

Notes

ARGWC-23 sample time 1118

Grab Samples

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-114167-1
Client Project/Site: CCR - Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
12/15/2020 6:57:15 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

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

Job ID: 180-114167-1

Job ID: 180-114167-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-114167-1

Comments
No additional comments.

Receipt
The sample was received on 12/1/2020 10:00 AM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1º C.

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.

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 Arkwright

Job ID: 180-114167-1

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
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-114167-1

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

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

Job ID: 180-114167-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-114167-1	ARAMW-7	Water	11/30/20 15:30	12/01/20 10:00	

Method Summary

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

Job ID: 180-114167-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

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 Arkwright

Job ID: 180-114167-1

Client Sample ID: ARAMW-7

Date Collected: 11/30/20 15:30
Date Received: 12/01/20 10:00

Lab Sample ID: 180-114167-1

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			338905	12/01/20 13:19	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total/NA	Analysis	EPA 300.0 R2.1		10			338905	12/01/20 13:40	SAT	TAL PIT
	Instrument ID: INTEGRION									
Dissolved	Prep	3005A			50 mL	50 mL	339223	12/02/20 14:15	TJO	TAL PIT
Dissolved	Analysis	EPA 6020B		1			339557	12/04/20 16:44	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	339223	12/02/20 14:15	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			339557	12/04/20 16:40	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	9030B			50 mL	50 mL	339220	12/02/20 13:30	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			339592	12/02/20 15:30	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339384	12/03/20 17:39	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			339186	12/02/20 10:39	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			340395	11/30/20 15:30	AGJ	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

CMR = Carl Reagle
TJO = Tyler Oliver

Batch Type: Analysis

AGJ = Andy Johnson
AVS = Abbey Smith
CMR = Carl Reagle
GRB = Gabriel Berghe
RSK = Robert Kurtz
SAT = Stephen Tallam

Client Sample Results

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

Job ID: 180-114167-1

Client Sample ID: ARAMW-7

Date Collected: 11/30/20 15:30
Date Received: 12/01/20 10:00

Lab Sample ID: 180-114167-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.3		1.0	0.32	mg/L			12/01/20 13:19	1
Fluoride	0.044	J	0.10	0.044	mg/L			12/01/20 13:19	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/01/20 13:19	1
Nitrite as N	<0.029		0.050	0.029	mg/L			12/01/20 13:19	1
Sulfate	990		10	3.8	mg/L			12/01/20 13:40	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.1		0.080	0.039	mg/L		12/02/20 14:15	12/04/20 16:40	1
Calcium	260		0.50	0.13	mg/L		12/02/20 14:15	12/04/20 16:40	1
Cobalt	0.028		0.0025	0.00013	mg/L		12/02/20 14:15	12/04/20 16:40	1
Lithium	0.061		0.0050	0.0034	mg/L		12/02/20 14:15	12/04/20 16:40	1
Magnesium	74		0.50	0.083	mg/L		12/02/20 14:15	12/04/20 16:40	1
Molybdenum	0.0012	J	0.015	0.00061	mg/L		12/02/20 14:15	12/04/20 16:40	1
Potassium	13		0.50	0.16	mg/L		12/02/20 14:15	12/04/20 16:40	1
Sodium	27	B	0.50	0.35	mg/L		12/02/20 14:15	12/04/20 16:40	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	17	B	0.050	0.020	mg/L		12/02/20 14:15	12/04/20 16:44	1
Manganese	11		0.0050	0.00087	mg/L		12/02/20 14:15	12/04/20 16:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/02/20 13:30	12/02/20 15:30	1
Total Dissolved Solids	1600		10	10	mg/L			12/03/20 17:39	1
Total Alkalinity as CaCO3 to pH 4.5	120		5.0	5.0	mg/L			12/02/20 10:39	1
Bicarbonate Alkalinity as CaCO3	120		5.0	5.0	mg/L			12/02/20 10:39	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/02/20 10:39	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.00				SU			11/30/20 15:30	1

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

Lab Sample ID: MB 180-338905/6
Matrix: Water
Analysis Batch: 338905

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			12/01/20 06:47	1
Fluoride	<0.044		0.10	0.044	mg/L			12/01/20 06:47	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/01/20 06:47	1
Nitrite as N	<0.029		0.050	0.029	mg/L			12/01/20 06:47	1
Sulfate	<0.38		1.0	0.38	mg/L			12/01/20 06:47	1

Lab Sample ID: LCS 180-338905/5
Matrix: Water
Analysis Batch: 338905

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.1		mg/L		102	90 - 110
Fluoride	2.50	2.31		mg/L		92	90 - 110
Nitrate as N	2.50	2.47		mg/L		99	90 - 110
Nitrite as N	2.50	2.71		mg/L		108	90 - 110
Sulfate	50.0	51.2		mg/L		102	90 - 110

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

Lab Sample ID: MB 180-339223/1-A
Matrix: Water
Analysis Batch: 339557

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 339223

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		12/02/20 14:15	12/04/20 12:08	1
Iron	0.0349	J	0.050	0.020	mg/L		12/02/20 14:15	12/04/20 12:08	1
Calcium	<0.13		0.50	0.13	mg/L		12/02/20 14:15	12/04/20 12:08	1
Manganese	<0.00087		0.0050	0.00087	mg/L		12/02/20 14:15	12/04/20 12:08	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		12/02/20 14:15	12/04/20 12:08	1
Lithium	<0.0034		0.0050	0.0034	mg/L		12/02/20 14:15	12/04/20 12:08	1
Magnesium	<0.083		0.50	0.083	mg/L		12/02/20 14:15	12/04/20 12:08	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		12/02/20 14:15	12/04/20 12:08	1
Potassium	<0.16		0.50	0.16	mg/L		12/02/20 14:15	12/04/20 12:08	1
Sodium	0.449	J	0.50	0.35	mg/L		12/02/20 14:15	12/04/20 12:08	1

Lab Sample ID: LCS 180-339223/2-A
Matrix: Water
Analysis Batch: 339557

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 339223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.04		mg/L		83	80 - 120
Iron	5.00	5.13		mg/L		103	80 - 120
Calcium	25.0	26.9		mg/L		108	80 - 120
Manganese	0.500	0.482		mg/L		96	80 - 120
Cobalt	0.500	0.498		mg/L		100	80 - 120
Lithium	0.500	0.489		mg/L		98	80 - 120
Magnesium	25.0	25.4		mg/L		102	80 - 120
Molybdenum	0.500	0.501		mg/L		100	80 - 120
Potassium	25.0	25.4		mg/L		101	80 - 120

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

Lab Sample ID: LCS 180-339223/2-A
Matrix: Water
Analysis Batch: 339557

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 339223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	25.0	24.9		mg/L		99	80 - 120

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-339220/1-A
Matrix: Water
Analysis Batch: 339592

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339220

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/02/20 13:30	12/02/20 15:21	1

Lab Sample ID: LCS 180-339220/2-A
Matrix: Water
Analysis Batch: 339592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339220

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	14.8	13.0		mg/L		88	85 - 115

Lab Sample ID: 180-114167-1 MS
Matrix: Water
Analysis Batch: 339592

Client Sample ID: ARAMW-7
Prep Type: Total/NA
Prep Batch: 339220

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	<2.1		14.8	11.1		mg/L		75	75 - 125

Lab Sample ID: 180-114167-1 MSD
Matrix: Water
Analysis Batch: 339592

Client Sample ID: ARAMW-7
Prep Type: Total/NA
Prep Batch: 339220

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	<2.1		14.8	11.5		mg/L		78	75 - 125	3	20

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

Lab Sample ID: MB 180-339384/2
Matrix: Water
Analysis Batch: 339384

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		10	10	mg/L			12/03/20 17:39	1

Lab Sample ID: LCS 180-339384/1
Matrix: Water
Analysis Batch: 339384

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	624	600		mg/L		96	80 - 120

QC Sample Results

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

Job ID: 180-114167-1

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-339186/5
Matrix: Water
Analysis Batch: 339186

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	<5.0		5.0	5.0	mg/L			12/02/20 08:37	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/02/20 08:37	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/02/20 08:37	1

Lab Sample ID: LCS 180-339186/4
Matrix: Water
Analysis Batch: 339186

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	232		mg/L		93	90 - 110

QC Association Summary

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

Job ID: 180-114167-1

HPLC/IC

Analysis Batch: 338905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	EPA 300.0 R2.1	
180-114167-1	ARAMW-7	Total/NA	Water	EPA 300.0 R2.1	
MB 180-338905/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-338905/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 339223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Dissolved	Water	3005A	
180-114167-1	ARAMW-7	Total Recoverable	Water	3005A	
MB 180-339223/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-339223/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 339557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Dissolved	Water	EPA 6020B	339223
180-114167-1	ARAMW-7	Total Recoverable	Water	EPA 6020B	339223
MB 180-339223/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	339223
LCS 180-339223/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	339223

General Chemistry

Analysis Batch: 339186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	SM2320 B	
MB 180-339186/5	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-339186/4	Lab Control Sample	Total/NA	Water	SM2320 B	

Prep Batch: 339220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	9030B	
MB 180-339220/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-339220/2-A	Lab Control Sample	Total/NA	Water	9030B	
180-114167-1 MS	ARAMW-7	Total/NA	Water	9030B	
180-114167-1 MSD	ARAMW-7	Total/NA	Water	9030B	

Analysis Batch: 339384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	SM 2540C	
MB 180-339384/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-339384/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 339592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	Total/NA	Water	EPA 9034	339220
MB 180-339220/1-A	Method Blank	Total/NA	Water	EPA 9034	339220
LCS 180-339220/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	339220
180-114167-1 MS	ARAMW-7	Total/NA	Water	EPA 9034	339220
180-114167-1 MSD	ARAMW-7	Total/NA	Water	EPA 9034	339220

QC Association Summary

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

Job ID: 180-114167-1

Field Service / Mobile Lab

Analysis Batch: 340395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114167-1	ARAMW-7	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

244- ATLANTA

Client Information	Sampler: Daniel Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #:
Address: 241 Ralph McGill Blvd SE	Due Date Requested: Standard TAT			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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)	300.0_RGFM_28D-Cl,F,SO4,NO2,NO3	2320B-Alk	2540C-TDS	9034-54H:de	6020B-Diss Fe/Mn	6020B-(B,Ca,Co,Li,Na,K	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	CB	D	D		
ARAMW-7	11/30/20	1530	G	W	Y		X	X	X	X	X	X	6	

180-114167 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
1	Daniel L Howard	11/30/20 / 1745	Wood		12/1/20 1000	Eurofins
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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-114167-1

Login Number: 114167
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	

Product Name: Low-Flow System

Date: 2020-11-30 15:32:07

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP 2	Tubing Diameter	.17 in
Site Name	ARAMW-7	Tubing Length	51 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	45.8 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-7	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.3176346 L
Well Total Depth	50.82 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	12.17 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	15:07:46	900.02	15.27	6.00	1778.79	5.66	12.44	0.21	-43.32
Last 5	15:12:46	1200.02	15.48	6.00	1780.04	5.87	12.44	0.20	-45.57
Last 5	15:17:46	1500.02	15.37	6.00	1763.81	5.03	12.44	0.19	-45.55
Last 5	15:22:47	1801.03	15.41	6.00	1770.99	4.51	12.44	0.18	-47.37
Last 5	15:27:47	2101.03	15.42	6.00	1768.80	4.61	12.44	0.18	-43.75
Variance 0			-0.11	0.00	-16.23			-0.01	0.01
Variance 1			0.04	0.00	7.17			-0.01	-1.82
Variance 2			0.01	0.00	-2.19			-0.00	3.62

Notes

ARAMW-7 sample time 1530.

