



REPORT

2020 Semi-Annual Groundwater Monitoring & Corrective Action Report

Georgia Power Company - Plant McDonough-Atkinson Ash Pond 1

Submitted to:



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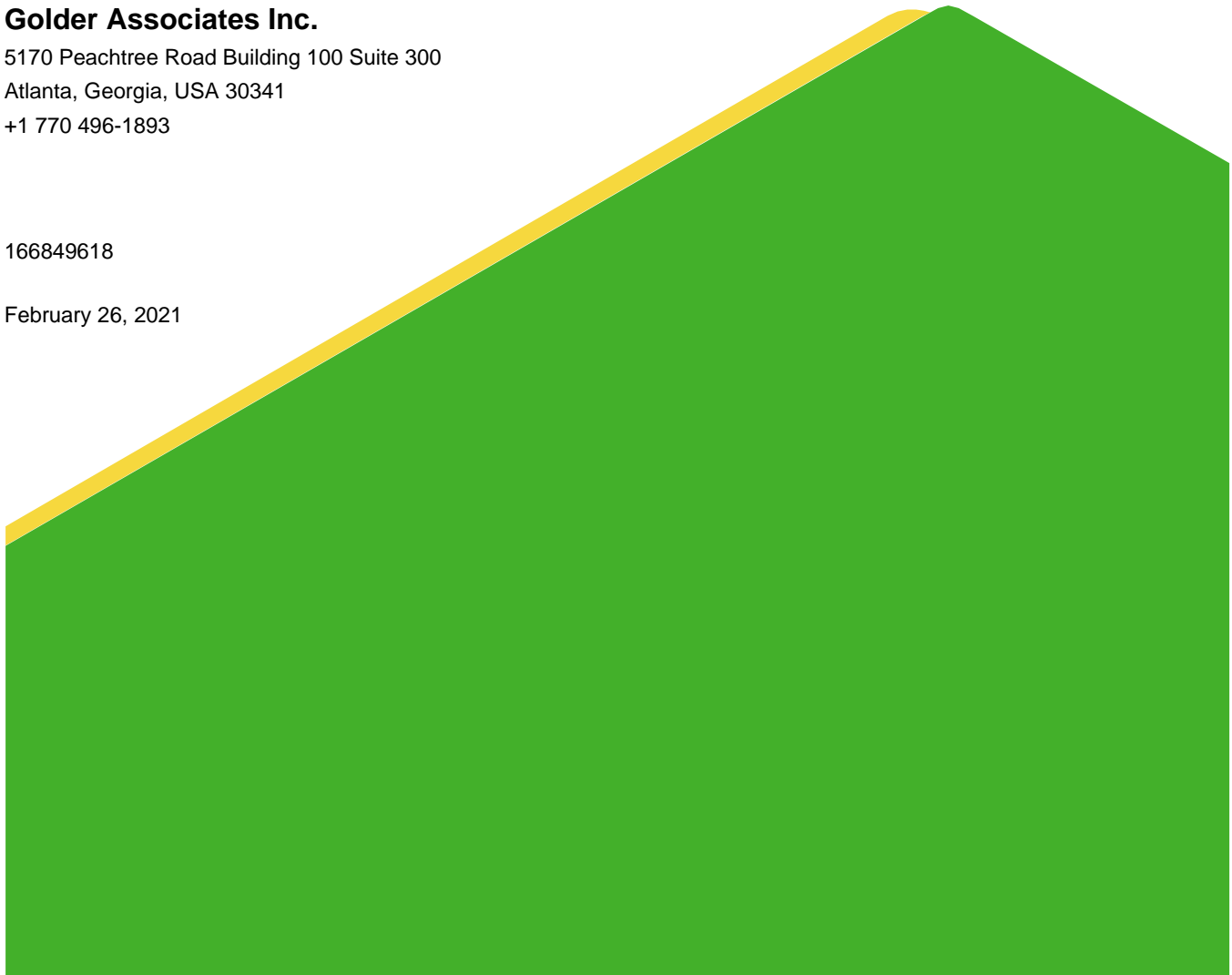
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Summary

This summary of the 2020 Semi-Annual Groundwater Monitoring & Corrective Action Report provides the status of groundwater monitoring and corrective program through December 2020 at Georgia Power Company's (Georgia Power) Plant McDonough-Atkinson Ash Pond 1 (AP-1). This summary was prepared by Golder Associates (Golder) on behalf of Georgia Power to meet the requirements listed in Part A, Section 6¹ of the U.S. Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D). As required in 40 CFR § 257.90(e), this semi-annual report describes the status of the groundwater monitoring program, summarizes key actions completed, and presents projected key activities for the upcoming year for AP-1. Other CCR units (AP-2 and 3/4) on-site at Plant McDonough are reported separately.

Plant McDonough-Atkinson (Plant McDonough), formerly a coal-fired power generating facility, was converted to a natural gas combined-cycle power generating facility in 2011. Located approximately 7 miles northwest of Atlanta in southeast Cobb County (5551 South Cobb Dr SE, Atlanta, GA 30339), the property occupies approximately 390 acres and is bounded on the southeast by the Chattahoochee River.

Groundwater at the Site is monitored using a monitoring system comprised of upgradient and downgradient wells for each CCR Unit. AP-1 network consists of three (3) upgradient and seven (7) downgradient wells installed to meet federal and state monitoring requirements. Routine sampling and reporting for AP-1 began after the background groundwater conditions were established between 2016 and 2018. Based on groundwater quality, an assessment monitoring program and assessment of corrective measures were established on November 13, 2019 and July 9, 2020, respectively. During the 2020 semi-annual reporting period, the Site remained in assessment monitoring as corrective measures were evaluated.

Groundwater elevation measurements were recorded from the site monitoring wells prior to each sampling event. The elevation data were used to confirm the groundwater flow direction, and to confirm that the groundwater monitoring well network for the CCR units remains sufficient to monitor groundwater downgradient of the unit.



Figure 1: Plant McDonough

¹ 80 FR 21468, April 17, 2015, as amended at 81 FR 51807, August 5, 2016; 83 FR 36452, July 30, 2018; 85 FR 53561, August 28, 2020.

2020 Semi-Annual Groundwater Monitoring Activities

There is no change to the AP-1 certified detection monitoring network in 2020. Groundwater monitoring sampling events for AP-1 were conducted in August (annual) and September 2020 (semi-annual). Groundwater samples were collected from 10 detection monitoring wells and 3 assessment monitoring wells and analyzed for Appendix III² and Appendix IV³ required monitoring parameters.

Analytical data from the September 2020 monitoring event has been statistically analyzed in accordance with the site's certified statistical analysis method (Groundwater Stats Consulting, 2019). For the September 2020 semi-annual monitoring event, statistical analyses indicate statistically significant increases (SSIs) for Appendix III constituents above the statistical limits and statistically significant levels (SSLs) of Appendix IV constituents above the groundwater protection standards as summarized below.

Appendix III Constituent	September 2020
Boron	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A
Calcium	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A
Chloride	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-69
Fluoride	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A, DGWC-69
pH	DGWC-40
Sulfate	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A
TDS	DGWC-38, DGWC-39, DGWC-40, DGWC-67
Appendix IV Constituent	September 2020
Arsenic	DGWC-69
Cobalt	DGWC-40
Molybdenum	DGWC-68A

Based on review of the Appendix III and Appendix IV results noted above, the site will remain in Assessment Monitoring. Georgia Power will continue routine groundwater monitoring and evaluation of corrective action alternatives at the site. Reports will be posted to the website and provided to EPD semi-annually.

² Appendix III: boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids

³ Appendix IV: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, combined radium (226 + 228), selenium, and thallium.

Table of Contents

1.0 INTRODUCTION	1
1.1 Site Description and Background.....	1
1.2 Regional Geology and Hydrogeologic Setting	1
1.3 Groundwater Monitoring Network	2
2.0 GROUNDWATER MONITORING ACTIVITIES.....	2
2.1 Monitoring Well Installation and Maintenance	2
2.2 Assessment Monitoring.....	3
2.3 Additional Sampling	3
3.0 SAMPLE METHODOLOGY AND ANALYSIS.....	3
3.1 Groundwater Elevation Measurement	3
3.2 Groundwater Gradient and Flow Velocity	4
3.3 Groundwater Sampling	4
3.4 Surface Water Sampling	5
3.5 Laboratory Analysis.....	5
3.6 Quality Assurance and Quality Control	5
4.0 STATISTICAL ANALYSIS.....	6
4.1 Statistical Method.....	6
4.1.1 Appendix III Detection Monitoring Statistical Methods.....	7
4.1.2 Appendix IV Assessment Monitoring Statistical Methods.....	7
4.2 Statistical Analysis Results	9
4.2.1 September 2020 Appendix III Statistical Results.....	9
4.2.2 September 2020 Appendix IV Statistical Results	10
5.0 ASSESSMENT MONITORING AND DELINEATION STATUS	10
6.0 ASSESSMENT OF CORRECTIVE MEASURES	10
7.0 MONITORING PROGRAM STATUS.....	11
8.0 CONCLUSIONS AND FUTURE ACTIONS	11
9.0 REFERENCES.....	11

Table of Contents-continued

Tables

- Table 1A: Detection and Assessment Monitoring Network Summary
- Table 1B: Piezometer Network Summary
- Table 2: Groundwater Sampling Event Summary
- Table 3: Summary of Groundwater Elevations
- Table 4A: Horizontal Groundwater Flow Velocity Calculations – August 2020
- Table 4B: Horizontal Groundwater Flow Velocity Calculations – September 2020
- Table 5A: Analytical Data Summary, Ash Pond 1 – August 2020
- Table 5B: Analytical Data Summary, Ash Pond 1 – September 2020
- Table 5C: Assessment Monitoring Analytical Data Summary, Ash Pond 1 – August 2020
- Table 5D: Assessment Monitoring Analytical Data Summary, Ash Pond 1 – September 2020
- Table 5E: Surface Water Analytical Data Summary – November 2020
- Table 5F: Surface Water Analytical Data Summary – February 2021

Figures

- Figure 1: Site Location Map
- Figure 2: Monitoring Well, Piezometer and Surface Water Location Map
- Figure 3A: Site Potentiometric Map – August 10 , 2020
- Figure 3B: Site Potentiometric Map - September 21, 2020

Appendices

- Appendix A: Laboratory Analytical Data, Field Data Forms, Instrument Calibration Forms, Well Inspection Forms, Data Validation Summaries, and Laboratory Accreditation
- Appendix B: Well Installation Report(s)
- Appendix C: Certified Well Survey Report
- Appendix D: Statistical Analyses
- Appendix E: Semi-Annual Remedy Selection & Design Progress Report

Certification

This 2020 Semi-Annual Groundwater Monitoring & Corrective Action Report, Georgia Power Company - Plant McDonough-Atkinson – Ash Pond 1 (AP-1) has been prepared in compliance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations (CFR) 257 Subpart D] and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 (6)(a-c) by a qualified groundwater scientist or engineer with Golder Associates Inc.

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1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) coal combustion residuals (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D) and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10, this *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report* was prepared to document groundwater monitoring activities conducted at Georgia Power Company's (Georgia Power) Plant McDonough-Atkinson Ash Pond 1 (AP-1) and satisfies the requirements of § 257.90(e). To specify groundwater monitoring requirements, GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the USEPA 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.

This semi-annual report documents activities conducted during the second half of 2020 at AP-1. This report includes results of both the annual monitoring for Appendix IV of 40 CFR 257 conducted in August 2020 and the semi-annual monitoring event conducted in September 2020 for AP-1.

1.1 Site Description and Background

Plant McDonough-Atkinson (Plant McDonough, Site), formerly a coal-fired power generating facility, was converted to a natural gas combined-cycle power generating facility in 2011. Located approximately 7 miles northwest of Atlanta in southeast Cobb County (5551 South Cobb Dr SE, Atlanta, GA 30339), the property occupies approximately 390 acres and is bounded on the southeast by the Chattahoochee River. A site location map is included as Figure 1.

Four CCR surface impoundments are located on-site: Ash Pond 1 (AP-1), Ash Pond 2 (AP-2), Ash Pond 3 (AP-3) and Ash Pond 4 (AP-4). AP-3 and AP-4 have historically operated together and are being closed as a Combined Unit AP-2 and 3/4 and is reported separately. A notification of intent to initiate closure of the inactive CCR surface impoundment for AP-1 was certified on December 7, 2015 and posted to GPC's website. A permit application package was submitted to Georgia EPD in November 2018 and is pending approval.

Groundwater monitoring and reporting for AP-1 are being performed to meet the alternate schedule in § 257.100(e)(5) of the revised USEPA CCR rule (August 5, 2016).

1.2 Regional Geology and Hydrogeologic Setting

The following section and subsections include a general description of regional geologic and hydrogeologic characteristics of formations that occur beneath the site (Golder, 2020a).

The site is located in the Piedmont/Blue Ridge geologic province, which contains some of the oldest rock formations in the southeastern United States. These late Precambrian to late Paleozoic rocks have undergone repeated cycles of igneous intrusions and extrusions, metamorphism, folding, faulting, shearing, and silicification. Rock outcrops near the site consist of biotite gneiss, porphyritic gneiss, mica schist, and quartzite.

Residual soils, primarily clayey/sandy silt, sandy silt with clay, and silty sand, occur as a variably thick blanket overlying bedrock across most of the site. These residual saprolitic soils along with saprolitic transitionally or partially weathered rock, collectively the overburden, range between approximately 9 to 61 feet in thickness across the site, with an average thickness of approximately 38 feet. Saprolitic rock is considered to be transitionally weathered rock (TWR) or partially weathered rock (PWR). Where TWR is a qualitative description, PWR is defined by Standard Penetration Test (SPT) blow counts that exceed 50 blows/six inches.

A regional, unconfined surficial aquifer system is present at the site, existing within the overburden and weathered and fractured upper bedrock (e.g., approximate first 30 feet), depending on topographic location. Recharge primarily occurs through precipitation and subsequent infiltration. Generally, groundwater flow occurs through intergranular pore spaces in the overburden and is controlled by topography and top of rock variations. However, a relatively higher transmissive zone is interpreted to occur at the base of the overburden, at the interface of weathered bedrock and competent bedrock and is believed to be the primary groundwater flow path. Groundwater in the overburden has an average horizontal hydraulic conductivity of 10^{-4} centimeters per second (cm/s) and is interpreted to flow south-southeast.

A limited and localized bedrock aquifer system also occurs beneath the site. The upper bedrock is fractured and weathered, connected hydraulically with the overburden groundwater, and is considered part of the upper aquifer. The overlying silt/clay-rich overburden may act to retard recharge into the bedrock aquifer system. However, deeper bedrock (i.e., approximately 30 feet into the bedrock) is unweathered with few discontinuities (e.g., fractures) available to store groundwater.

1.3 Groundwater Monitoring Network

Pursuant to § 257.91, a groundwater monitoring system was installed within the uppermost aquifer at AP-1 to monitor groundwater passing the waste boundary. Wells were located to monitor upgradient and downgradient groundwater conditions based on groundwater flow direction. The monitoring well network was certified by a Professional Engineer in Georgia on April 17, 2019, and the certification is maintained in the Operating Record pursuant to § 257.90(f).

The certified monitoring well network for AP-1 consists of three (3) upgradient monitoring wells and seven (7) downgradient monitoring wells. Table 1A includes well construction details for the AP-1 monitoring well network. Additionally, a series of piezometers were installed at the Site to measure groundwater elevations. Table 1B includes construction details for site piezometers. AP-1 monitoring well and piezometer locations are shown on Figure 2.

2.0 GROUNDWATER MONITORING ACTIVITIES

The following section describes monitoring-related activities for sampling performed at the Site during the second half of 2020. Routine groundwater sampling was performed in August and September 2020 in accordance with 40 CFR § 257.93.

2.1 Monitoring Well Installation and Maintenance

There was no change to the groundwater monitoring system during this reporting period. Monitoring well related activities included visual inspection of well conditions prior to sampling, recording conditions around the well, and performing exterior maintenance to provide safe access for sampling. The well inspection logs are included in Appendix A.

Seven piezometers (B-94 through B-100) were installed at the site to further define groundwater gradient and flow direction and to characterize and horizontally delineate the nature and extent of select constituents in groundwater at the Site. These additional piezometers were installed through August 2020 at Plant McDonough and are documented in a report, *Well Installation Report* (Golder, 2020b), a copy of which is included in Appendix B.

During October and November 2020, 11 additional piezometers were installed to characterize and vertically delineate the nature and extent of select constituents in groundwater at the Site. Well development and slug

testing of these vertical delineation piezometers were completed in January 2021. The installation of the vertical delineation piezometers is documented in a report, Piezometer Installation Report (B-101D through B-111D) (Golder, 2021), a copy of which is included in Appendix B.

The AP-1 well network was re-surveyed by Metro Engineering and Surveying Company of McDonough, Georgia during July and August 2020. The top of the well casing and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North American Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to North American Vertical Datum of 1988 (NAVD). The *Well Installation and Design Report* presents a summary of the monitoring well and piezometer network for the site and presents the certified survey data and construction logs for each well and piezometer (Golder, 2020c). The new survey data are incorporated into this report's applicable tables. A copy of the survey report has been included in Appendix C.

2.2 Assessment Monitoring

Pursuant to §257.94(e), an assessment monitoring program has been established for AP-1 at Plant McDonough based on the SSIs documented in the *2019 Annual Groundwater Monitoring and Corrective Action Report*, (Golder, 2019). A notice of assessment monitoring was placed in the operation record on November 13, 2019.

Groundwater sampling events were conducted for AP-1 in August 2020 and September 2020. Samples were collected from each well in the certified monitoring network (Figure 2). The monitoring wells sampled included AP-1 monitoring wells presented in Table 1A as well as assessment monitoring wells B-100 and B-62. Table 2 presents a summary of groundwater sampling events completed for AP-1 and the status of the monitoring network.

During the August 2020 sampling event, groundwater samples were collected and analyzed for Appendix IV constituents to meet requirements of §257.95(b). During the September 2020 semi-annual sampling event, groundwater samples were collected for Appendix III parameters and those Appendix IV constituents detected during the August 2020 event. Results of sampling activities conducted in August and September 2020 are presented in Appendix A.

2.3 Additional Sampling

Additional sampling was conducted during the reporting period in support of the assessment of corrective measures and in continuing to define the nature and extent of impacts resulting from AP-1. This additional sampling is further discussed in Section 4.3.

3.0 SAMPLE METHODOLOGY AND ANALYSIS

Sampling events completed for AP-1 represent both the annual Appendix IV monitoring event as well as the semi-annual assessment monitoring event for AP-1 at Plant McDonough. Groundwater analytical data and chain of custody records are presented in Appendix A. The following sections describe methods used to conduct groundwater monitoring at the site.

3.1 Groundwater Elevation Measurement

Prior to each scheduled sampling event in August and September 2020, groundwater elevations were recorded at each well and piezometer. An additional set of measurements were recorded on November 3 in conjunction with field investigation activities at the site. Groundwater elevations data are summarized in Table 3. Calculated water

level data were used to develop Figure 3A and Figure 3B. Site potentiometric maps show that groundwater generally flows west/southwest across the site and is consistent with historical observations.

3.2 Groundwater Gradient and Flow Velocity

Hydraulic gradient is calculated as the difference in groundwater elevation (in feet) divided by the distance between two piezometers or wells (in feet). Groundwater elevation data recorded in August and September 2020 from three piezometer/well pairings; B-29/DGWC-68A, B-28/DWGC-37, and B-50/DWGC-39, located along the groundwater flow path and perpendicular to the potentiometric contours were used to calculate hydraulic gradients for AP-1.

Average groundwater flow velocities at the site were calculated using hydraulic gradient data, hydraulic conductivity data generated from slug testing results, and an estimated effective porosity of the screened portion of the uppermost aquifer. Based on slug test data, the average hydraulic conductivity of the overburden is 8.4×10^{-4} centimeters/second (cm/s). An effective porosity of 0.2 (20%) was used based on the default values for effective porosity recommended by USEPA for a silty sand-type soil (USEPA, 1996). The hydraulic gradients calculated between the well pairs are shown on Table 4A and Table 4B, respectively, for August and September 2020.

The horizontal flow velocities were calculated using the commonly used derivative of Darcy's Law:

$$V = \frac{K * i}{n_e} \quad \text{Where:}$$

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

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

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

$n_e =$ Effective porosity

Using this equation, groundwater flow velocities were calculated for AP-1 using August and September 2020 groundwater elevation data. Tables 4A and 4B presents the velocities calculated using groundwater elevation data from these sampling events.

Calculated (horizontal) flow velocities ranged from approximately 87 feet per year (ft/yr) to 162 ft/yr during the August and September 2020 event. These estimated flow velocities are consistent with past results and are also generally consistent with other published velocities for regolith-upper bedrock aquifers of the Piedmont (Heath, R.C., 1982).

3.3 Groundwater Sampling

Groundwater samples were collected in accordance with § 257.93(a) and using USEPA Region 4 Field Quality and Technical Procedures as a guide (USEPA, 2001). Monitoring wells were purged and sampled using low-flow sampling procedures. Non-dedicated, low-flow pneumatic bladder pumps and peristaltic pumps were used to purge and sample the wells. Field equipment was decontaminated prior to use and between wells using USEPA Science and Ecosystem Support Division (SESD) Operating Procedure for Field Equipment Cleaning and Decontamination as a guide (USEPA, 2015). A SmarTroll® (In-Situ® field instrument) was used to monitor and record field water quality parameters [temperature, specific conductance, dissolved oxygen (DO), pH, and

oxidation-reduction potential (ORP)] during purging. Turbidity was monitored using a LaMotte 2020we turbidimeter. Groundwater samples were collected when the following stabilization criteria were met for a minimum of three consecutive readings:

- 0.1 standard units for pH
- 5% for specific conductance
- $\pm 10\%$ for DO where $DO > 0.5$ mg/L; if $DO < 0.5$ milligrams per liter (mg/L), no stabilization criteria apply
- Turbidity measurements less than 5 nephelometric turbidity units (NTU)

Following well stabilization, unfiltered samples were collected directly into appropriately preserved laboratory supplied sample containers, placed in ice-packed coolers, and submitted to the laboratory following standard chain-of-custody protocol. Field information forms, generated directly from the SmarTroll®, and chain-of-custody records are included in Appendix A.