Grab Samples

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 180-114253-1
Client Project/Site: CCR - Plant Arkwright

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
12/15/2020 7:03:37 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

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

Job ID: 180-114253-1

Job ID: 180-114253-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-114253-1

Comments
No additional comments.

Receipt
The sample was received on 12/2/2020 10:30 AM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.1º C.

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.

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 Arkwright

Job ID: 180-114253-1

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.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-114253-1

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

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

Job ID: 180-114253-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-114253-1	ARAMW-8	Water	12/01/20 10:05	12/02/20 10:30	

Method Summary

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

Job ID: 180-114253-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
Field Sampling	Field Sampling	EPA	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

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 Arkwright

Job ID: 180-114253-1

Client Sample ID: ARAMW-8

Date Collected: 12/01/20 10:05
Date Received: 12/02/20 10:30

Lab Sample ID: 180-114253-1

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			339255	12/03/20 12:34	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 300.0 R2.1		1			339100	12/02/20 23:10	SAT	TAL PIT
	Instrument ID: INTEGRION									
Dissolved	Prep	3005A			50 mL	50 mL	339431	12/04/20 07:38	KHM	TAL PIT
Dissolved	Analysis	EPA 6020B		1			339788	12/05/20 15:51	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	339431	12/04/20 07:38	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			339788	12/05/20 15:47	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	9030B			50 mL	50 mL	339874	12/08/20 12:30	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			340074	12/08/20 14:53	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	339351	12/03/20 11:40	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			339624	12/04/20 15:57	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	Field Sampling		1			340575	12/01/20 10:05	AGJ	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

CMR = Carl Reagle
KHM = Kyle Mucroski

Batch Type: Analysis

AGJ = Andy Johnson
AVS = Abbey Smith
CMR = Carl Reagle
GRB = Gabriel Berghe
RSK = Robert Kurtz
SAT = Stephen Tallam

Client Sample Results

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

Job ID: 180-114253-1

Client Sample ID: ARAMW-8

Date Collected: 12/01/20 10:05
Date Received: 12/02/20 10:30

Lab Sample ID: 180-114253-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		1.0	0.32	mg/L			12/02/20 23:10	1
Fluoride	0.14		0.10	0.044	mg/L			12/03/20 12:34	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/02/20 23:10	1
Nitrite as N	0.28		0.050	0.029	mg/L			12/02/20 23:10	1
Sulfate	120		1.0	0.38	mg/L			12/02/20 23:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.40		0.080	0.039	mg/L		12/04/20 07:38	12/05/20 15:47	1
Calcium	81		0.50	0.13	mg/L		12/04/20 07:38	12/05/20 15:47	1
Cobalt	0.0054		0.0025	0.00013	mg/L		12/04/20 07:38	12/05/20 15:47	1
Lithium	0.0044	J	0.0050	0.0034	mg/L		12/04/20 07:38	12/05/20 15:47	1
Magnesium	25		0.50	0.083	mg/L		12/04/20 07:38	12/05/20 15:47	1
Molybdenum	0.056		0.015	0.00061	mg/L		12/04/20 07:38	12/05/20 15:47	1
Potassium	7.0		0.50	0.16	mg/L		12/04/20 07:38	12/05/20 15:47	1
Sodium	22		0.50	0.35	mg/L		12/04/20 07:38	12/05/20 15:47	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.8		0.050	0.020	mg/L		12/04/20 07:38	12/05/20 15:51	1
Manganese	2.9		0.0050	0.00087	mg/L		12/04/20 07:38	12/05/20 15:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/08/20 12:30	12/08/20 14:53	1
Total Dissolved Solids	420		10	10	mg/L			12/03/20 11:40	1
Total Alkalinity as CaCO3 to pH 4.5	220		5.0	5.0	mg/L			12/04/20 15:57	1
Bicarbonate Alkalinity as CaCO3	220		5.0	5.0	mg/L			12/04/20 15:57	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/04/20 15:57	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.05				SU			12/01/20 10:05	1

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

Lab Sample ID: MB 180-339100/36
Matrix: Water
Analysis Batch: 339100

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			12/02/20 19:20	1
Nitrate as N	<0.023		0.10	0.023	mg/L			12/02/20 19:20	1
Nitrite as N	<0.029		0.050	0.029	mg/L			12/02/20 19:20	1
Sulfate	<0.38		1.0	0.38	mg/L			12/02/20 19:20	1

Lab Sample ID: LCS 180-339100/35
Matrix: Water
Analysis Batch: 339100

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Nitrate as N	2.50	2.40		mg/L		96	90 - 110
Nitrite as N	2.50	2.65		mg/L		106	90 - 110
Sulfate	50.0	50.1		mg/L		100	90 - 110

Lab Sample ID: MB 180-339255/6
Matrix: Water
Analysis Batch: 339255

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.044		0.10	0.044	mg/L			12/03/20 09:23	1

Lab Sample ID: LCS 180-339255/5
Matrix: Water
Analysis Batch: 339255

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.50	2.41		mg/L		96	90 - 110

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

Lab Sample ID: MB 180-339431/1-A
Matrix: Water
Analysis Batch: 339788

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 339431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		12/04/20 07:38	12/05/20 14:29	1
Iron	<0.020		0.050	0.020	mg/L		12/04/20 07:38	12/05/20 14:29	1
Calcium	<0.13		0.50	0.13	mg/L		12/04/20 07:38	12/05/20 14:29	1
Manganese	<0.00087		0.0050	0.00087	mg/L		12/04/20 07:38	12/05/20 14:29	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		12/04/20 07:38	12/05/20 14:29	1
Lithium	<0.0034		0.0050	0.0034	mg/L		12/04/20 07:38	12/05/20 14:29	1
Magnesium	<0.083		0.50	0.083	mg/L		12/04/20 07:38	12/05/20 14:29	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		12/04/20 07:38	12/05/20 14:29	1
Potassium	<0.16		0.50	0.16	mg/L		12/04/20 07:38	12/05/20 14:29	1
Sodium	<0.35		0.50	0.35	mg/L		12/04/20 07:38	12/05/20 14:29	1

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

Lab Sample ID: LCS 180-339431/2-A
Matrix: Water
Analysis Batch: 339788

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 339431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.15		mg/L		92	80 - 120
Iron	5.00	4.99		mg/L		100	80 - 120
Calcium	25.0	28.9		mg/L		116	80 - 120
Manganese	0.500	0.499		mg/L		100	80 - 120
Cobalt	0.500	0.465		mg/L		93	80 - 120
Lithium	0.500	0.490		mg/L		98	80 - 120
Magnesium	25.0	24.6		mg/L		98	80 - 120
Molybdenum	0.500	0.493		mg/L		99	80 - 120
Potassium	25.0	24.3		mg/L		97	80 - 120
Sodium	25.0	25.3		mg/L		101	80 - 120

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-339874/1-A
Matrix: Water
Analysis Batch: 340074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339874

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.1		3.0	2.1	mg/L		12/08/20 12:30	12/08/20 14:14	1

Lab Sample ID: LCS 180-339874/2-A
Matrix: Water
Analysis Batch: 340074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339874

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	14.6	12.9		mg/L		88	85 - 115

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

Lab Sample ID: MB 180-339351/2
Matrix: Water
Analysis Batch: 339351

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		10	10	mg/L			12/03/20 11:40	1

Lab Sample ID: LCS 180-339351/1
Matrix: Water
Analysis Batch: 339351

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	624	618		mg/L		99	80 - 120

QC Sample Results

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

Job ID: 180-114253-1

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-339624/29
Matrix: Water
Analysis Batch: 339624

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	<5.0		5.0	5.0	mg/L			12/04/20 14:34	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/04/20 14:34	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			12/04/20 14:34	1

Lab Sample ID: LCS 180-339624/28
Matrix: Water
Analysis Batch: 339624

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	228		mg/L		91	90 - 110		

QC Association Summary

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

Job ID: 180-114253-1

HPLC/IC

Analysis Batch: 339100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-339100/36	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-339100/35	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 339255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-339255/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-339255/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 339431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Dissolved	Water	3005A	
180-114253-1	ARAMW-8	Total Recoverable	Water	3005A	
MB 180-339431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-339431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 339788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Dissolved	Water	EPA 6020B	339431
180-114253-1	ARAMW-8	Total Recoverable	Water	EPA 6020B	339431
MB 180-339431/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	339431
LCS 180-339431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	339431

General Chemistry

Analysis Batch: 339351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	SM 2540C	
MB 180-339351/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-339351/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 339624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	SM2320 B	
MB 180-339624/29	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-339624/28	Lab Control Sample	Total/NA	Water	SM2320 B	

Prep Batch: 339874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	9030B	
MB 180-339874/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-339874/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 340074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-8	Total/NA	Water	EPA 9034	339874
MB 180-339874/1-A	Method Blank	Total/NA	Water	EPA 9034	339874
LCS 180-339874/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	339874

QC Association Summary

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

Job ID: 180-114253-1

Field Service / Mobile Lab

Analysis Batch: 340575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-114253-1	ARAMW-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

244- ATLANTA

Client Information	Sampler: Daniel Howard	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone:	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power				Job #
Address: 241 Ralph McGill Blvd SE	Due Date Requested: Standard TAT			
City: Atlanta	TAT Requested (days):			
State, Zip: GA, 30308				
Phone: 404-506-7116(Tel)	PO #:			
Email: SCS Contacts	WO #:			
Project Name: CCR - Plant Arkwright	Project #: 18020201			
Site: Georgia	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	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)	Metals (B, Ca, Co, Li, Na, K) 6020B	Dissolved metals (Fe/Mn) 6020B	NO2/NO3, Cl, F, SO4 300.0 28D GRCFM	Alk 2320B	TDS 2540C	Sulfide 9034	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	N	B,C		
ARAMW-8	12/1/20	1005	G	W	Y		X	X	X	X	X	X	5	pH = 7.05

180-114253 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
Daniel K Howard	12/1/20 1720	Wood		12/2/20 1020	
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:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-114253-1

Login Number: 114253
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	

Product Name: Low-Flow System

Date: 2020-12-01 10:08:02

Project Information:		Pump Information:	
Operator Name	Daniel Howard	Pump Model/Type	Peristaltic
Company Name	Wood E&IS	Tubing Type	HDPE
Project Name	Plant Arkwright CCR AP 2	Tubing Diameter	.17 in
Site Name	ARAMW-8	Tubing Length	49.6 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	44.6 ft