Field data and sampling notes for each monitoring well are recorded on the field information forms, which contains a description of the sampling equipment, sampling method, purge rate, field observations, and depth to water measurements at each monitoring location. These field data sheets are also included in Appendix A.

3.4 Surface Water Sampling

Due to the proximity of the engineered stream channel (also referred to as the unnamed tributary) west of AP-1 and the Chattahoochee River in the downgradient direction of the wells showing SSLs of arsenic, cobalt and molybdenum, installation of additional wells to horizontally characterize this area is infeasible. In response, Georgia Power collected surface water samples from the engineered stream channel and the Chattahoochee River November 10, 2020 and February 2, 2021. Surface water sample locations are shown on Figure 2.

3.5 Laboratory Analysis

Groundwater samples were collected during two groundwater monitoring events in the second half of 2020. During the August 2020 sampling event, wells were sampled and analyzed for Appendix IV monitoring parameters pursuant to 40 CFR §257.95(b). The September 2020 sampling event represents a semi-annual sampling event for AP-1 at Plant McDonough. Because AP-1 is currently in assessment monitoring, groundwater samples from wells in the detection monitoring program were analyzed for Appendix III and the detected Appendix IV monitoring parameters per 40 CFR § 257 and § 261. Tables 5A through 5D presents a tabulated summary of the August and September 2020 detection and assessment sample results. Results of surface water samples collected in November 2020 and February 2021 are presented on Tables 5E and 5F, respectively. Analytical methods used for monitoring parameters can be found in the analytical data reports in Appendix A.

Laboratory analyses for all events were performed by Pace Analytical Services, LLC (Pace) in Norcross, Georgia. Pace is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintains NELAP certification for all parameters analyzed for this project. Analytical data, chain-of-custody records, and NELAP certifications for the monitoring events are presented in Appendix A.

3.6 Quality Assurance and Quality Control

During each sampling event, quality assurance/quality control (QA/QC) samples were collected at a minimum rate of one sample per every 20 samples. QA/QC samples included equipment blanks (where non-dedicated

sampling equipment is used), field blanks, and duplicate samples. QA/QC sample data was evaluated during data validation (as described below) and is included in Appendix A.

Groundwater quality data in this report were independently validated in accordance with US EPA Region IV Data Validation Standard Operating Procedures (USEPA, 2011), National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017) and the analytical methods. Data validation generally consisted of reviewing sample integrity, holding times, laboratory method blanks, laboratory control samples, matrix spikes/matrix spike duplicate recoveries, relative percent differences (RPDs), laboratory and field duplicate RPDs, field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data per USEPA procedures and guidance. Data validation summaries are provided in Appendix A. Data have been deemed valid and appropriate for use in statistical analyses.

A value followed by a "J" flag in tables and laboratory reports indicate that the value is an estimated analyte concentration detected between the method detection limit (MDL) and the laboratory reporting limit (RL). The estimated value is positively identified but is below the lowest level that can be reliably achieved within specified limits of precision and accuracy under routine laboratory operating conditions.

4.0 STATISTICAL ANALYSIS

Statistical analysis of Appendix III and Appendix IV groundwater monitoring data was performed pursuant to §257.93-95 following the established statistical method for AP-1.

4.1 Statistical Method

The selected statistical method for AP-1 was developed in accordance with 40 CFR § 257.93(f), using methodology presented in Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance, March 2009, USEPA 530/R-09-007 (Unified Guidance; USEPA, 2009). The Sanitas groundwater statistical software was used to perform statistical analyses. Sanitas is a decision-support software package that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA Unified Guidance (2009) document.

The following table provides a summary of the statistical methodology used at AP-1 for the September 2020 monitoring event.

PLANT MCDONOUGH AP-1 STATISTICAL METHOD SUMMARY		
Monitoring Well Network	Upgradient Wells	DGWA-53, DGWA-70A, DGWA-71
	Downgradient Wells	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A, DGWC-69
CCR Monitoring Parameters	Appendix III (Detection Monitoring)	Boron, Calcium, Chloride, Fluoride, pH, Sulfate, TDS
	Appendix IV (Assessment Monitoring)	Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, Radium (226 + 228)
Statistical Methodology	Data Screening on Proposed Background	Evaluate outliers, trends, and seasonality when sufficient data are available.

PLANT MCDONOUGH AP-1 STATISTICAL METHOD SUMMARY		
	Statistical Limits	Interwell statistical limits will be applied on a constituent 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.
	Confidence Intervals	Used in Assessment and Corrective Action monitoring.
	No Statistical Testing	Statistical testing is not required for parameters with 100% non-detects.
	Verification Resample Plan (Optional)	1-of-2 with minimum of 8 samples per well for interwell testing. <ul style="list-style-type: none"> ▪ Initial statistical exceedance warrants independent resampling within 90 days. ▪ If resample passes, well/parameter is not considered 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.

The following guidance are also applicable to the statistical analytical method:

- Statistical analyses are not performed on analytes containing 100% non-detects (USPEA Unified Guidance, 2009, Chapter 6).
- When data contain less than or equal to 15% no-detects in background, simple substitution of one-half the RL is utilized in the statistical analysis. The RL utilized for non-detects is the practical quantitation limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, a non-detect adjustment such as the Kaplan-Meier or Regression on Order Statistics (ROS) method for adjustment of the mean and standard deviation will be used prior to constructing a parametric prediction limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

4.1.1 Appendix III Detection Monitoring Statistical Methods

Appendix III Statistical Analyses Groundwater monitoring data was statistically evaluated through the use of interwell prediction limits. The Sen’s Slope/Mann Kendall trend test was also performed to evaluate concentrations over time and determine whether concentrations are statistically increasing, decreasing, or stabilizing.

4.1.2 Appendix IV Assessment Monitoring Statistical Methods

Statistical analysis while in assessment monitoring is performed through the use of confidence intervals compared to a groundwater protection standard (GWPS). Parametric tolerance limits are used to calculate site specific background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. The background limits were then used when determining the 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, Rule Specified Limits (RSLs) have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), or molybdenum (0.100 mg/L). These criteria are not currently adopted by Georgia EPD.
- The respective background level for a constituent when the background level is higher than the MCL or rule identified GWPS.

USEPA revised the CCR Rule on July 30, 2018, updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR § 257.95(h)(2). Presently those updated GWPS have not yet been incorporated in the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, under EPD rules, background concentrations are considered when determining the GWPS for constituents where an MCL has not been established (or where background is higher than the MCL). Under the existing 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 federal and state rule requirements, GWPSs were established for statistical comparison of Appendix IV constituents. Table 4.1.2, Summary of Background Levels and GWPSs, presented below, summarizes the background limit established at each monitoring well and the GWPS established under State and Federal rules.

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV parameters in each downgradient well. Those confidence intervals were compared to the GWPS established for both the State and Federal rules. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. If there is an exceedance of the established standard, a statistically significant level (SSL) exceedance is identified.

TABLE 4.1.2 Summary of Background Levels and GWPSs

Analyte	Units	Maximum Contaminant Level (MCL)	Rule Specified Limit	Site Specific Background September 2020 ^[1]	Federal GWPS ^[2]	State GWPS ^[3]
Antimony	mg/L	0.006	--	0.003 ^[4]	0.006	0.006
Arsenic	mg/L	0.01	--	0.005 ^[4]	0.01	0.01
Barium	mg/L	2	--	0.19	2	2
Beryllium	mg/L	0.004	--	0.003 ^[4]	0.004	0.004
Cadmium	mg/L	0.005	--	0.0025 ^[4]	0.005	0.005
Chromium	mg/L	0.1	--	0.01 ^[4]	0.1	0.1
Cobalt	mg/L	NA	0.006	0.032	0.032	0.032
Fluoride	mg/L	4	--	0.42	4	4
Lead	mg/L	NA	0.015	0.005 ^[4]	0.015	0.005

TABLE 4.1.2 Summary of Background Levels and GWPSs

Analyte	Units	Maximum Contaminant Level (MCL)	Rule Specified Limit	Site Specific Background September 2020 ^[1]	Federal GWPS ^[2]	State GWPS ^[3]
Lithium	mg/L	NA	0.04	0.03 ^[4]	0.04	0.03
Mercury	mg/L	0.002	--	0.0005 ^[4]	0.002	0.002
Molybdenum	mg/L	NA	0.1	0.041	0.1	0.041
Radium (226 + 228)	pCi/L	5	--	5.92	5.92	5.92
Selenium	mg/L	0.05	--	0.01 ^[4]	0.05	0.05
Thallium	mg/L	0.002	--	0.001 ^[4]	0.002	0.002

Notes:

mg/L = milligrams per liter; pCi/L = picocuries per liter; NA = Not Available

- [1] The background limits are used when determining the groundwater protection standard (GWPS) under 40 CFR § 257.95(h) and 391-3-4-.10(6)(a).
- [2] Under Federal CCR rules, the GWPS is: (i) the MCL or RSL, (ii) where the MCL or RSL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL or RSL.
- [3] Under existing EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL.
- [4] The background tolerance limit (TL) used to evaluate GWPS for this analyte equals the laboratory specified reporting limit (RL). Per the Statistical Analysis Plan, and in accordance with the Unified Guidance, a non-parametric limit approach was used since the data set contains greater than 50% non-detect results for this analyte. Under this approach, the TL equals the highest value reported, for which is the laboratory RL. We also note that the values reported herein have been updated from the previously established GWPS which was determined based on estimated data. The modified GWPS also reflects additional outlier identification.

A summary table of the statistical results accompanies the prediction limits for Appendix III and confidence intervals for Appendix IV in Appendix D. The background period for statistical analyses includes data through September 2020. Tolerance limits for confidence interval calculations are updated to include current data. Due to varying reporting limits in background, the most recent reporting limit is used when data is not reported above detection limits. This results in a more appropriate statistical test.

4.2 Statistical Analysis Results

Analytical data from September 2020 at AP-1 have been statistically analyzed in accordance with the site’s certified Statistical Analysis Plan. Verification resampling to confirm initial SSIs was not performed; therefore, initial SSIs are considered verified. The statistical results are included in Appendix D.

4.2.1 September 2020 Appendix III Statistical Results

Based on the statistical results (Appendix D), SSIs of boron, calcium, chloride, pH, sulfate, and total dissolved solids were identified following the September 2020 assessment monitoring event. A detailed list of the noted exceedances is presented in Appendix D.

Based on review of the Appendix III statistical analysis (Appendix D), Appendix III constituents have not returned to background levels and assessment monitoring will continue pursuant to 40 CFR § 257.95(f)

4.2.2 September 2020 Appendix IV Statistical Results

Analytical data from the September 2020 monitoring event at AP-1 have been statistically analyzed in accordance with the certified statistical analysis method. Review of the Sanitas results indicates that using the GWPS established according to both 40 CFR § 257.95(h) and 391-3-4-.10(6)(a), the following SSLs were identified:

AP-1 Confidence Interval Statistically Significant Level Exceedances	
Appendix IV Parameter	AP-1 Monitoring Well
Arsenic	DGWC-69
Cobalt	DGWC-40
Molybdenum	DGWC-68A

5.0 ASSESSMENT MONITORING AND DELINEATION STATUS

Specific details regarding the delineation status at AP-1 is discussed in the *Semi-Annual Remedy Selection and Design Progress Report* (Appendix E). Limited groundwater analytical data are available for assessment monitoring wells. In accordance with Section 21.1.1 of the Unified Guidance (USEPA, 2009), four independent data is the minimum population size recommended to construct confidence intervals required to assess SSLs for Appendix IV constituents. At the time of this report, the data set for delineation wells is limited to less than four independent datums and therefore not subject to the statistical analyses.

As a conservative approach, Georgia Power elected to collect surface water samples to supplement horizontal delineation. Due to the proximity of the engineered stream channel (also identified as the unnamed tributary) and the Chattahoochee River in the downgradient direction of the wells showing SSLs of arsenic (DGWC-69), molybdenum (DGWC-68A) and cobalt (DGWC-40), installation of additional wells to horizontally characterize this area is infeasible. As such, surface water samples were collected from both the engineered stream channel and the Chattahoochee River in November 2020 and again in February 2021. Molybdenum SSL identified in DGWC-68A is horizontally delineated by surface water samples collected at UT-03 location and downstream locations (UT01-DS and CR+0.4). Arsenic SSL identified in DGWC-69 is horizontally delineated by surface water samples collected at UT-02 location and downstream locations (UT-03, UT01-DS and CR+0.4). Cobalt SSL identified in DGWC-40 is horizontally delineated by surface water samples collected at CR-0.1 and additional downstream locations (CR+0.2 and CR+0.4). The results from surface water samples as presented in Tables 5E and 5F, indicate that arsenic and molybdenum are not detected in the engineered stream channel and cobalt is not detected in the Chattahoochee River. Based on data collected to date, there are no impacts to surface water by constituents with SSLs at AP-1 at Plant McDonough and the horizontal delineation of target SSL constituents are complete.

Vertical delineation of arsenic at monitoring well DGWC-69 and molybdenum at DGWC-68A are currently in progress. Deeper delineation wells near DGWC-68A and DGWC-69 are planned for installation in March-April 2021.

6.0 ASSESSMENT OF CORRECTIVE MEASURES

Following the requirements of 40 CFR § 257.96, Plant McDonough has initiated an Assessment of Corrective Measures (ACM). Notification of this action was placed in the operating record on July 9, 2020. The ACM (Golder, 2020d) has been amended to evaluate arsenic SSL in February 2021.

In accordance with 40 CFR § 257.97(a) a remedy selection report will be prepared and submitted concurrent with semi-annual groundwater monitoring reports to document results associated with additional data collection, and present progress toward selection and design of a groundwater remedy. A copy of the report is included as Appendix E. At least 30 days prior to the selection of remedy or remedies, a public meeting to discuss the results of the corrective measures assessment will be held pursuant to 40 CFR 257.96(e).

The *Semi-Annual Remedy Selection and Design Progress Report* that is included as Appendix E includes the following information:

- i) An amendment to the ACM to include evaluation of arsenic in addition to cobalt and molybdenum.
- ii) A summary of the closure status for AP-1 as it relates to source control.
- iii) Summary of work completed to achieve delineation of constituents exceeding groundwater protection standards and a summary of data collected to date towards remedy selection.

7.0 MONITORING PROGRAM STATUS

Statistical evaluations of the groundwater monitoring data for AP-1 confirms SSIs of Appendix III groundwater monitoring parameters above background and SSLs of Appendix IV groundwater monitoring parameters above the established GWPS. Based on results from the September 2020 sampling event, AP-1 will remain in assessment monitoring. An assessment of corrective measures has been initiated following the provisions of 40 CFR § 257.96. Pursuant to 40 CFR 257.195(g)(1)(iv), the additional delineation wells and surface water monitoring locations may continue to be sampled as part of the ongoing semi-annual assessment monitoring program.

8.0 CONCLUSIONS AND FUTURE ACTIONS

This *2020 Semi-Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Plant McDonough-Atkinson - Ash Pond 1 (AP-1)* was prepared to fulfill the requirements of USEPA CCR rule 40 CFR 257 Subpart D and Georgia EPD rule 391-3-4-.10.

The groundwater flow direction interpreted during the August and September 2020 events is consistent with historical evaluations and the monitoring well network continues to effectively monitor the uppermost aquifer in the vicinity of AP-1.

Review of analytical results and statistical analyses developed for the site indicates confirmed SSIs of Appendix III above background and SSLs of Appendix IV above the established GWPS. In accordance with 40 CFR § 257.96, Georgia Power has initiated an assessment of corrective measures study for the identified SSLs.

Based on the findings presented herein, Plant McDonough will continue with assessment groundwater monitoring and reporting. The next sampling event is tentatively scheduled for the March of 2021.

9.0 REFERENCES

Golder, 2019, *2019 First Annual Groundwater Monitoring and Corrective Action Report*, Georgia Power Company – Plant McDonough-Atkinson Ash Pond 1, August 1, 2019.

Golder, 2020a, *Hydrogeologic Assessment Report*, Georgia Power Company – Plant McDonough-Atkinson, December 12, 2020.

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Tables & Figures

TABLE 1A
DETECTION AND ASSESSMENT MONITORING NETWORK SUMMARY
 Georgia Power Company - Plant McDonough
 Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
ASH POND 1 (AP-1) DETECTION MONITORING WELL NETWORK											
DGWA-53	Upgradient	Upper Bedrock	1393472.8	2201668.8	844.26	841.3	28.9	823.7	813.7	10	9/24/2016
DGWA-70A	Upgradient	Overburden	1390481.4	2200591.6	808.52	805.8	59.3	756.9	746.9	10	5/10/2017
DGWA-71	Upgradient	Overburden	1393963.3	2201714.8	863.84	861.2	43.8	827.8	817.8	10	2/28/2017
DGWC-37	Downgradient	Overburden	1390482.2	2200919.8	766.21	763.7	39.7	734.4	724.4	10	11/28/2012
DGWC-38	Downgradient	Overburden	1390362.7	2201148.6	757.43	754.7	25.0	740.0	730.0	10	11/29/2012
DGWC-39	Downgradient	Overburden	1390303.6	2201540.1	759.89	757.0	21.2	746.2	736.2	10	11/6/2012
DGWC-40	Downgradient	Overburden	1390625.7	2201825.9	779.06	776.2	34.9	751.7	741.7	10	11/5/2012
DGWC-67	Downgradient	Overburden	1390953.8	2200830.7	766.70	767.0	56.3	720.7	710.7	10	3/14/2017
DGWC-68A	Downgradient	Overburden	1391301.2	2200734.9	765.33	765.4	29.8	746.0	736.0	10	4/20/2017
DGWC-69	Downgradient	Overburden	1391585.0	2200657.1	763.75	764.0	24.3	749.7	739.7	10	3/16/2017
ASH POND 1 (AP-1) ASSESSMENT MONITORING NETWORK											
B-100	Downgradient	Overburden	1390254.8	2202242.1	777.95	775.3	44.8	740.5	730.5	10	7/8/2020
B-105D	Downgradient	Bedrock	1390633.9	2201832.7	779.01	776.0	70	716.0	706.0	10	10/19/2020
B-110D	Downgradient	Bedrock	1391294.0	2200734.6	764.61	764.7	63	711.7	701.7	10	11/17/2020
ASH POND 2 and ASH PONDS 3/4 (AP-2, 3/4) DETECTION MONITORING WELL NETWORK											
DGWA-53	Upgradient	Upper Bedrock	1393472.8	2201668.8	844.26	841.3	28.9	823.7	813.7	10	9/24/2016
DGWA-70A	Upgradient	Overburden	1390481.4	2200591.6	808.52	805.8	59.3	756.9	746.9	10	5/10/2017
DGWA-71	Upgradient	Overburden	1393963.3	2201714.8	863.84	861.2	43.8	827.8	817.8	10	2/28/2017
DGWC-2	Downgradient	Overburden/Upper Bedrock	1393958.0	2202119.5	850.88	848.3	49.0	809.6	799.6	10	10/2/2012
DGWC-4	Downgradient	Overburden	1394171.5	2202662.4	814.85	812.1	45.0	777.4	767.4	10	10/3/2012
DGWC-5	Downgradient	Overburden/Upper Bedrock	1394306.3	2202965.1	791.75	788.7	30.0	769.0	759.0	10	10/4/2012
DGWC-8	Downgradient	Overburden	1394322.2	2203882.1	826.38	824.1	49.1	785.4	775.4	10	10/10/2012
DGWC-9	Downgradient	Overburden	1394055.9	2204170.0	824.35	821.8	30.0	802.2	792.2	10	10/10/2012
DGWC-10	Downgradient	Overburden	1393818.3	2204201.1	823.55	820.9	45.4	785.9	775.9	10	10/11/2012
DGWC-11	Downgradient	Overburden	1393547.1	2204166.2	800.57	798.1	49.1	759.3	749.3	10	10/15/2012
DGWC-12	Downgradient	Overburden	1393149.4	2204128.3	773.86	771.2	25.1	756.5	746.5	10	10/15/2012
DGWC-13	Downgradient	Overburden	1392881.1	2204084.6	794.10	791.3	43.8	757.9	747.9	10	11/29/2012
DGWC-14	Downgradient	Overburden/Upper Bedrock	1392574.2	2204013.3	792.40	789.8	34.3	765.9	755.9	10	12/18/2012