Well Information:		Pumping Information:	
Well ID	ARAMW-8	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.3113858 L
Well Total Depth	49.61 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.31 in
Depth to Water	10.92 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	09:42:36	900.03	11.20	7.00	718.40	3.24	12.30	0.40	-97.29
Last 5	09:47:36	1200.03	11.14	7.03	701.59	3.50	12.49	0.40	-92.28
Last 5	09:52:36	1500.03	11.11	7.04	718.46	3.85	12.65	0.37	-93.05
Last 5	09:57:36	1800.03	11.06	7.04	717.49	3.50	12.83	0.36	-95.66
Last 5	10:02:36	2100.03	11.63	7.05	709.33	3.53	12.96	0.48	-87.72
Variance 0			-0.04	0.01	16.87			-0.03	-0.77
Variance 1			-0.05	0.01	-0.97			-0.01	-2.60
Variance 2			0.57	0.01	-8.16			0.12	7.94

Notes

ARAMW-8 sample time 1005

Grab Samples

Date: 11/30/20
Time: 1240
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: _____
Pine Handset ID: 512733
Battery Voltage %: 85

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes_____ No ✓ Date:_____ Time:_____	
Current Air Temperature °C (meter reading):		10.5
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	750.0
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		9.97
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	90.6
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.1057

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot# 19410200	1.413
Temperature (°C)		14.4
Reading before Calibration (mS/cm)		1.434
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		0.9855

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 8/21	7.13
pH **7.0** value after calibration:	17.0	7.02
pH **7.0** mV **(range is -50 to +50 mV)**:		-7.7
pH 10 value before calibration:	Lot 19320102 8/21	9.91
pH 10 value after calibration:	15.9	10.08
pH 10 mV **(range is -130 to -230 mV)**:		-177.4
pH **4.0** value before calibration:	Lot 20010025 8/21	4.35
pH **4.0** value after calibration:	14.7	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		162.5

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 8/21	14.5
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	243
Reading before calibration (mV):		241.6
Reading after calibration (mV):		243.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY Note: Lens wiper should be parked 180 degrees from the optics.			
20 NTU Turbidity Standard	Before Cal:	After Cal:	19.8
100 NTU Turbidity Standard	Before Cal:	After Cal:	102
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	805
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.55
_____ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Hach 2100Q ID: S/N 150300039370

Date: 12/1/20
Time: 0535
Prepared By: Daniel Howard
Checked By: _____

Wood.
Project No. 6122201429

Pine Sonde ID: _____
Pine Handset ID: 5/2733
Battery Voltage %: 85

CALIBRATION PRIOR TO SAMPLING

DISSOLVED OXYGEN (DO)		**VALUE**
Was DO membrane changed?	Yes ____ No ✓ Date: ____ Time: ____	
Current Air Temperature °C (meter reading):		23.6
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration:	Ex.: 30.02 in. Hg x 25.4 = mm Hg; **subtract** 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg	754.0
Theoretical DO (mg/L) from DO table based on current temperature and elevation corrected pressure:		
DO concentration before Calibration (mg/L):	Depending on meter version, this may not be available.	
DO concentration after Calibration (mg/L):		7.78
% Recovery (actual/theory x 100)	Range is 90 to 110% Recovery	92.5
DO Charge (DO ch):	Acceptable Range is 25 to 75	—
DO Gain (should be between -0.7 and 1.5):	Exit Calibration menu and go to Advanced/Cal Constants	1.0819

Note:

CONDUCTIVITY [Note: Calibrate before pH to avoid carry-over from pH standards (i.e. pH buffers are conductive)]		
Calibration standard used (mS/cm)	Lot # 19410200	1.413
Temperature (°C)		23.2
Reading before Calibration (mS/cm)		1.380
Reading AFTER Calibration (mS/cm)		1.413
Conductivity Cell Constant (unitless):		1.0239

Note: Be sure conductivity cell is submerged and free of bubbles (gently tap sonde on table)

pH		
pH **7.0** value before calibration:	Lot 19340057 8/21	7.14
pH **7.0** value after calibration:	22.7°C	7.00
pH **7.0** mV **(range is -50 to +50 mV)**:		-8.5
pH 10 value before calibration:	Lot 19320102 8/21	10.05
pH 10 value after calibration:	21.9°C	10.04
pH 10 mV **(range is -130 to -230 mV)**:		-182.2
pH **4.0** value before calibration:	Lot 20010025 8/21	4.23
pH **4.0** value after calibration:	22.1°C	4.00
pH **4.0** mV **(range is 130 to 230 mV)**:		165.3

Note: Span between ph 4 and 7, and 7 and 10 should be between 165 to 180 mV

OXIDATION/REDUCTION POTENTIAL (ORP)		
Calibration Temperature (°C):	Lot 19460167 8/21	22.3
Theoretical Calibration standard (mV)	0.231+0.0013(25-T) x 1000 = mV (T is Temperature °C)	233
Reading before calibration (mV):		227.3
Reading after calibration (mV):		233.0

Note: mV theory will change with temperature, so calculate based on your current temp.

TURBIDITY **Note: Lens wiper should be parked 180 degrees from the optics.**			
20 NTU Turbidity Standard	Before Cal:	After Cal:	20.1
100 NTU Turbidity Standard	Before Cal:	After Cal:	102
800 NTU Turbidity Standard Lot A8155	Before Cal:	After Cal:	798
10 NTU Turbidity Check STD	Before Cal:	After Cal:	9.70
____ NTU Turbidity Check STD	Before Cal:	After Cal:	
CALIBRATION SUCCESSFUL?			

Hach 2100 Q IO : S/N 15030C039370

Georgia Power Site Sampling Data (GW)

Site Name: Plant Arkwright — AP2 + AP3 — Date: 11/30/20 - 12/1/20

Well ID	Sample Date	Sample Time	Field Blank	Equipment Blank	Field Dup.	Additional Comments
ARAMW-7	11/30/20	1530				
ARAMW-8	12/1/20	1005				
FB-01	12/1/20	1140	FB-01			Field Blank For Ash Ponds 2+3
EB-01	12/1/20	1155		EB-01		Equip Blank of tubing used with peristaltic pump
ARGWA-24	12/1/20	1352				
DUP-1	12/1/20	—			ARGWA-24	Duplicate of ARGWA-24 (DUP-1)

Additional comments: Equip. Blank EB-01 was collected From the HDPE tubing used with the peristaltic pump. Tubing Lot #12759-05. Deionized water used ASTM Type I water meeting ASTM D5196 specification. Field Blank FB-01 was taken using ASTM Type I deionized water meeting ASTM D5196 specification.

Data Evaluation Narrative
Project: Plant Arkwright AP2 Background and Delineation Sampling
Wood Project Number: 6122201429.2003.**
Site: Ash Pond No. 2 Dry Ash Stockpile – Former Plant Arkwright, Georgia
Matrix: Groundwater

Eurofins TestAmerica SDG Nos: 180-114167-1, 180-114253-1

Introduction

A data quality evaluation (DQE) was performed on the laboratory data reported for the Background and Delineation sampling event conducted at Ash Pond No. 2 Dry Ash Stockpile at the former Plant Arkwright, located in Arkwright, Georgia in November and December 2020 for Southern Company Services (SCS). The samples were collected and analyzed per the protocols presented in the *Draft Former Plant Arkwright Field Sampling Plan* (FSP) (SCS, 2016) and in accordance with the monitoring requirements of §§ 257.90 through 257.95 as referenced in the Georgia Environmental Protection Division (EPD) Rules 391-3-4-.10(6)(a)-(c) and 391-3-4-.14. GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257 Subpart D.

The following sections provide summary discussions of the required data qualifications for the analytical methods for samples collected. A Level II DQE validation was performed on the samples analyzed by the fixed-based laboratory within these sample delivery groups (SDGs). A Level II DQE consists of review of the following criteria: sample integrity, holding times, method blanks, laboratory control samples (LCSs), matrix spikes/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), post digestion spikes (PDS), where applicable, laboratory and field duplicate RPDs, field and/or equipment blanks, and reporting limits (RLs). Additionally, the data summary tables generated from the electronic data deliverable (EDD) were compared to the laboratory hardcopy data report to verify that the EDD and laboratory data report agree.

The data were reviewed using the laboratory's precision and accuracy limits, the method requirements, and the SCS Field Sampling Plan (FSP) (SCS, 2016). DQE data qualifications were applied, if necessary, using the procedures in United States Environmental Protection Agency (USEPA) Region IV *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy* (USEPA, 2011) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, 2017), as guidance, and professional judgment using the following qualifiers:

Qualifier	Usable Data
J	The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. *SCS Definition: Value J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce as reliable of a value. Therefore, the value displayed (value J) is qualified by the laboratory as estimated.*
UJ	The analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit (MDL) is approximate and may be inaccurate or imprecise.

Qualifier	Usable Data (continued)
U	Analyte was analyzed for but was not detected above the level of the reported sample reporting/method detection limit. *Note: SCS does not use the "U" flag except when reporting results for radium that are detected below the Minimum Detection Concentration (MDC).*
U*	This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

Qualifier	Unusable Data
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control (QC) criteria. The presence or absence of the analyte cannot be confirmed.
UR	The analyte was analyzed for but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

The analytical results for the samples reported in this SDG are usable with the qualifications discussed in this narrative. A summary of the data with associated qualifiers is presented in **Table 1**.

Deliverables

The data package as submitted to Wood Environment & Infrastructure Solutions, Inc. (Wood) is complete to perform a Level II DQE for USEPA Methods SW6020B, EPA 300.0, SM 2320B, SW9034 and SM2540C.

Sample Integrity

The groundwater samples were submitted to Eurofins TestAmerica in Pittsburgh, Pennsylvania (TAL PIT) and analyzed for specific total and/or dissolved metals (including Appendix III and select Appendix IV) by Method SW6020B, anions (chloride, fluoride, nitrate, nitrite, and sulfate) by Method 300.0 R2.1, alkalinity (total, bicarbonate and carbonate as $CaCO_3$) by Method SM 2320B, sulfide by SW9034 and total dissolved solids by SM2540C.

Based on the information provided on the Chain-of-Custody (COC) forms, the field samples arrived at the laboratory intact, within temperature range, and properly preserved. Completed COC documents are included in the data package.

Sample Identification

This SDG contains the following groundwater and/or QC samples:

Sample ID	Sample Date	DQE Level
ARAMW-7	11/30/20	II
ARAMW-8	12/01/20	II

These samples were collected from the newly installed Ash Pond No. 2 monitoring wells listed above on November 30 and December 1, 2020. The field and equipment blanks associated with this event include FB-01-120120 and EB-01-062420 (reported in SDG 180-114251-1).

Metals (SW6020B)

The samples were submitted to TAL PIT for total CCR Appendix III metals, select total Appendix IV metals, and total or dissolved geochemical metals by Methods SW6020B. The CCR Appendix III metals are: boron (B) and calcium (Ca). The geochemical metals are: total magnesium (Mg), potassium (K), and sodium (Na), and dissolved iron (Fe) and manganese (Mn). The select Appendix IV metals are: cobalt (Co), and lithium (Li). Each of the Level II components were within QC limits except for method, field blank contamination.