TABLE 1A
DETECTION AND ASSESSMENT MONITORING NETWORK SUMMARY
 Georgia Power Company - Plant McDonough
 Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
DGWC-15	Downgradient	Overburden	1392544.1	2203679.0	824.50	821.5	67.1	764.8	754.8	10	11/29/2012
DGWC-17	Downgradient	Overburden	1392645.6	2203051.0	837.05	834.2	44.5	800.0	790.0	10	1/9/2013
DGWC-19	Downgradient	Overburden	1392342.6	2202601.0	825.46	822.9	39.8	793.5	783.5	10	3/12/2013
DGWC-20	Downgradient	Overburden	1392164.5	2202315.6	822.14	819.8	39.7	790.7	780.7	10	3/5/2013
DGWC-21	Downgradient	Overburden/Upper Bedrock	1392067.5	2202063.5	816.28	813.5	69.0	754.9	744.9	10	10/31/2012
DGWC-22	Downgradient	Upper Bedrock	1392126.3	2201791.9	816.59	813.7	60.0	764.0	754.0	10	10/25/2012
DGWC-23	Downgradient	Upper Bedrock	1392239.7	2201582.0	818.37	815.7	60.1	765.9	755.9	10	10/25/2012
DGWC-42	Downgradient	Overburden	1391327.8	2201870.2	804.68	802.0	50.4	762.1	752.1	10	11/12/2012
DGWC-47	Downgradient	Overburden/Upper Bedrock	1391553.8	2202610.5	797.45	794.3	28.8	775.9	765.9	10	6/23/2016
DGWC-48	Downgradient	Overburden/Upper Bedrock	1391314.6	2202290.2	788.33	785.2	30.0	765.6	755.6	10	6/22/2016
ASH POND 2 and ASH PONDS 3/4 (AP-2, 3/4) ASSESSMENT MONITORING WELL NETWORK											
B-56	Downgradient	Overburden	1393957.9	2204187.8	823.59	821.0	45.0	786.4	776.4	10	10/3/2016
B-77	Downgradient	Overburden	1390948.7	2202942.0	776.86	777.1	42	745.1	735.1	10	9/17/2019
B-83	Downgradient	Overburden	1390735.5	2202695.6	776.98	777.1	48.6	738.5	728.5	10	9/30/2019
B-88	Downgradient	Overburden	1394401.1	2203738.3	820.07	817.0	72	755.0	745.0	10	11/15/2019
B-93	Downgradient	Overburden	1394348.7	2202946.7	789.07	789.2	28.9	770.3	760.3	10	12/12/2019
B-101D	Downgradient	Bedrock	1394063.3	2204167.1	824.29	821.2	74.9	756.3	746.3	10	11/12/2020
B-102D	Downgradient	Bedrock	1393828.2	2204199.0	823.42	820.6	84.4	745.2	736.2	9	11/10/2020
B-104D	Downgradient	Bedrock	1391317.9	2202297.4	787.90	785.3	60	735.3	725.3	10	10/20/2020
B-106D	Downgradient	Bedrock	1394328.3	2203869.6	826.21	823.5	79.4	754.1	744.1	10	11/13/2020
B-107D	Downgradient	Bedrock	1392333.6	2202597.0	823.38	820.6	85.1	745.5	735.5	10	10/28/2020
B-108D	Downgradient	Bedrock	1392155.6	2202313.1	821.13	818.4	79	749.4	739.4	10	10/27/2020
B-109D	Downgradient	Bedrock	1393956.4	2202127.0	850.73	847.8	99.4	759.4	748.4	11	10/31/2020
B-111D	Downgradient	Bedrock	1394302.6	2202956.5	791.87	789.1	84.15	714.9	704.9	10	11/3/2020

Notes:

1. bgs = below ground surface
2. Coordinate System: NAD 1983 State Plane Georgia West (U.S. feet)
3. NAD - North American Datum; NAVD - North American Vertical Datum

TABLE 1B
PIEZOMETER NETWORK SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
PIEZOMETERS											
B-3	Downgradient	Overburden/Upper Bedrock	1394045.1	2202411.5	837.78	835.0	37.0	808.3	798.3	10	10/3/2012
B-6	Downgradient	Overburden	1394419.5	2203266.5	789.47	786.5	35.4	761.5	751.5	10	10/9/2012
B-7	Downgradient	Overburden	1394374.6	2203596.1	809.16	806.1	25.2	791.3	781.3	10	10/9/2012
B-16	Downgradient	Overburden	1392595.1	2203315.4	826.47	823.6	43.7	790.2	780.2	10	12/19/2012
B-18	Downgradient	Overburden	1392521.0	2202875.5	826.56	823.9	32.6	801.5	791.5	10	1/10/2013
B-24	Downgradient	Upper Bedrock	1392479.9	2201450.0	822.11	819.3	79.1	751.0	741.0	10	10/24/2012
B-25	Downgradient	Upper Bedrock	1392813.3	2201502.7	836.54	833.5	54.8	789.1	779.1	10	10/24/2012
B-26	Downgradient	Upper Bedrock	1393105.6	2201550.4	853.60	850.6	49.3	811.7	801.7	10	10/23/2012
B-28	Downgradient	Overburden/Upper Bedrock	1391967.4	2201679.2	816.08	813.3	69.4	754.3	744.3	10	10/31/2012
B-29	Downgradient	Overburden	1391890.0	2201422.0	816.43	813.5	54.4	769.4	759.4	10	1/11/2013
B-31	Downgradient	Upper Bedrock	1392034.3	2200928.5	797.47	794.9	45.1	760.2	750.2	10	1/22/2013
B-41	Downgradient	Overburden	1390920.8	2201751.9	795.20	792.4	60.0	743.0	733.0	10	11/14/2012
B-50	Downgradient	Overburden	1391657.1	2201841.0	809.67	809.2	36.0	784.4	774.4	10	6/24/2016
B-51	Downgradient	Overburden	1390501.2	2200906.5	765.92	763.3	65.0	708.3	698.3	10	6/27/2016
B-52	Downgradient	Overburden	1392308.3	2201314.8	822.89	820.3	50.0	781.4	771.4	10	9/28/2016
B-54	Downgradient	Overburden/Upper Bedrock	1394423.5	2203140.7	785.46	782.6	34.2	758.8	748.8	10	9/26/2016
B-55	Downgradient	Overburden	1394142.6	2204147.9	825.12	822.9	52.0	781.9	771.9	10	9/22/2016
B-57	Downgradient	Upper Bedrock	1391396.3	2202736.9	789.04	786.0	50.5	746.0	736.0	10	9/24/2016
B-58	Downgradient	Overburden	1391125.7	2202426.5	788.17	785.2	45.0	750.7	740.7	10	9/23/2016
B-59	Downgradient	Overburden/Upper Bedrock	1394349.1	2203001.1	788.00	785.5	30.3	765.3	755.3	10	9/23/2016
B-60	Downgradient	Overburden	1391100.7	2202881.6	782.13	779.2	49.8	739.9	729.9	10	9/29/2016
B-61	Downgradient	Overburden	1390957.8	2202505.8	782.09	779.0	51.9	737.5	727.5	10	9/29/2016
B-62	Downgradient	Upper Bedrock	1389828.1	2201811.2	760.08	760.4	39.9	730.7	720.7	10	10/4/2016
B-63	Downgradient	Overburden	1390999.1	2202978.1	777.10	777.3	46.0	741.8	731.8	10	10/6/2016
B-64	Downgradient	Overburden	1394381.9	2203031.3	785.83	786.1	30.4	766.1	756.1	10	11/2/2016
B-65	Downgradient	Overburden/Upper Bedrock	1394381.2	2204050.8	821.95	822.3	45.4	787.9	777.9	10	11/15/2016
B-66	Downgradient	Overburden	1393858.2	2204277.5	815.90	813.3	55.3	768.3	758.3	10	11/16/2016
B-68	Downgradient	Overburden	1391298.2	2200714.2	758.68	759.0	18.0	751.0	741.0	10	3/16/2017

TABLE 1B
PIEZOMETER NETWORK SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
B-72	Downgradient	Overburden	1391241.2	2200724.9	758.46	758.52	21.9	746.6	736.6	10	4/19/2017
B-73	Downgradient	Overburden	1391351.5	2200698.5	759.21	759.23	15.8	753.5	743.5	10	4/19/2017
B-74	Downgradient	Overburden	1391278.9	2200666.3	759.06	759.21	16.5	748.2	743.2	5	4/25/2017
B-78	Downgradient	Overburden/Upper Bedrock	1394328.2	2202958.2	790.75	788.0	30	768.0	758.5	10	9/22/2019
B-79	Downgradient	Overburden	1394458.6	2203223.0	788.66	785.9	34.93	761.0	751.5	10	9/21/2019
B-80	Downgradient	Overburden	1394372.6	2203533.9	804.47	801.8	30	782.0	772.5	10	9/20/2019
B-81	Downgradient	Overburden	1394364.9	2203741.1	820.56	817.7	50	778.5	768.5	10	9/22/2019
B-82	Downgradient	Overburden	1393750.0	2204258.1	810.07	807.5	45	773.0	763.0	10	9/21/2019
B-84	Downgradient	Overburden	1390411.9	2202241.9	776.34	776.6	49.1	737.5	727.5	10	10/1/2019
B-85	Downgradient	Overburden/Upper Bedrock	1394433.4	2203134.5	782.54	782.7	34.5	758.5	748.5	10	11/18/2019
B-86	Downgradient	Overburden/Upper Bedrock	1394480.0	2203206.6	784.29	784.6	34.1	760.5	750.5	10	11/18/2019
B-87	Downgradient	Overburden	1394401.9	2203531.3	803.37	800.4	42	768.7	758.7	10	11/17/2019
B-89	Downgradient	Upper Bedrock	1394398.4	2204049.4	822.36	822.6	49.5	783.1	773.1	10	11/19/2019
B-90	Downgradient	Overburden	1394501.0	2203212.6	784.00	784.2	33.4	760.8	750.8	10	12/10/2019
B-91	Downgradient	Overburden	1394447.1	2203123.9	782.98	783.1	34.6	758.5	748.5	10	12/11/2019
B-92	Downgradient	Overburden	1394392.7	2203026.7	785.08	785.3	24.6	770.7	760.7	10	12/11/2019
B-94	Downgradient	Overburden	1394402.0	2203513.7	801.74	799.2	45.24	764.6	754.6	10	1/23/2020
B-95	Downgradient	Overburden	1394518.6	2203167.7	784.00	784.3	33.3	761.3	751.3	10	2/11/2020
B-96	Downgradient	Overburden	1394478.7	2203099.3	784.92	785.3	33.1	762.2	752.2	10	2/10/2020
B-97	Downgradient	Overburden/Upper Bedrock	1394430.0	2203008.3	786.29	786.6	31	765.3	755.3	10	2/11/2020
B-98	Downgradient	Overburden	1394392.5	2202934.0	789.67	789.8	19.4	780.8	770.8	10	2/10/2020
B-99	Downgradient	Overburden	1394524.2	2203084.5	782.39	782.6	12.3	775.3	770.3	5	7/7/2020
B-103D	Downgradient	Bedrock	1391542.8	2202615.0	795.96	793.8	70.0	733.8	723.8	10	10/15/2020

Notes:

1. bgs = below ground surface
2. Coordinate System: NAD 1983 State Plane Georgia West (U.S. feet)
3. NAD - North American Datum; NAVD - North American Vertical Datum

TABLE 2
GROUNDWATER SAMPLING EVENT SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Hydraulic Location	Summary of Sampling Events		Status of Monitoring Well
		August 2020	September 2020	
Purpose of Sampling Event		Annual Appendix IV Assessment	Detection/ Assessment	
ASH POND 1 (AP-1) MONITORING WELL NETWORK				
DGWA-53	Upgradient	Annual 02	Assessment 03	Assessment
DGWA-70A	Upgradient	Annual 02	Assessment 03	Assessment
DGWA-71	Upgradient	Annual 02	Assessment 03	Assessment
DGWC-37	Downgradient	Annual 02	Assessment 03	Assessment
DGWC-38	Downgradient	Annual 02	Assessment 03	Assessment
DGWC-39	Downgradient	Annual 02	Assessment 03	Assessment
DGWC-40	Downgradient	Annual 02	Assessment 03	Assessment
DGWC-67	Downgradient	Annual 02	Assessment 03	Assessment
DGWC-68A	Downgradient	Annual 02	Assessment 03	Assessment
DGWC-69	Downgradient	Annual 02	Assessment 03	Assessment

Notes:

1. Annual ## = Annual Appendix IV Scan
2. Assessment ## = Assessment Monitoring Event Number

TABLE 3
SUMMARY OF GROUNDWATER ELEVATIONS
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Top of Casing Elevation (feet)	Top of Casing Elevation (feet) August 2020	Groundwater Elevation (feet)		
			8/10/2020	9/21/2020	11/3/2020
ASH POND 1 (AP-1) MONITORING WELLS					
DGWA-53	850.74	844.26	829.41	830.68	830.87
DGWA-70A	808.60	808.52	768.95	762.11	768.37
DGWA-71	863.95	863.84	835.74	835.26	835.91
DGWC-37	766.19	766.21	752.13	752.92	752.91
DGWC-38	757.44	757.43	750.97	751.54	751.70
DGWC-39	759.67	759.89	751.21	752.88	753.63
DGWC-40	779.07	779.06	760.12	761.56	762.55
DGWC-67	766.76	766.70	756.40	757.31	757.35
DGWC-68A	765.61	765.33	755.00	755.53	755.42
DGWC-69	763.82	763.75	757.37	758.01	758.10
ASH POND 2 and ASH PONDS 3/4 (AP-2, 3/4) MONITORING WELLS					
DGWA-53	850.74	844.26	829.41	830.68	830.87
DGWA-70A	808.60	808.52	768.95	762.11	768.37
DGWA-71	863.95	863.84	835.74	835.26	835.91
DGWC-2	850.93	850.88	820.86	820.53	820.83
DGWC-4	814.87	814.85	791.48	791.43	792.04
DGWC-5	791.84	791.75	782.15	782.85	782.85
DGWC-8	826.50	826.38	793.33	793.57	793.85
DGWC-9	824.39	824.35	799.07	800.14	801.59
DGWC-10	823.60	823.55	791.09	793.53	795.37
DGWC-11	800.64	800.57	783.81	786.33	788.68
DGWC-12	773.90	773.86	763.51	765.13	765.11
DGWC-13	793.90	794.10	760.55	761.87	760.77
DGWC-14	792.36	792.40	771.30	771.31	772.97
DGWC-15	824.53	824.50	785.05	784.94	785.33
DGWC-17	837.10	837.05	804.92	804.51	804.59
DGWC-19	825.53	825.46	801.16	801.20	801.51
DGWC-20	822.16	822.14	798.00	799.24	800.39
DGWC-21	816.33	816.28	796.96	798.78	800.10
DGWC-22	816.64	816.59	796.03	796.29	797.34
DGWC-23	818.59	818.37	797.89	798.92	799.67
DGWC-42	804.73	804.68	772.46	769.51	774.54
DGWC-47	797.50	797.45	777.61	780.49	781.06
DGWC-48	788.34	788.33	771.83	772.89	774.29

TABLE 3
SUMMARY OF GROUNDWATER ELEVATIONS
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Top of Casing Elevation (feet)	Top of Casing Elevation (feet) August 2020	Groundwater Elevation (feet)		
			8/10/2020	9/21/2020	11/3/2020
PIEZOMETERS					
B-3	837.82	837.78	803.08	802.55	802.66
B-6	789.49	789.47	783.87	784.14	784.17
B-7	809.24	809.16	787.35	786.75	786.46
B-16	826.50	826.47	795.42	795.25	795.82
B-18	826.54	826.56	804.91	804.71	805.23
B-24	822.27	822.11	803.11	802.87	803.49
B-25	836.62	836.54	818.43	821.53	822.84
B-26	853.67	853.60	826.64	825.55	827.05
B-28	816.10	816.08	786.05	786.95	787.92
B-29	816.45	816.43	788.57	788.90	790.08
B-31	797.42	797.47	763.94	764.01	764.21
B-41	795.22	795.20	768.70	769.91	770.89
B-50	809.78	809.67	781.58	784.77	786.78
B-51	765.93	765.92	752.66	753.37	753.42
B-52	823.22	822.89	796.63	795.34	795.87
B-54	785.59	785.46	779.52	779.86	779.96
B-55	825.11	825.12	802.40	804.99	805.72
B-56	823.70	823.59	794.43	795.39	796.80
B-57	789.22	789.04	769.93	770.02	771.62
B-58	788.20	788.17	767.77	767.76	769.52
B-59	788.16	788.00	780.39	780.72	780.85
B-60	782.12	782.13	750.42	751.22	753.80
B-61	782.03	782.09	761.75	762.24	764.58
B-62	763.34	760.08	742.48	743.11	749.24
B-63	777.15	777.10	747.56	749.12	751.65
B-64	786.02	785.83	779.70	780.14	780.27
B-65	822.02	821.95	803.50	803.40	804.50
B-66	815.96	815.90	793.69	796.72	797.58
B-68	758.73	758.68	754.72	755.19	755.09
B-72	n/a	758.46	755.04	754.83	755.35
B-73	n/a	759.206	754.72	755.26	755.12
B-74	n/a	759.06	754.90	754.68	754.59
B-76	760.31	760.53	745.42	745.11	750.04
B-77	776.75	776.86	746.42	748.68	750.96
B-78	790.65	790.75	780.25	780.84	780.90
B-79	788.55	788.66	781.84	782.14	782.21
B-80	804.45	804.47	787.10	786.62	786.37

TABLE 3
SUMMARY OF GROUNDWATER ELEVATIONS
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Top of Casing Elevation (feet)	Top of Casing Elevation (feet) August 2020	Groundwater Elevation (feet)		
			8/10/2020	9/21/2020	11/3/2020
PIEZOMETERS					
B-81	820.51	820.56	788.63	787.86	787.48
B-82	809.98	810.07	790.70	794.12	795.37
B-83	776.89	776.98	744.88	745.99	750.59
B-84	776.24	776.34	741.33	743.85	749.64
B-85	782.67	782.54	779.54	775.63	779.94
B-86	784.40	784.29	782.34	777.24	782.77
B-87	803.54	803.37	786.87	786.57	786.41
B-88	820.11	820.07	787.50	786.77	786.47
B-89	822.50	822.36	799.35	799.26	800.36
B-90	784.18	784.00	781.14	782.44	782.50
B-91	783.07	782.98	779.29	779.60	779.67
B-92	785.22	785.08	779.78	780.32	780.40
B-93	789.14	789.07	781.35	782.55	782.67
B-94	801.90	801.74	786.71	786.49	786.26
B-95	784.16	784.00	781.58	781.89	781.92
B-96	785.06	784.92	779.37	779.82	779.85
B-97	786.46	786.29	780.26	781.29	780.99
B-98	789.58	789.67	780.52	782.01	782.15
B-99	782.39	782.39	778.57	778.97	778.99
B-100	777.95	777.95	742.31	742.78	749.14

Notes:

1. Elevation data recorded in feet North American Vertical Datum (NAVD)
2. NM = Not Measured
3. Updated survey data for all wells provided by Metro Engineering in August 2020. Groundwater elevations prior to August 2020 were calculated using the original Top of Casing Elevations.

TABLE 4A
HORIZONTAL GROUNDWATER FLOW VELOCITY CALCULATIONS - AUGUST 2020

Georgia Power Company - Plant McDonough
Atlanta, GA

Flow Paths	Groundwater Elevation (feet msl)	Δh (feet) ¹	Δl (feet) ²	Hydraulic Gradient ($\Delta h/\Delta l$) ³	Average Hydraulic Conductivity, K (centimeter per second) ⁵	Assumed Effective Porosity (n_e) ⁶	Average Linear Groundwater Velocity	
							(feet per day) ⁴	(feet per year) ⁴
ASH POND 1 (AP-1)								
B-29/DGWC-68A	788.57	33.57	900	0.037	0.00084	0.2	0.44	162
	755.00							
B-28/DGWC-37	786.05	33.92	1700	0.020	0.00084	0.2	0.24	87
	752.13							
B-50/DGWC-39	781.58	30.37	1400	0.022	0.00084	0.2	0.26	94
	751.21							

Notes:

1. Δh = Change in groundwater elevation
2. Δl = Distance along flow path
3. $l = \Delta h / \Delta l$
4. Velocity = $(l * K)/n_e$
5. Hydraulic conductivity based on historic aquifer performance tests
6. Assumed effective porosities for overburden was based on the default values recommended by USEPA for a silty sand-type soil (1996). Assumed effective porosity for upper bedrock was derived from Daniel and Dahlen (2002) and Dowd and Marshall (1995).

**TABLE 4B
HORIZONTAL GROUNDWATER FLOW VELOCITY CALCULATIONS - SEPTEMBER 2020**

**Georgia Power Company - Plant McDonough
Atlanta, GA**

Flow Paths	Groundwater Elevation (feet msl)	Δh (feet) ¹	Δl (feet) ²	Hydraulic Gradient ($\Delta h/\Delta l$) ³	Average Hydraulic Conductivity, K (centimeter per second) ⁵	Assumed Effective Porosity (n_e) ⁶	Average Linear Groundwater Velocity	
							(feet per day) ⁴	(feet per year) ⁴
ASH POND 1 (AP-1)								
B-29/DGWC-68A	788.9	33.37	900	0.037	0.00084	0.2	0.44	161
	755.53							
B-28/DGWC-37	786.95	34.03	1700	0.020	0.00084	0.2	0.24	87
	752.92							
B-50/DGWC-39	784.77	31.89	1400	0.023	0.00084	0.2	0.27	99
	752.88							

Notes:

1. Δh = Change in groundwater elevation
2. Δl = Distance along flow path
3. $l = \Delta h / \Delta l$
4. Velocity = $(l * K)/n_e$
5. Hydraulic conductivity based on historic aquifer performance tests
6. Assumed effective porosities for overburden was based on the default values recommended by USEPA for a silty sand-type soil (1996). Assumed effective porosity for upper bedrock was derived from Daniel and Dahlen (2002) and Dowd and Marshall (1995).