Holding Times

The sample analyses were performed within the 6-month analysis holding time.

Method Blanks

One of the method blanks in SDG 180-114167-1 contained iron and sodium between the MDL and the RL, and associated results less than 10 times the method blank are considered "not detected" as a possible laboratory artifact.

> *Action: No qualification was necessary because the associated iron and sodium results were greater than 10 times the blank value.*

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

An MS/MSD analysis was not performed on any sample in this SDG.

Post Digestion Spike (PDS)

A PDS analysis was not available for review.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

Field accuracy was measured through the collection of one equipment/rinsate blank and one field blank. Equipment rinsate blanks are collected to monitor the decontamination process on non-dedicated sampling equipment. Field blanks are collected to assess the water used to decontaminate the equipment and the containers into which samples are placed. One field blank (FB-01-120120) and one equipment blank (EB-01-120120) are associated with this sampling event. The field blank sample was reported with detections of boron and thallium at estimated concentrations between the MDL and RL. Results less than 10 times the field blank are considered "not detected" as a possible field artifact. **Reason Code: BF:**

> *Action: The boron result for sample ARAMW-8 was qualified as not detected and flagged "U*". Thallium was not analyzed for the samples in this SDG.*

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of metals by USEPA Method SW6020B. The laboratory RL was elevated where dilutions were required to place the constituent within the calibration range. None of the samples in this SDG required dilution.

Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

Total and Dissolved Metals Comparison

If total and dissolved metals samples were collected, comparison of the total and dissolved results can aid in the representativeness of the total metals value verses the metals that may be associated with suspended solids and metals actually dissolved within the water column. The dissolved metals results should be less than or equal to the total metals concentration for positive results greater than 5 times the RL. *Although dissolved iron and manganese were collected and analyzed, total analyses were not scoped; therefore, no comparison was performed*.

Anions (EPA 300.0 R2.1)

The samples were submitted to TAL PIT for anions (chloride, fluoride, nitrate, nitrite, and sulfate) by Method 300.0 R2.1. Each of the Level II components were within the QC limits.

Holding Times

The sample analyses were performed within the 48-hour and 28 day holding times.

Method Blanks

The method blank associated with the samples analyzed in this SDG contained no reportable detections of anions.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

An MS/MSD analysis was not performed on any sample in this SDG.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The field blanks and equipment blank samples did not contain reportable detections of anions.

Reporting Limits

The laboratory RLs met the SCS project RLs and were below the screening values for samples submitted for the analysis of anions by USEPA Method 300 R2.1. No sample dilutions were required. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated and flagged "J" by the laboratory. The "J" qualifier is maintained by the data validator.

Alkalinity (SM 2320B)

Samples were submitted to TAL PIT for alkalinity (total, carbonate, and bicarbonate) by Method SM 2320B to help determine aquifer characteristics. Each of the Level II components were within laboratory QC limits.

Holding Times

The sample analyses were performed within the 14-day analysis holding time.

Method Blanks

The laboratory method blanks did not contain reportable concentrations of alkalinity.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The field blanks and equipment blank samples did not contain reportable detections of alkalinity.

Reporting Limits

The laboratory RLs met the SCS project RLs for samples submitted for the analysis of alkalinity by Method SM 2230B. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated; however, no alkalinity results were reported between the MDL and RL in this SDG.

Sulfide (SW9034)

Samples were submitted to TAL PIT for sulfide by Method SW9034 to help determine aquifer characteristics. Each of the Level II components were within laboratory QC limits.

Holding Times

The sample analyses were performed within the 7-day analysis holding time.

Method Blanks

The laboratory method blanks did not contain reportable concentrations of sulfide.

Laboratory Control Sample (LCS)

Percent recoveries for target analytes were within quality control limits in the LCS.

Field Duplicate Precision

No field duplicates were collected at Ash Pond No. 2.

Sampling Accuracy (Equipment Rinsate Blanks, Field Blanks)

The field blanks and equipment blank samples did not contain reportable detections of sulfide.

Reporting Limits

The laboratory RLs were met for samples submitted for the analysis of sulfide by Method SW9034 and no samples required dilutions. Additionally, data are evaluated down to the MDL and results reported between the MDL and RL are considered quantitative estimates. Results reported between the MDL and RL were qualified as estimated; however, no sulfide results were reported between the MDL and RL in this SDG.

Overall Site Evaluation and Professional Judgment Flagging Changes

The chemical data included in this SDG was validated in general accordance with the guidelines contained in the project work plan and validation SOPs. No professional judgment was used to modify flags for results reported in samples presented in this SDG.

Completeness

A total of 2 wells in Ash Pond No. 2, along with the required QC samples, were sampled and analyzed during the November and December 2020 event in Ash Pond No. 2 according to the Scope of Work provided for the background and delineation sampling. Of the 2 wells scoped to be sampled, one well was reported in two separate SDGs and were sampled and analyzed as scoped.

Completeness of the field sampling activities were assessed in terms of the actual number and type of sample results received from the field and laboratory, as compared with the planned number and type of sample results. All samples planned were collected which meets a field completeness of 100%.

Analytical completeness of data is a measure of the number of valid project-specific data results obtained in comparison to the total number of data results projected to achieve project DQOs. Valid data are defined as data that meet the project-specific DQOs. No data were qualified as unusable which equals a completeness of 100%, which exceeds the 90 percent goal for field and laboratory data expected for this project.

References

SCS, 2016, Draft Field Sampling Plan – Former Plant Arkwright, Georgia Power Company, Earth Science and Environmental Engineering Technical Services, Southern Company Services, Inc. (SCS), August 17, 2016. Permit modification to include the Appendix III and IV sampling requirements; approval of modified permit and FSP pending.

USEPA, 2011. Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy, Revision 2.0; September 2011.

USEPA, 2017. National Office of Superfund Remediation and Technology Innovation, National Functional Guidelines for Inorganic Superfund Methods Data Review, Revision 0.0; January 2017.

Prepared by/Date: DLH 01/14/21
Checked by/Date: DWK 01/27/21

TABLE 1
SUMMARY OF DATA QUALIFIERS

TABLE 1
SUMMARY OF DATA QUALIFIERS
SAMPLE DELIVERY GROUPS: 180-114167-1 and 180-114253-1
SAMPLING DATES: November 30 - December 1, 2020
Plant Arkwright Ash Pond No. 2 Background and Delineation Sampling

Field Sample ID	Location ID	Type	SDG	Method	Parameter Name	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
ARAMW-7	ARAMW-7	N	180-114167-1	300.0	fluoride	0.044	J	J	--	mg/L
ARAMW-7	ARAMW-7	N	180-114167-1	6020B	molybdenum	0.0012	J	J	--	mg/L
ARAMW-8	ARAMW-8	N	180-114253-1	6020B	boron	0.4		U*	BF	mg/L
ARAMW-8	ARAMW-8	N	180-114253-1	6020B	lithium	0.0044	J	J	--	mg/L

Notes:

Laboratory Qualifiers:

J= Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Reason Codes:

BF = Field blank contamination. The result should be considered "not-detected".

-- = No Reason Code assigned for values detected between the method detection limit (MDL) and the reporting limit (RL);estimated quantitation.

Validation Qualifiers:

J = The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U* = This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

Prepared by/Date: DLH 01/15/21
Checked by/Date: DWK 01/27/21

DQE CHECKLISTS

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Metals by SW6020B
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21
Anal for: B, Ca, Co, Li, Mg, Mo, K, Na, diss. Fe, and diss Mn

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (HNO_3 to pH<2)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (180 days)** Coll: 11/30/20, SDG 180-114167-1 Prep: Total and Diss. metals – 12/02/20 Anal: Total and Diss. metals – 12/04/20 Coll: 12/01/20, SDG 180-114253-1 Prep: Total and Diss. metals – 12/04/20 Anal: Total and Diss. metals – 12/05/20	
	X		**QC Blanks Review** Method Blanks: SDG 180-114167-1 p. 10 MB 180-339223/1-A = Fe – 0.0349 J x 10 = **0.349**, Na – 0.449 J x 10 =**4.49 mg/L** ***Flag results <10x blank "U":*** *No flag, assoc. result >10x* SDG 180-114253-1 p. 10 MB 180-339431/1-A = All ND Field Blanks: SDG: 180-114251-1 FB-01: B= 0.044 J x 10 = **0.44 mg/L**, Tl= 0.00019 J x 10 = **0.0019 mg/L** ***Flag results <10x blank "U": B - ARAMW-8*** *(Tl not anal for in assoc. samples)* Equipment Blank: SDG: 180-114251-1 EB-01 = All ND	
X			**Laboratory Control Sample (LCS) recovery within limits (Metals 80-120%, Hg = 80-120%)** SDG 180-114167-1 p. 10 LCS 180-339223/2-A = All OK SDG 180-114253-1 p. 11 LCS 180-339431/2-A = All OK	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	

Method: Metals by SW6020B (cont)

YES	NO	NA	COMMENTS
		X	**Matrix Spike recoveries and RPDs within limits (75-125%, RPD 20)** No MS/MSDs in this SDG for metals
		X	**Total metals vs dissolved metals within limits (RPD < 20% or diff. < RL)** *Although dissolved iron and manganese were collected and analyzed, total analyses were not scoped; therefore, no total results were available for comparison.*
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Anions (chloride, fluoride, nitrate, nitrite, and sulfate) by E300.0 R2.1
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (NO_2, NO_3 – 48 hrs; Cl, SO_4, F – 28 days)** Coll: 11/30/20 (SDG 180-114167-1) Anal: Cl, F NO_2, NO_3, SO_4: 12/02/20 (SDG 180-114167-1) Coll: 12/01/20 (SDG 180-114253-1) Anal: Cl, NO_2, NO_3, SO_4: 12/01/20 (SDG 180-114253-1) Anal: F: 12/03/20	
X			**QC Blanks Review** Method Blanks: p. 10 MB 180-338905/6 = All ND (SDG 114167-1) p. 10 MB 180-339100/36, All ND = ND, MB 180-339255/6, F =ND Field Blanks: SDG 180-114251-1 FB-01 = ND Equipment Blank: SDG 180-114251-1 EB-01 = ND	
X			**Laboratory Control Sample (LCS) recovery within limits (90-110%)** p. 10 LCS 180-338905/5 = All %rec OK (SDG 180-114167-1) p. 10 LCS 180-339100/5 = All %rec OK, LCS 180-339255/5, F =96% -OK	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
		X	**Matrix Spike recoveries and RPDs within limits (lab %Rec limits, RPD = 20)** No MS/MSDs were analyzed in this SDG	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Total, Bicarbonate and Carbonate Alkalinity by SM 2320B
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (14 days)** Coll: 11/30/20 (SDG 180-114167-1) Anal: 12/02/20 (SDG 180-114167-1) Coll: 12/01/20 (SDG 180-114253-1) Anal: 12/04/20 (SDG 180-114253-1)	
X			**QC Blanks Review** Method Blanks p. 12 MB 180-339186/5 = ND (SDG 180-114167-1) p. 12 MB 180-339624/29 = ND (SDG 180-114253-1) Field Blanks: SDG 180-114251-1 FB-01 = ND Equipment Blank: SDG 180-114251-1 EB-01= ND	
X			**Laboratory Control Sample (LCS) recovery within lab limits (80-120%)** p. 12 LCS 180-339186/4= 93% - OK (SDG 180-114251-1) p. 17 LCS 180-339624/4 = 91% - OK (SDG 180-114253-1)	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
		X	**Matrix Spike recoveries and RPDs within limits (if applicable)** MS/MSD not applicable for alkalinity	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Sulfide by SW9034
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (7 days)** Coll: 11/30/20 (SDG180-114167-1) Prep: 12/02/20 Anal: 12/02/20 Coll: 12/01/20 (SDG180-114253-1) Prep: 12/08/20 Anal: 12/08/20	
X			**QC Blanks Review** Method Blanks p. 17 MB 180-320115/1-A= ND p. 11 MB 180339874/1-A= ND (SDG 180-114253-1) Field Blanks: SDG 180114251-1 FB-01: ND Equipment Blank: SDG 180-114251-1 EB-01: ND	
X			**Laboratory Control Sample (LCS) recovery within lab limits (80-120%)** p. 17 LCS 180-320115/2-A = 89% - OK p. 11 LCS 180-339874/2-A = 88% - OK (SDG 180-114253-1)	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
X			**Matrix Spike recoveries and RPDs within limits (if applicable)** 180-114167-1 MS/MSD =75/78, RPD = 3 – OK (SDG 180-114167-1) No MS/MSDs were analyzed in SDG 180-114253-1	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

LEVEL II DATA QUALITY VALIDATION RECORD

Project: Plant Arkwright Background and Delineation
Project No: 6122201429.2003.****
Method: Total Dissolved Solids (TDS) by SM2540C
Laboratory and Lot: TAL PIT SDGs: 180-114167-1, 180-114253-1
Reviewer/Date: D. Howard 01/14/21 **Senior Reviewer/Date:** D. Knaub 01/27/21

YES	NO	NA		COMMENTS
X			**Case Narrative and COC Completeness Review** OK	
X			**Sample Preservation and cooler temperature met (Cool to 6ºC)** Ok, Temp = 2.1°C, SDG 180-114167-1 Ok, Temp = 4.1°C, SDG 180-114253-1	
X			**Holding times met (7 days)** Coll: 11/30/20, SDG 180-114167-1 Anal: 12/03/20 Coll: 12/01/20, SDG 180-114253-1 Anal: 12/03/20	
X			**QC Blanks Review** Method Blanks p. 11 MB 180-339384/2 = ND (SDG 180-114167-1) p. 11 MB 180-339351/2 = ND (SDG 180-114167-1) Field and equipment blank were not analyzed for TDS	
X			**Laboratory Control Sample (LCS) recovery within lab limits (80-120%)** p. 11 LCS 180-339384/1 = 96% - OK (SDG 180-114167-1) p. 11 LCS 180-339351/1 = 99% - OK (SDG 180-114253-1)	
		X	**Lab Duplicate - Field Duplicate precision goals met (20%)** No lab or field duplicate in this SDG	
		X	**Matrix Spike recoveries and RPDs within limits (if applicable)** MS/MSD not applicable to TDS	
X			**EDD Data Verification vs. Hardcopy (10% samples for each SDG)** 100% of results were checked	

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ANALYTICAL REPORT

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

Laboratory Job ID: 180-113158-1
Client Project/Site: CCR - Arkwright Surfacewater

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
11/18/2020 9:17:33 AM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Job ID: 180-113158-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-113158-1

Comments
No additional comments.

Receipt
The samples were received on 11/4/2020 9:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

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 - Arkwright Surfacewater

Job ID: 180-113158-1

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.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-113158-1
Project/Site: CCR - Arkwright Surfacewater

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	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-113158-1	BC-0.8	Water	11/03/20 12:38	11/04/20 09:00	
180-113158-2	BC-0.5.5	Water	11/03/20 11:24	11/04/20 09:00	
180-113158-3	BC-BR	Water	11/03/20 11:49	11/04/20 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9040C	pH	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:

EPA = US Environmental Protection Agency

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 - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-0.8

Date Collected: 11/03/20 12:38
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-1

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			336722	11/11/20 18:17	MJH	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	336278	11/07/20 08:11	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			337118	11/13/20 20:09	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			336783	11/11/20 23:38	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336451	11/09/20 17:15	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			336113	11/05/20 18:39	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.5.5

Date Collected: 11/03/20 11:24
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-2

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			336638	11/11/20 13:41	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336278	11/07/20 08:11	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			337118	11/13/20 20:18	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			336799	11/11/20 19:53	PMH	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336451	11/09/20 17:15	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			336113	11/05/20 18:45	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-BR

Date Collected: 11/03/20 11:49
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-3

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			336638	11/11/20 13:58	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336278	11/07/20 08:11	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			337118	11/13/20 20:21	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			336799	11/11/20 22:00	PMH	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336451	11/09/20 17:15	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			336113	11/05/20 18:50	AVS	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

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

KHM = Kyle Mucroski

Batch Type: Analysis

AVS = Abbey Smith
GRB = Gabriel Berghe
MJH = Matthew Hartman
PMH = Paloma Hoelzle
RSK = Robert Kurtz
SAT = Stephen Tallam

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-0.8

Date Collected: 11/03/20 12:38
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.5		1.0	0.32	mg/L			11/11/20 18:17	1
Fluoride	0.066	J	0.10	0.044	mg/L			11/11/20 18:17	1
Sulfate	3.8		1.0	0.38	mg/L			11/11/20 18:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00042	J	0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 20:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/11/20 23:38	1
Total Dissolved Solids	84		10	10	mg/L			11/09/20 17:15	1
Total Alkalinity as CaCO3 to pH 4.5	55		5.0	5.0	mg/L			11/05/20 18:39	1
Bicarbonate Alkalinity as CaCO3	55		5.0	5.0	mg/L			11/05/20 18:39	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-0.5.5

Date Collected: 11/03/20 11:24
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.2		1.0	0.32	mg/L			11/11/20 13:41	1
Fluoride	0.050	J	0.10	0.044	mg/L			11/11/20 13:41	1
Sulfate	6.1		1.0	0.38	mg/L			11/11/20 13:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00047	J	0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 20:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			11/11/20 19:53	1
Total Dissolved Solids	88		10	10	mg/L			11/09/20 17:15	1
Total Alkalinity as CaCO3 to pH 4.5	55		5.0	5.0	mg/L			11/05/20 18:45	1
Bicarbonate Alkalinity as CaCO3	55		5.0	5.0	mg/L			11/05/20 18:45	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-113158-1

Client Sample ID: BC-BR

Date Collected: 11/03/20 11:49
Date Received: 11/04/20 09:00

Lab Sample ID: 180-113158-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.3		1.0	0.32	mg/L			11/11/20 13:58	1
Fluoride	<0.044		0.10	0.044	mg/L			11/11/20 13:58	1
Sulfate	6.2		1.0	0.38	mg/L			11/11/20 13:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00048	J	0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			11/11/20 22:00	1
Total Dissolved Solids	85		10	10	mg/L			11/09/20 17:15	1
Total Alkalinity as CaCO3 to pH 4.5	55		5.0	5.0	mg/L			11/05/20 18:50	1
Bicarbonate Alkalinity as CaCO3	55		5.0	5.0	mg/L			11/05/20 18:50	1

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

Lab Sample ID: MB 180-336638/6
Matrix: Water
Analysis Batch: 336638

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/11/20 05:54	1
Fluoride	<0.044		0.10	0.044	mg/L			11/11/20 05:54	1
Sulfate	<0.38		1.0	0.38	mg/L			11/11/20 05:54	1

Lab Sample ID: LCS 180-336638/5
Matrix: Water
Analysis Batch: 336638

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.9		mg/L		102	90 - 110
Fluoride	2.50	2.49		mg/L		99	90 - 110
Sulfate	50.0	50.0		mg/L		100	90 - 110

Lab Sample ID: MB 180-336722/6
Matrix: Water
Analysis Batch: 336722

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/11/20 12:23	1
Fluoride	<0.044		0.10	0.044	mg/L			11/11/20 12:23	1
Sulfate	<0.38		1.0	0.38	mg/L			11/11/20 12:23	1

Lab Sample ID: LCS 180-336722/5
Matrix: Water
Analysis Batch: 336722

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.8		mg/L		104	90 - 110
Fluoride	2.50	2.52		mg/L		101	90 - 110
Sulfate	50.0	51.1		mg/L		102	90 - 110

Lab Sample ID: 180-113158-1 MS
Matrix: Water
Analysis Batch: 336722

Client Sample ID: BC-0.8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	9.5		50.0	60.1		mg/L		101	90 - 110
Fluoride	0.066	J	2.50	2.52		mg/L		98	90 - 110
Sulfate	3.8		50.0	54.5		mg/L		101	90 - 110

Lab Sample ID: 180-113158-1 MSD
Matrix: Water
Analysis Batch: 336722

Client Sample ID: BC-0.8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9.5		50.0	61.0		mg/L		103	90 - 110	2	20
Fluoride	0.066	J	2.50	2.60		mg/L		101	90 - 110	3	20
Sulfate	3.8		50.0	55.3		mg/L		103	90 - 110	1	20

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

Lab Sample ID: MB 180-336278/1-A
Matrix: Water
Analysis Batch: 337118

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 336278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.00013		0.0025	0.00013	mg/L		11/07/20 08:11	11/13/20 19:41	1

Lab Sample ID: LCS 180-336278/2-A
Matrix: Water
Analysis Batch: 337118

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 336278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.500	0.504		mg/L		101	80 - 120
Calcium	25.0	28.6		mg/L		114	80 - 120
Boron	1.25	1.21		mg/L		97	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-336783/1
Matrix: Water
Analysis Batch: 336783

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-336799/29
Matrix: Water
Analysis Batch: 336799

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-336799/3
Matrix: Water
Analysis Batch: 336799

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-113158-3 DU
Matrix: Water
Analysis Batch: 336799

Client Sample ID: BC-BR
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.5		SU		0.5	2

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

Lab Sample ID: MB 180-336451/2
Matrix: Water
Analysis Batch: 336451

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		10	10	mg/L			11/09/20 17:15	1

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

Lab Sample ID: LCS 180-336451/1
Matrix: Water
Analysis Batch: 336451

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			714	700		mg/L		98	80 - 120		

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-336113/53
Matrix: Water
Analysis Batch: 336113

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	<5.0		5.0	5.0	mg/L			11/05/20 16:59	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			11/05/20 16:59	1