TABLE 5A
ANALYTICAL DATA SUMMARY
Ash Pond 1 - August 2020
Georgia Power Company - Plant McDonough
Atlanta, GA

Analyte	Units	Well ID									
		DGWA-53	DGWA-70A	DGWA-71	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
		8/13/2020	8/11/2020	8/11/2020	8/13/2020	8/13/2020	8/13/2020	8/13/2020	8/13/2020	8/13/2020	8/13/2020
Appendix III											
BORON, TOTAL	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
CALCIUM, TOTAL	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
CHLORIDE, TOTAL	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
FLUORIDE, TOTAL	mg/L	0.062 J	<0.050	<0.050	0.068 J	0.060 J	0.076 J	0.16	<0.050	0.076 J	0.084 J
pH	S.U.	6.17	5.86	5.96	6.34	6.05	6.39	4.65	6.28	6.63	6.26
SULFATE, TOTAL	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
TOTAL DISSOLVED SOLIDS	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Appendix IV											
ANTIMONY, TOTAL	mg/L	0.00030 J	0.0013 J	0.0018 J	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	0.0019 J
ARSENIC, TOTAL	mg/L	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	0.029
BARIUM, TOTAL	mg/L	0.046	0.041	0.026	0.088	0.032	0.089	0.018	0.095	0.088	0.13
BERYLLIUM, TOTAL	mg/L	<0.000046	0.00013 J	0.00011 J	0.00010 J	<0.000046	<0.000046	0.0033	<0.000046	<0.000046	0.000063 J
CADMIUM, TOTAL	mg/L	<0.00012	<0.00012	<0.00012	<0.00012	0.00021 J	<0.00012	0.00084 J	0.00015 J	0.00021 J	<0.00012
CHROMIUM, TOTAL	mg/L	<0.00055	0.0016 J	0.00060 J	0.00058 J	<0.00055	<0.00055	0.00072 J	<0.00055	<0.00055	<0.00055
COBALT, TOTAL	mg/L	0.0051	0.0012 J	<0.00038	<0.00038	0.0014 J	0.0060	0.044	0.0015 J	<0.00038	<0.00038
FLUORIDE, TOTAL	mg/L	0.062 J	<0.050	<0.050	0.068 J	0.060 J	0.076 J	0.16	<0.050	0.076 J	0.084 J
LEAD, TOTAL	mg/L	<0.000036	0.00030 J	<0.000036	<0.000036	<0.000036	<0.000036	0.000049 J	0.000056 J	<0.000036	0.000059 J
LITHIUM, TOTAL	mg/L	0.0085 J	0.0019 J	0.0015 J	0.0023 J	0.0028 J	<0.00081	0.0022 J	0.0044 J	<0.00081	0.0031 J
MERCURY, TOTAL	mg/L	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078
MOLYBDENUM, TOTAL	mg/L	0.012	<0.00069	<0.00069	<0.00069	0.00098 J	<0.00069	<0.00069	<0.00069	0.19	0.011
RADIUM (226 + 228)	pCi/L	1.04	0.812 U	0.965 U	0.990	0.132 U	0.626 U	1.60	0.897 U	1.46	2.66
SELENIUM, TOTAL	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0018 J	<0.0016	<0.0016	<0.0016
THALLIUM, TOTAL	mg/L	<0.00014	<0.00014	<0.00014	<0.00014	0.00016 J	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014

Notes:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter; S.U. - Standard Units
2. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
3. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
4. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.
5. Not Sampled - Sample not analyzed for this constituent.

TABLE 5B
ANALYTICAL DATA SUMMARY
Ash Pond 1 - September 2020
 Georgia Power Company - Plant McDonough
 Atlanta, GA

Analyte	Units	Well ID									
		DGWA-53	DGWA-70A	DGWA-71	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
		9/22/2020	9/22/2020	9/22/2020	9/24/2020	9/24/2020	9/25/2020	9/23/2020	9/23/2020	9/23/2020	9/23/2020
Appendix III											
BORON, TOTAL	mg/L	0.056 J	< 0.0052	< 0.0052	1.6	2.9	3.3	0.76	3.2	1.7	0.041 J
CALCIUM, TOTAL	mg/L	15.5	5.0	5.4	55.9	84.1	92.5	41.9	42.0	50.2	8.0
CHLORIDE, TOTAL	mg/L	1.6	1.9	5.2	5.6	8.2	7.9	19.7	7.1	3.6	4.7
FLUORIDE, TOTAL	mg/L	0.099 J	< 0.050	< 0.050	0.061 J	0.057 J	0.086 J	0.054 J	< 0.050	0.070 J	0.064 J
pH	S.U.	6.43	6.01	6.06	6.30	6.05	6.38	4.78	6.23	6.60	6.08
SULFATE, TOTAL	mg/L	13.5	< 0.50	6.5	84.1	240	153	190	99.8	38.7	5.9
TOTAL DISSOLVED SOLIDS	mg/L	142	46.0	74.0	280	489	460	357	296	251	102
Appendix IV											
ANTIMONY, TOTAL	mg/L	< 0.00028	< 0.00028	< 0.00028	< 0.00028	< 0.00028	< 0.00028	< 0.00028	< 0.00028	< 0.00028	< 0.00028
ARSENIC, TOTAL	mg/L	0.00093 J	< 0.00078	< 0.00078	< 0.00078	< 0.00078	0.00087 J	< 0.00078	< 0.00078	< 0.00078	0.032
BARIUM, TOTAL	mg/L	0.070	0.038	0.024	0.094	0.032	0.10	0.019	0.10	0.094	0.055
BERYLLIUM, TOTAL	mg/L	< 0.000046	0.000068 J	0.000069 J	0.000088 J	0.000058 J	< 0.000046	0.0031	< 0.000046	< 0.000046	0.000061 J
CADMIUM, TOTAL	mg/L	< 0.00012	< 0.00012	< 0.00012	0.00027 J	0.00081 J	< 0.00012	0.00080 J	0.00018 J	0.00024 J	< 0.00012
CHROMIUM, TOTAL	mg/L	< 0.00055	0.00089 J	< 0.00055	< 0.00055	< 0.00055	< 0.00055	0.0011 J	< 0.00055	< 0.00055	0.0011 J
COBALT, TOTAL	mg/L	0.011	< 0.00038	< 0.00038	< 0.00038	0.0013 J	0.0061	0.046	0.0011 J	< 0.00038	< 0.00038
FLUORIDE, TOTAL	mg/L	0.099 J	< 0.050	< 0.050	0.061 J	0.057 J	0.086 J	0.054 J	< 0.050	0.070 J	0.064 J
LEAD, TOTAL	mg/L	< 0.000036	0.000078 J	< 0.000036	< 0.000036	0.00014 J	0.00022 J	0.00028 J	< 0.000036	0.00035 J	0.00017 J
LITHIUM, TOTAL	mg/L	0.0089 J	< 0.00081	0.0012 J	0.0021 J	0.0029 J	< 0.00081	0.0022 J	0.0043 J	< 0.00081	0.0023 J
MERCURY, TOTAL	mg/L	< 0.000078	< 0.000078	< 0.000078	0.000091 J	0.000085 J	< 0.000078	< 0.000078	< 0.000078	< 0.000078	< 0.000078
MOLYBDENUM, TOTAL	mg/L	0.039	< 0.00069	< 0.00069	< 0.00069	0.0010 J	< 0.00069	< 0.00069	< 0.00069	0.20	0.0056 J
RADIUM (226 + 228)	pCi/L	2.27	0.450 U	0.216 U	1.03 U	0.593 U	0.181 U	1.28 U	0.131 U	0.563 U	1.80
SELENIUM, TOTAL	mg/L	< 0.0016	< 0.0016	< 0.0016	< 0.0016	< 0.0016	< 0.0016	0.0067 J	< 0.0016	< 0.0016	< 0.0016
THALLIUM, TOTAL	mg/L	< 0.00014	< 0.00014	< 0.00014	< 0.00014	0.00015 J	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014

Notes:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter; S.U. - Standard Units
2. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
3. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
4. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.

TABLE 5C
ASSESSMENT MONITORING ANALYTICAL DATA SUMMARY
Ash Pond 1 - August 2020
Georgia Power Company - Plant McDonough
Atlanta, GA

Analyte	UNITS	Well ID	
		B-62	B-100
		8/13/2020	8/17/2020
Appendix III			
BORON, TOTAL	mg/L	Not Sampled	Not Sampled
CALCIUM, TOTAL	mg/L	Not Sampled	Not Sampled
CHLORIDE, TOTAL	mg/L	Not Sampled	Not Sampled
FLUORIDE, TOTAL	mg/L	0.11	<0.050
pH	S.U.	6.40	5.02
SULFATE, TOTAL	mg/L	Not Sampled	Not Sampled
TOTAL DISSOLVED SOLIDS	mg/L	Not Sampled	Not Sampled
Appendix IV			
ANTIMONY, TOTAL	mg/L	<0.00028	0.0013 J
ARSENIC, TOTAL	mg/L	<0.00078	<0.00078
BARIUM, TOTAL	mg/L	0.026	0.015
BERYLLIUM, TOTAL	mg/L	0.00011 J	0.00040 J
CADMIUM, TOTAL	mg/L	<0.00012	0.00059 J
CHROMIUM, TOTAL	mg/L	<0.00055	<0.00055
COBALT, TOTAL	mg/L	<0.00038	0.077
FLUORIDE, TOTAL	mg/L	0.11	<0.050
LEAD, TOTAL	mg/L	<0.000036	0.000088 J
LITHIUM, TOTAL	mg/L	0.0087 J	0.0013 J
MERCURY, TOTAL	mg/L	<0.000078	0.00011 J
MOLYBDENUM, TOTAL	mg/L	<0.00069	<0.00069
RADIUM (226 + 228)	pCi/L	1.63	1.40 U
SELENIUM, TOTAL	mg/L	<0.0016	<0.0016
THALLIUM, TOTAL	mg/L	<0.00014	<0.00014

Notes:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter; S.U. - Standard Units
2. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
3. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
4. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.
5. Not Sampled - Sample not analyzed for this constituent.

TABLE 5D
ASSESSMENT MONITORING ANALYTICAL DATA SUMMARY
Ash Pond 1 - September 2020
Georgia Power Company - Plant McDonough
Atlanta, GA

Analyte	Units	Well ID	
		B-62	B-100
		9/24/2020	9/25/2020
Appendix III			
BORON, TOTAL	mg/L	0.074 J	0.27
CALCIUM, TOTAL	mg/L	28.8	44.7
CHLORIDE, TOTAL	mg/L	5.7	13.2
FLUORIDE, TOTAL	mg/L	0.093 J	< 0.050
pH	S.U.	6.55	5.53
SULFATE, TOTAL	mg/L	50.6	385
TOTAL DISSOLVED SOLIDS	mg/L	170	724
Appendix IV			
ANTIMONY, TOTAL	mg/L	0.00046 J	< 0.00028
ARSENIC, TOTAL	mg/L	< 0.00078	< 0.00078
BARIUM, TOTAL	mg/L	0.025	0.022
BERYLLIUM, TOTAL	mg/L	0.00013 J	0.00035 J
CADMIUM, TOTAL	mg/L	< 0.00012	0.00027 J
CHROMIUM, TOTAL	mg/L	< 0.00055	0.00094 J
COBALT, TOTAL	mg/L	< 0.00038	0.034
FLUORIDE, TOTAL	mg/L	0.093 J	< 0.050
LEAD, TOTAL	mg/L	< 0.000036	0.00021 J
LITHIUM, TOTAL	mg/L	0.0084 J	0.0027 J
MERCURY, TOTAL	mg/L	< 0.000078	< 0.000078
MOLYBDENUM, TOTAL	mg/L	< 0.00069	< 0.00069
RADIUM (226 + 228)	pCi/L	1.28 U	0.799 U
SELENIUM, TOTAL	mg/L	< 0.0016	< 0.0016
THALLIUM, TOTAL	mg/L	< 0.00014	< 0.00014

Notes:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter; S.U. - Standard Units
2. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
3. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
4. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.