Lab Sample ID: LCS 180-336113/52
Matrix: Water
Analysis Batch: 336113

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	236		mg/L		95	90 - 110		

HPLC/IC

Analysis Batch: 336638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-2	BC-0.5.5	Total/NA	Water	EPA 300.0 R2.1	
180-113158-3	BC-BR	Total/NA	Water	EPA 300.0 R2.1	
MB 180-336638/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-336638/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 336722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-336722/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-336722/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-113158-1 MS	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	
180-113158-1 MSD	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 336278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total Recoverable	Water	3005A	
180-113158-2	BC-0.5.5	Total Recoverable	Water	3005A	
180-113158-3	BC-BR	Total Recoverable	Water	3005A	
MB 180-336278/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-336278/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 337118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total Recoverable	Water	EPA 6020B	336278
180-113158-2	BC-0.5.5	Total Recoverable	Water	EPA 6020B	336278
180-113158-3	BC-BR	Total Recoverable	Water	EPA 6020B	336278
MB 180-336278/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	336278
LCS 180-336278/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	336278

General Chemistry

Analysis Batch: 336113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	SM2320 B	
180-113158-2	BC-0.5.5	Total/NA	Water	SM2320 B	
180-113158-3	BC-BR	Total/NA	Water	SM2320 B	
MB 180-336113/53	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-336113/52	Lab Control Sample	Total/NA	Water	SM2320 B	

Analysis Batch: 336451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	SM 2540C	
180-113158-2	BC-0.5.5	Total/NA	Water	SM 2540C	
180-113158-3	BC-BR	Total/NA	Water	SM 2540C	
MB 180-336451/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336451/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 336783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-1	BC-0.8	Total/NA	Water	EPA 9040C	

General Chemistry (Continued)

Analysis Batch: 336783 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-336783/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 336799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113158-2	BC-0.5.5	Total/NA	Water	EPA 9040C	
180-113158-3	BC-BR	Total/NA	Water	EPA 9040C	
LCS 180-336799/29	Lab Control Sample	Total/NA	Water	EPA 9040C	
LCS 180-336799/3	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-113158-3 DU	BC-BR	Total/NA	Water	EPA 9040C	

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

Chain of Custody Record

Client Information	Sampler: RAGO / JOHNSON	Lab PM: Lanier, Jerry A GAIL LANG	Carrier Tracking No(s):	COC No: 180-65384-13119.1
Client Contact: Warren Johnson	Phone: 678-485-5298	E-Mail: GAIL.LANG Jerry.Lanier@Eurofinset.com		Page: Page 1 of 1
Company: ARCADIS U.S., Inc.				Job #:
Address: 2839 Paces Ferry Road SE Suite 900	Due Date Requested:			
City: Atlanta	TAT Requested (days): 7 DAY			
State, Zip: GA, 30339	PO #: ~~Purchase Order Requested~~ 3CS10352606			
Phone: 404-952-1615(Tel)	WO #:			
Email: warren.johnson@arcadis.com	Project #: 18023144			
Project Name: Georgia Power CCR	SSOW#:			
Site: PLANT ARKWRIGHT				

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	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)	6020B - Metals COBALT ONLY	2320B, 9040C, 9056A_ORGFM_28D	2540C_Calcd - TDS	6020B - Cobalt, Molybdenum, Lithium	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N			
BC-0.8	11/3/20	1238	G	Water			X	X	X	X		32°55'22"N / -83°42'20"W
BC-0.5.5	11/3/20	1124	G	Water			X	X	X	X		32°55'14"N / -83°42'06"W
BC-BR	11/3/20	1149	G	Water			X	X	X			32°55'12"N / -83°41'59"W
				Water								
				Water								
				Water								

180-113158 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)

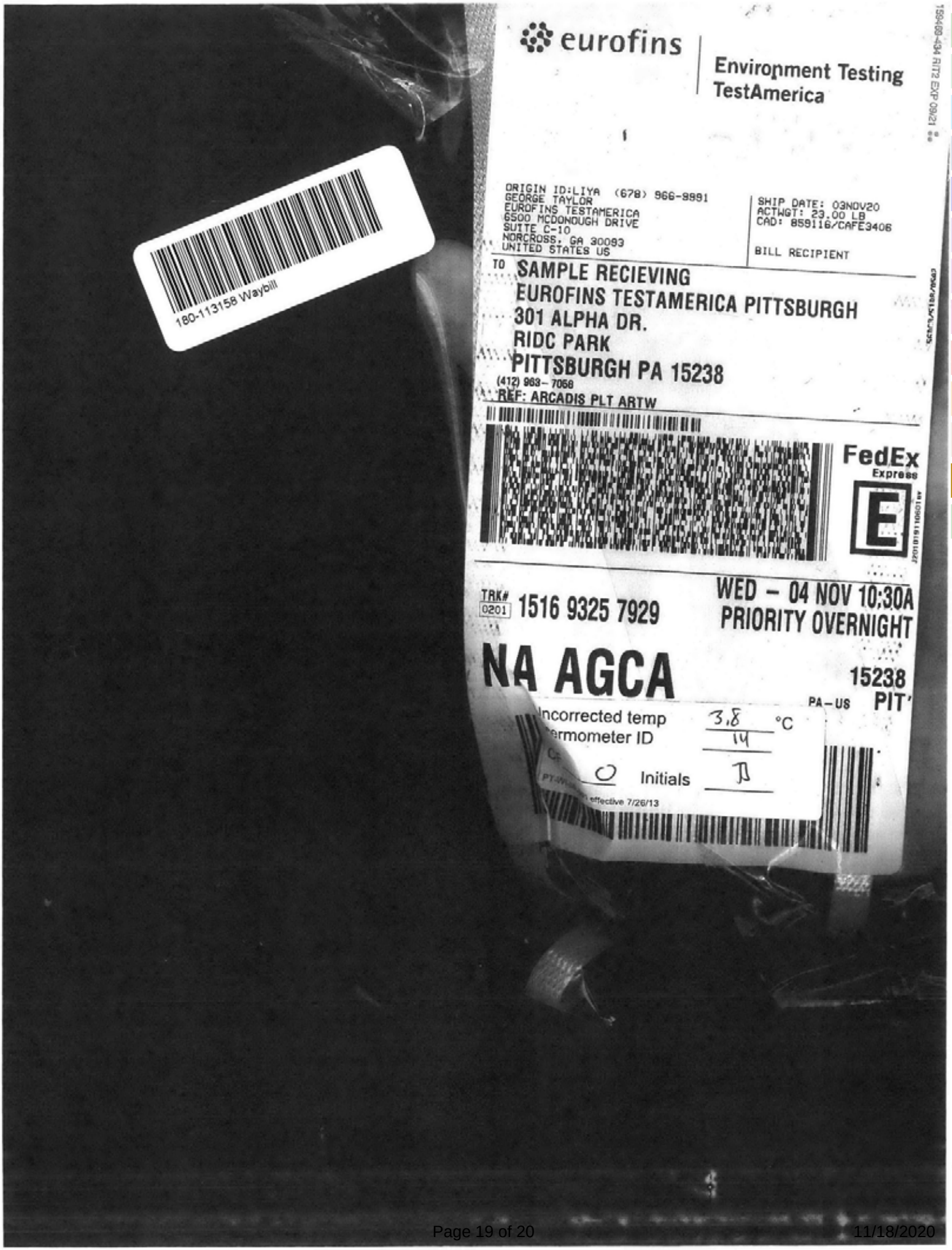
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		11/03/2020 17:40	Arcadis		11/3/20 17:40	ETA
2	11/3/20	18:00	ETA		11/4/20 900	ETA
3						

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

Ver: 01/16/2019


180-113158 Waybill
eurofins
Environment Testing
TestAmerica
ORIGIN ID:LIYA (678) 966-9991
GEORGE TAYLOR
EUROFINS TESTAMERICA
6500 MCDONOUGH DRIVE
SUITE C-10
NORCROSS, GA 30093
UNITED STATES US
SHIP DATE: 03NOV20
ACTWGT: 23.00 LB
CAD: 859116/CAFE3406
BILL RECIPIENT
TO SAMPLE RECIEVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DR.
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: ARCADIS PLT ARTW
FedEx
Express
TRK# 0201 1516 9325 7929
WED - 04 NOV 10:30A
PRIORITY OVERNIGHT
NA AGCA
15238
PA-US
PIT
Uncorrected temp 3.8 °C
Thermometer ID 14
Initials
effective 7/26/13

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-113158-1

Login Number: 113158
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: 180-117154-1
Client Project/Site: CCR - Arkwright Surfacewater

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham

Authorized for release by:
2/19/2021 2:59:43 PM

Shali Brown, Project Manager II
(615)301-5031
Shali.Brown@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Job ID: 180-117154-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-117154-1

Comments
No additional comments.

Receipt
The samples were received on 2/12/2021 8:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2º C, 2.3º C and 3.2º C.

Receipt Exceptions
The container label for the 250ML container for the following sample did not match the information listed on the Chain-of-Custody (COC): BC-0.1 (180-117154-9). The container labels list a sample id of BC-0.4, while the COC lists BC-0.1. The id on the COC was used.

There are no sample collection dates or times listed on the labels. BT-1.6 (180-117154-1), BT-1.0 (180-117154-2), BC-0.8 (180-117154-3), BC-0.5.7 (180-117154-4), BC-0.5.6 (180-117154-5), BC-0.5.5 (180-117154-6), BC-BR (180-117154-7), BC-0.3 (180-117154-8) and BC-0.1 (180-117154-9)

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
Job ID: 180-117154-1
Project/Site: CCR - Arkwright Surfacewater

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.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Southern Company
Job ID: 180-117154-1
Project/Site: CCR - Arkwright Surfacewater

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	06-27-21
California	State	2891	02-21-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20 *
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-21

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

Sample Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-117154-1	BT-1.6	Water	02/10/21 09:56	02/12/21 08:45	
180-117154-2	BT-1.0	Water	02/10/21 10:37	02/12/21 08:45	
180-117154-3	BC-0.8	Water	02/10/21 11:07	02/12/21 08:45	
180-117154-4	BC-0.5.7	Water	02/10/21 11:56	02/12/21 08:45	
180-117154-5	BC-0.5.6	Water	02/10/21 12:10	02/12/21 08:45	
180-117154-6	BC-0.5.5	Water	02/10/21 12:34	02/12/21 08:45	
180-117154-7	BC-BR	Water	02/10/21 12:56	02/12/21 08:45	
180-117154-8	BC-0.3	Water	02/10/21 15:49	02/12/21 08:45	
180-117154-9	BC-0.1	Water	02/10/21 14:06	02/12/21 08:45	

Method Summary

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9040C	pH	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:

EPA = US Environmental Protection Agency

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 - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BT-1.6

Date Collected: 02/10/21 09:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-1

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	1 mL	1.0 mL	346485	02/13/21 16:27	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:39	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:31	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 20:48	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BT-1.0

Date Collected: 02/10/21 10:37
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-2

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	1 mL	1.0 mL	346485	02/13/21 17:29	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:50	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:33	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 20:56	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.8

Date Collected: 02/10/21 11:07
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-3

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	1 mL	1.0 mL	346485	02/13/21 17:50	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:54	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:34	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:05	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.7

Date Collected: 02/10/21 11:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-4

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	1 mL	1.0 mL	346485	02/13/21 18:11	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 20:57	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:35	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:13	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.5.6

Date Collected: 02/10/21 12:10
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-5

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	1 mL	1.0 mL	346485	02/13/21 18:32	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:01	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:36	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:22	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.5.5

Date Collected: 02/10/21 12:34
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-6

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	346485	02/13/21 18:53	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:05	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:37	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346849	02/17/21 13:17	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:31	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-BR

Date Collected: 02/10/21 12:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-7

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	346485	02/13/21 19:14	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:08	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:38	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 21:39	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.3

Date Collected: 02/10/21 15:49
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-8

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	346485	02/13/21 19:35	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:12	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:39	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 22:35	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Client Sample ID: BC-0.1

Date Collected: 02/10/21 14:06
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-9

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	1 mL	1.0 mL	346485	02/13/21 20:37	SAT	TAL PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	346673	02/16/21 10:18	TJO	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			346915	02/17/21 21:15	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Analysis	EPA 9040C		1			346717	02/16/21 14:40	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	346820	02/17/21 10:34	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM2320 B		1			346651	02/13/21 22:52	REI	TAL PIT
	Instrument ID: PCTITRATOR									

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

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

TJO = Tyler Oliver

Batch Type: Analysis

GRB = Gabriel Berghe
PMH = Paloma Hoelzle
REI = Rachel Innocenzi
RSK = Robert Kurtz
SAT = Stephen Tallam

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BT-1.6

Date Collected: 02/10/21 09:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.3		1.0	0.71	mg/L			02/13/21 16:27	1
Fluoride	0.050	J	0.10	0.026	mg/L			02/13/21 16:27	1
Sulfate	3.2		1.0	0.76	mg/L			02/13/21 16:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:39	1
Calcium	7.6		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:39	1
Cobalt	0.00028	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:39	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:39	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:39	1
Sodium	5.3		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:39	1
Potassium	1.7		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:39	1
Magnesium	4.7		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.1	HF	0.1	0.1	SU			02/16/21 14:31	1
Total Dissolved Solids	67		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 20:48	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 20:48	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BT-1.0
Date Collected: 02/10/21 10:37
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		1.0	0.71	mg/L			02/13/21 17:29	1
Fluoride	0.051	J	0.10	0.026	mg/L			02/13/21 17:29	1
Sulfate	41		1.0	0.76	mg/L			02/13/21 17:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.089		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:50	1
Calcium	12		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:50	1
Cobalt	0.0013	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:50	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:50	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:50	1
Sodium	6.9		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:50	1
Potassium	1.8		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:50	1
Magnesium	9.3		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.9	HF	0.1	0.1	SU			02/16/21 14:33	1
Total Dissolved Solids	120		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	42		5.0	5.0	mg/L			02/13/21 20:56	1
Bicarbonate Alkalinity as CaCO3	42		5.0	5.0	mg/L			02/13/21 20:56	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.8

Date Collected: 02/10/21 11:07
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.0		1.0	0.71	mg/L			02/13/21 17:50	1
Fluoride	0.050	J	0.10	0.026	mg/L			02/13/21 17:50	1
Sulfate	32		1.0	0.76	mg/L			02/13/21 17:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.27		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:54	1
Calcium	15		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:54	1
Cobalt	0.0019	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:54	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:54	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:54	1
Sodium	9.3		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:54	1
Potassium	1.6		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:54	1
Magnesium	8.0		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.2	HF	0.1	0.1	SU			02/16/21 14:34	1
Total Dissolved Solids	130		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 21:05	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 21:05	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.7
Date Collected: 02/10/21 11:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.5		1.0	0.71	mg/L			02/13/21 18:11	1
Fluoride	0.055	J	0.10	0.026	mg/L			02/13/21 18:11	1
Sulfate	6.4		1.0	0.76	mg/L			02/13/21 18:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.047	J	0.080	0.039	mg/L		02/16/21 10:18	02/17/21 20:57	1
Calcium	8.4		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 20:57	1
Cobalt	0.00056	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 20:57	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 20:57	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 20:57	1
Sodium	8.2		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 20:57	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 20:57	1
Magnesium	4.2		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 20:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1	0.1	SU			02/16/21 14:35	1
Total Dissolved Solids	85		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	44		5.0	5.0	mg/L			02/13/21 21:13	1
Bicarbonate Alkalinity as CaCO3	44		5.0	5.0	mg/L			02/13/21 21:13	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.6
Date Collected: 02/10/21 12:10
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.6		1.0	0.71	mg/L			02/13/21 18:32	1
Fluoride	0.055	J	0.10	0.026	mg/L			02/13/21 18:32	1
Sulfate	6.7		1.0	0.76	mg/L			02/13/21 18:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:01	1
Calcium	8.7		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:01	1
Cobalt	0.00057	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:01	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:01	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:01	1
Sodium	8.4		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:01	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:01	1
Magnesium	4.3		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			02/16/21 14:36	1
Total Dissolved Solids	96		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 21:22	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 21:22	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.5.5
Date Collected: 02/10/21 12:34
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		1.0	0.71	mg/L			02/13/21 18:53	1
Fluoride	0.062	J	0.10	0.026	mg/L			02/13/21 18:53	1
Sulfate	6.8		1.0	0.76	mg/L			02/13/21 18:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:05	1
Calcium	8.1		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:05	1
Cobalt	0.00050	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:05	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:05	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:05	1
Sodium	8.1		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:05	1
Potassium	1.8		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:05	1
Magnesium	4.2		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			02/16/21 14:37	1
Total Dissolved Solids	76		10	10	mg/L			02/17/21 13:17	1
Total Alkalinity as CaCO3 to pH 4.5	44		5.0	5.0	mg/L			02/13/21 21:31	1
Bicarbonate Alkalinity as CaCO3	44		5.0	5.0	mg/L			02/13/21 21:31	1

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-BR
Date Collected: 02/10/21 12:56
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.6		1.0	0.71	mg/L			02/13/21 19:14	1
Fluoride	0.056	J	0.10	0.026	mg/L			02/13/21 19:14	1
Sulfate	6.7		1.0	0.76	mg/L			02/13/21 19:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:08	1
Calcium	9.0		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:08	1
Cobalt	0.00052	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:08	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:08	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:08	1
Sodium	8.6		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:08	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:08	1
Magnesium	4.4		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			02/16/21 14:38	1
Total Dissolved Solids	88		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 21:39	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 21:39	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.3

Date Collected: 02/10/21 15:49
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.0		1.0	0.71	mg/L			02/13/21 19:35	1
Fluoride	0.051	J	0.10	0.026	mg/L			02/13/21 19:35	1
Sulfate	6.5		1.0	0.76	mg/L			02/13/21 19:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:12	1
Calcium	8.6		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:12	1
Cobalt	0.00050	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:12	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:12	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:12	1
Sodium	8.4		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:12	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:12	1
Magnesium	4.3		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			02/16/21 14:39	1
Total Dissolved Solids	98		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	44		5.0	5.0	mg/L			02/13/21 22:35	1
Bicarbonate Alkalinity as CaCO3	44		5.0	5.0	mg/L			02/13/21 22:35	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Arkwright Surfacewater

Job ID: 180-117154-1

Client Sample ID: BC-0.1

Date Collected: 02/10/21 14:06
Date Received: 02/12/21 08:45

Lab Sample ID: 180-117154-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		1.0	0.71	mg/L			02/13/21 20:37	1
Fluoride	0.056	J	0.10	0.026	mg/L			02/13/21 20:37	1
Sulfate	6.9		1.0	0.76	mg/L			02/13/21 20:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 21:15	1
Calcium	8.3		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 21:15	1
Cobalt	0.00057	J	0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 21:15	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 21:15	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 21:15	1
Sodium	8.2		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 21:15	1
Potassium	1.9		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 21:15	1
Magnesium	4.2		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 21:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			02/16/21 14:40	1
Total Dissolved Solids	92		10	10	mg/L			02/17/21 10:34	1
Total Alkalinity as CaCO3 to pH 4.5	43		5.0	5.0	mg/L			02/13/21 22:52	1
Bicarbonate Alkalinity as CaCO3	43		5.0	5.0	mg/L			02/13/21 22:52	1

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

Lab Sample ID: MB 180-346485/6
Matrix: Water
Analysis Batch: 346485

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			02/13/21 07:55	1
Fluoride	<0.026		0.10	0.026	mg/L			02/13/21 07:55	1
Sulfate	<0.76		1.0	0.76	mg/L			02/13/21 07:55	1

Lab Sample ID: LCS 180-346485/5
Matrix: Water
Analysis Batch: 346485

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.4		mg/L		103	90 - 110
Fluoride	2.50	2.49		mg/L		100	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: 180-117154-1 MS
Matrix: Water
Analysis Batch: 346485

Client Sample ID: BT-1.6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.3		50.0	57.9		mg/L		103	90 - 110
Fluoride	0.050	J	2.50	2.54		mg/L		99	90 - 110
Sulfate	3.2		50.0	54.4		mg/L		102	90 - 110

Lab Sample ID: 180-117154-1 MSD
Matrix: Water
Analysis Batch: 346485

Client Sample ID: BT-1.6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.3		50.0	57.0		mg/L		102	90 - 110	1	20
Fluoride	0.050	J	2.50	2.50		mg/L		98	90 - 110	1	20
Sulfate	3.2		50.0	53.5		mg/L		101	90 - 110	2	20

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

Lab Sample ID: MB 180-346673/1-A
Matrix: Water
Analysis Batch: 346915

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 346673

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		02/16/21 10:18	02/17/21 19:52	1
Calcium	<0.13		0.50	0.13	mg/L		02/16/21 10:18	02/17/21 19:52	1
Cobalt	<0.00013		0.0025	0.00013	mg/L		02/16/21 10:18	02/17/21 19:52	1
Lithium	<0.0034		0.0050	0.0034	mg/L		02/16/21 10:18	02/17/21 19:52	1
Molybdenum	<0.00061		0.015	0.00061	mg/L		02/16/21 10:18	02/17/21 19:52	1
Sodium	<0.35		0.50	0.35	mg/L		02/16/21 10:18	02/17/21 19:52	1
Potassium	<0.16		0.50	0.16	mg/L		02/16/21 10:18	02/17/21 19:52	1
Magnesium	<0.083		0.50	0.083	mg/L		02/16/21 10:18	02/17/21 19:52	1

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

Lab Sample ID: LCS 180-346673/2-A
Matrix: Water
Analysis Batch: 346915

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 346673

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.22		mg/L		98	80 - 120
Calcium	25.0	26.8		mg/L		107	80 - 120
Cobalt	0.500	0.487		mg/L		97	80 - 120
Lithium	0.500	0.489		mg/L		98	80 - 120
Molybdenum	0.500	0.512		mg/L		102	80 - 120
Sodium	25.0	24.9		mg/L		100	80 - 120
Potassium	25.0	25.2		mg/L		101	80 - 120
Magnesium	25.0	26.2		mg/L		105	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-346717/1
Matrix: Water
Analysis Batch: 346717

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-117154-1 DU
Matrix: Water
Analysis Batch: 346717

Client Sample ID: BT-1.6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.1	HF	7.1		SU		0.3	2

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

Lab Sample ID: MB 180-346820/2
Matrix: Water
Analysis Batch: 346820

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		10	10	mg/L			02/17/21 10:34	1

Lab Sample ID: LCS 180-346820/1
Matrix: Water
Analysis Batch: 346820

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	457	420		mg/L		92	80 - 120

Lab Sample ID: MB 180-346849/2
Matrix: Water
Analysis Batch: 346849

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		10	10	mg/L			02/17/21 13:17	1

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

Lab Sample ID: LCS 180-346849/1
Matrix: Water
Analysis Batch: 346849

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			457	438		mg/L		96	80 - 120		

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-346651/52
Matrix: Water
Analysis Batch: 346651

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	<5.0		5.0	5.0	mg/L			02/13/21 18:48	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/13/21 18:48	1

Lab Sample ID: MB 180-346651/76
Matrix: Water
Analysis Batch: 346651

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	<5.0		5.0	5.0	mg/L			02/13/21 22:26	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/13/21 22:26	1

Lab Sample ID: LCS 180-346651/51
Matrix: Water
Analysis Batch: 346651

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	268		mg/L		107	90 - 110		

Lab Sample ID: LCS 180-346651/75
Matrix: Water
Analysis Batch: 346651

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	257		mg/L		103	90 - 110		

Lab Sample ID: 180-117154-8 DU
Matrix: Water
Analysis Batch: 346651

Client Sample ID: BC-0.3
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	44			45.1		mg/L				3	20
Bicarbonate Alkalinity as CaCO3	44			45.1		mg/L				3	20

HPLC/IC

Analysis Batch: 346485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	EPA 300.0 R2.1	
180-117154-2	BT-1.0	Total/NA	Water	EPA 300.0 R2.1	
180-117154-3	BC-0.8	Total/NA	Water	EPA 300.0 R2.1	
180-117154-4	BC-0.5.7	Total/NA	Water	EPA 300.0 R2.1	
180-117154-5	BC-0.5.6	Total/NA	Water	EPA 300.0 R2.1	
180-117154-6	BC-0.5.5	Total/NA	Water	EPA 300.0 R2.1	
180-117154-7	BC-BR	Total/NA	Water	EPA 300.0 R2.1	
180-117154-8	BC-0.3	Total/NA	Water	EPA 300.0 R2.1	
180-117154-9	BC-0.1	Total/NA	Water	EPA 300.0 R2.1	
MB 180-346485/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-346485/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-117154-1 MS	BT-1.6	Total/NA	Water	EPA 300.0 R2.1	
180-117154-1 MSD	BT-1.6	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 346673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total Recoverable	Water	3005A	
180-117154-2	BT-1.0	Total Recoverable	Water	3005A	
180-117154-3	BC-0.8	Total Recoverable	Water	3005A	
180-117154-4	BC-0.5.7	Total Recoverable	Water	3005A	
180-117154-5	BC-0.5.6	Total Recoverable	Water	3005A	
180-117154-6	BC-0.5.5	Total Recoverable	Water	3005A	
180-117154-7	BC-BR	Total Recoverable	Water	3005A	
180-117154-8	BC-0.3	Total Recoverable	Water	3005A	
180-117154-9	BC-0.1	Total Recoverable	Water	3005A	
MB 180-346673/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-346673/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 346915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total Recoverable	Water	EPA 6020B	346673
180-117154-2	BT-1.0	Total Recoverable	Water	EPA 6020B	346673
180-117154-3	BC-0.8	Total Recoverable	Water	EPA 6020B	346673
180-117154-4	BC-0.5.7	Total Recoverable	Water	EPA 6020B	346673
180-117154-5	BC-0.5.6	Total Recoverable	Water	EPA 6020B	346673
180-117154-6	BC-0.5.5	Total Recoverable	Water	EPA 6020B	346673
180-117154-7	BC-BR	Total Recoverable	Water	EPA 6020B	346673
180-117154-8	BC-0.3	Total Recoverable	Water	EPA 6020B	346673
180-117154-9	BC-0.1	Total Recoverable	Water	EPA 6020B	346673
MB 180-346673/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	346673
LCS 180-346673/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	346673

General Chemistry

Analysis Batch: 346651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	SM2320 B	
180-117154-2	BT-1.0	Total/NA	Water	SM2320 B	
180-117154-3	BC-0.8	Total/NA	Water	SM2320 B	
180-117154-4	BC-0.5.7	Total/NA	Water	SM2320 B	

General Chemistry (Continued)

Analysis Batch: 346651 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-5	BC-0.5.6	Total/NA	Water	SM2320 B	
180-117154-6	BC-0.5.5	Total/NA	Water	SM2320 B	
180-117154-7	BC-BR	Total/NA	Water	SM2320 B	
180-117154-8	BC-0.3	Total/NA	Water	SM2320 B	
180-117154-9	BC-0.1	Total/NA	Water	SM2320 B	
MB 180-346651/52	Method Blank	Total/NA	Water	SM2320 B	
MB 180-346651/76	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-346651/51	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-346651/75	Lab Control Sample	Total/NA	Water	SM2320 B	
180-117154-8 DU	BC-0.3	Total/NA	Water	SM2320 B	

Analysis Batch: 346717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	EPA 9040C	
180-117154-2	BT-1.0	Total/NA	Water	EPA 9040C	
180-117154-3	BC-0.8	Total/NA	Water	EPA 9040C	
180-117154-4	BC-0.5.7	Total/NA	Water	EPA 9040C	
180-117154-5	BC-0.5.6	Total/NA	Water	EPA 9040C	
180-117154-6	BC-0.5.5	Total/NA	Water	EPA 9040C	
180-117154-7	BC-BR	Total/NA	Water	EPA 9040C	
180-117154-8	BC-0.3	Total/NA	Water	EPA 9040C	
180-117154-9	BC-0.1	Total/NA	Water	EPA 9040C	
LCS 180-346717/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-117154-1 DU	BT-1.6	Total/NA	Water	EPA 9040C	

Analysis Batch: 346820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-1	BT-1.6	Total/NA	Water	SM 2540C	
180-117154-2	BT-1.0	Total/NA	Water	SM 2540C	
180-117154-3	BC-0.8	Total/NA	Water	SM 2540C	
180-117154-4	BC-0.5.7	Total/NA	Water	SM 2540C	
180-117154-5	BC-0.5.6	Total/NA	Water	SM 2540C	
180-117154-7	BC-BR	Total/NA	Water	SM 2540C	
180-117154-8	BC-0.3	Total/NA	Water	SM 2540C	
180-117154-9	BC-0.1	Total/NA	Water	SM 2540C	
MB 180-346820/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-346820/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 346849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-117154-6	BC-0.5.5	Total/NA	Water	SM 2540C	
MB 180-346849/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-346849/1	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

244- ATLANTA

Eurofins

Client Information	Sampler: Johnson/Rago	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No:
Client Contact: SCS Contacts	Phone: 678.485.5298	E-Mail: shali.brown@eurofinset.com		Page:
Company: GA Power			Analysis Requested	Job #:

Address: 241 Ralph McGill Blvd SE	Due Date Requested: 02/16/2021
City: Atlanta	TAT Requested (days): 3 Day TAT
State, Zip: GA, 30308	
Phone: 404-506-7116(Tel)	PO #: SCS10382606
Email: SCS Contacts Ben Hodges	WO #:
Project Name: CCR - Plant Arkwright Surfacewater	Project #: 18023157
Site: Georgia	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)	CCR App IV (Co, Li,Mo ONLY)	CCR App III*	Major Ions*	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
BT-1.6	02/10/2021	0956	G	W			x	x	x		CCR App III - boron, calcium,
BT-1.0	02/10/2021	1037	G	W			x	x	x		chloride, sulfate, fluoride, pH,
BC-0.8	02/10/2021	1107	G	W			x	x	x		and total dissolved solids
BC-0.5.7	02/10/2021	1156	G	W			x	x	x		Major Ions - Mg, Na, K, total
BC-0.5.6	02/10/2021	1210	G	W			x	x	x		alkalinity, bicarbonate alkalinity
BC-0.5.5	02/10/2021	1234	G	W			x	x	x		
BC-BR	02/10/2021	1256	G	W			x	x	x		
BC-0.3	02/10/2021	1549	G	W			x	x	x		
BC-0.1	02/10/2021	1406	G	W			x	x	x		

* 3 DAY TAT

180-117154 Chain of Custody

Possible Hazard Identification
[X] 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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	2-11-21 10:00	ASCadis		2/11/21 10:00	ETA
Relinquished by	2/11/21 16:00	ETA	Received by	2-12-21 8:45	ETA Pitt
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


RT 97
FZ
16:30
1084
02.12
YA (678) 966-9991
TING AMERICA ATL SC
PARKWAY NW
30071
S US
SHIP DATE: 11FEB21
ACTWGT: 65.40 LB
CAD: 859116/CAFE3406
BILL RECIPIENT
E RECIEVING
INS TESTAMERICA PITTSBURGH
PHA DR.
ARK
BURGH PA 15238
DIS – PLAT – ARTW
FedEx
Express
FRI – 12 FEB 4:30P
STANDARD OVERNIGHT
69328 1084
16 9328 1073
0201
AGCA
15238
PIT
PA-US
Uncorrected temp
Thermometer ID
3.2
14
°C
CF 0
Initials
PT-WI-SR-001 effective 11/8/18
180-117154 Waybill
eurofins
ORIGIN ID:LIYA (678) 966-9991
GEORGE TAYLOR
EUROFINS TESTING AMERICA ATL SC
6215 REGENCY PARKWAY NW
SUITE 900
NORCROSS, GA 30071
UNITED STATES US
SHIP DATE: 11FEB21
ACTWGT: 65.40 LB
CAD: 859116/CAFE3406
BILL RECIPIENT
TO SAMPLE RECIEVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DR.
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: ARCADIS – PLAT – ARTW
FedEx
Express
FRI – 12 FEB 4:30P A
STANDARD OVERNIGHT T
3 of 3
1516 9328 1095
1516 9328 1073
0201
NA AGCA
15238 3
PIT L
PA-US
Uncorrected temp
Thermometer ID
2.3
14
°C
CF 0
Initials
PT-WI-SR-001 effective 11/8/18

2/19/2021

eurofins | Environment Testing

RT 97 1 16:30 A 1073 02.12

FZ

Part # 159469-434 RIT2 EXP 11/21

ORIGIN ID:LIYA (678) 966-9991
GEORGE TAYLOR
EUROFINS TESTING AMERICA ATL SC
6215 REGENCY PARKWAY NW
SUITE 900
NORCROSS, GA 30071
UNITED STATES US

DATE: 11FEB21
ACTWGT: 65.40 LB
CAD: 859116/CAFE3406

BILL RECIPIENT

TO SAMPLE RECIEVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DR.
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
REF: ARCADIS - PLAT - ARTW

FedEx Express

1 of 3

TRK# 0201 1516 9328 1073

FRI - 12 FEB 4:30P
STANDARD OVERNIGHT

MASTER

NA AGCA

15238
PA-US PIT

Uncorrected temp 13 °C
Thermometer ID 14
CF 0 Initials
PT-WI-SR-001 effective 11/8/18

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-117154-1

Login Number: 117154
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.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	