TABLE 5E
SURFACE WATER ANALYTICAL DATA SUMMARY - NOVEMBER 2020
Ash Pond 1
 Georgia Power Company - Plant McDonough
 Atlanta, GA



Analyte	Units	SURFACE WATER SAMPLES									
		UT01_DS	UT01_US	UT02	CR+0.4	CR+0.2	Dewatering Upstream	Dewatering Downstream	CR-0.2	CR-0.5	CR-0.8
		11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020
Appendix III											
Calcium	mg/L	22.3	21.3	21.9	-	-	-	-	-	-	-
Chloride	mg/L	11.5	12	11.7	-	-	-	-	-	-	-
Fluoride	mg/L	0.18	0.18	0.18	-	-	-	-	-	-	-
pH	SU	7.18	7.3	7.31	7.35	7.42	6.9	7.03	7.82	7.4	7.62
Sulfate	mg/L	20.5	16.1	16.5	-	-	-	-	-	-	-
Total Dissolved Solids	mg/L	145	132	127	-	-	-	-	-	-	-
Appendix IV											
Beryllium	mg/L	-	-	-	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Cobalt	mg/L	-	-	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Molybdenum	mg/L	<0.010	<0.010	<0.010	-	-	-	-	-	-	-
Major Ions											
Alkalinity, Total as CaCO3	mg/L	68.8	68.8	67.9	-	-	-	-	-	-	-
Alkalinity, Bicarbonate (CaCO3)	mg/L	68.8	68.8	67.9	-	-	-	-	-	-	-
Magnesium	mg/L	4.8	4.2	4.4	2	2	2	2	2.1	2	2
Potassium	mg/L	3.9	3.8	4.2	2.6	2.5	2.7	2.6	2.6	2.8	2.6
Sodium	mg/L	13.9	14.2	14.4	5.4	5.5	5.5	5.6	5.9	5.7	5.6

Notes:

< indicates the substance was not detected above the analytical reporting limit (RL). The value displayed is the RL.

"-" = analysis was not performed

TABLE 5F
SURFACE WATER ANALYTICAL DATA SUMMARY - FEBRUARY 2021
Ash Pond 1
 Georgia Power Company - Plant McDonough
 Atlanta, GA



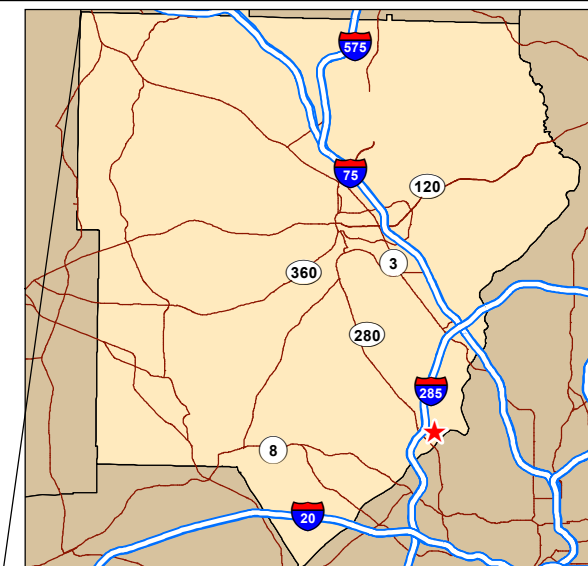
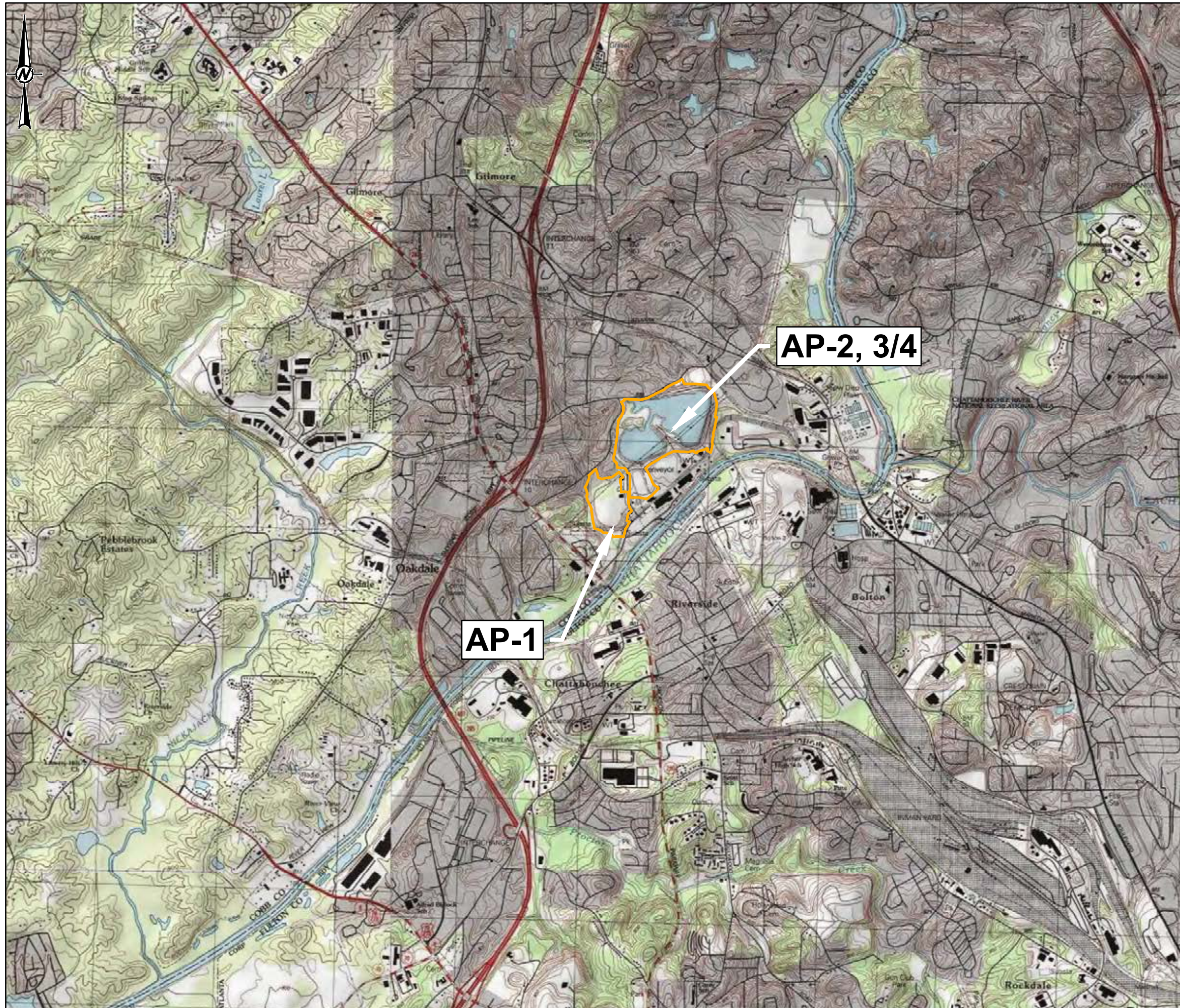
Analyte	Units	SURFACE WATER SAMPLES											
		UT01_DS	UT01_US	UT02	UT03	CR+0.4	CR+0.2	CR-0.1	Dewatering Downstream	Dewatering Upstream	CR-0.2	CR-0.5	CR-0.8
		2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021
Field Parameters													
Temperature	F	47.4	46.7	46.6	45.4	46.16	46.24	46.43	46.41	46.52	46.6	46.75	46.98
pH	S.U.	7.19	7.07	7.05	7.01	7.65	7.57	7.78	7.7	7.51	7.48	7.46	7.15
ORP	mv	110.4	144.3	147.3	143.9	-4.8	-3.4	-8.1	-11	-9.8	-19.3	-20.8	-21.3
Dissolved Oxygen	mg/L	10.60	11.82	11.90	11.17	13.02	13.08	12.92	14.72	12.87	13.00	13.05	13.97
Turbidity	NTU	5.96	4.05	4.19	4.6	14.2	13.7	16.0	11.8	12.3	14.0	14.4	14.0
Specific Conductance	mS/cm	0.252	0.187	0.190	0.189	0.080	0.080	0.083	0.079	0.079	0.079	0.078	0.080
Appendix III													
Boron	mg/L	0.11	0.046	0.063	0.069	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Calcium	mg/L	17.4	17.2	17.4	17.3	5.3	5	5.2	5.1	4.9	5	5.2	4.9
Chloride	mg/L	9.9	10.7	10.4	10.2	6.3	6.2	6.6	6.1	6.1	6.2	6.2	6.4
Fluoride	mg/L	0.17	0.22	0.17	0.17	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	16.5	14.5	15.5	15.4	4.5	4.4	4.8	4.3	4.3	4.3	4.3	4.5
Total Dissolved Solids	mg/L	100	97	99	98	27	41	25	30	29	38	31	30
Appendix IV													
Arsenic	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Beryllium	mg/L	NA	NA	NA	NA	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Major Ions													
Alkalinity, Total as CaCO3	mg/L	55.1	53.5	54.7	54.3	20.5	20.4	20.7	16.7	20.1	17.2	17	17
Alkalinity, Bicarbonate (CaCO3)	mg/L	55.1	53.5	54.7	54.3	20.5	20.4	20.7	16.7	20.1	17.2	17	17
Magnesium	mg/L	3.6	3.3	3.3	3.4	2.1	2	2.1	2	2	2.1	2.1	2.1
Potassium	mg/L	2.9	2.9	3	2.9	2.8	2.7	2.8	2.7	2.7	2.8	2.8	2.8
Sodium	mg/L	12.2	12.7	12.7	12.6	7	6.8	7	6.9	6.8	6.8	7	7

Notes:

F = Fahrenheit; S.U. = Standard Units; mV = Millivolts; mg/L = milligrams per liter; mS/cm = Milisemens per centimeter; NTU = nephelometric turbidity unit

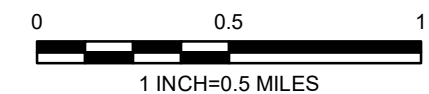
< indicates the substance was not detected above the analytical reporting limit (RL). The value displayed is the RL.

"--" = analysis was not performed



REFERENCE

SERVICE LAYER CREDITS: COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED



CLIENT
 GEORGIA POWER COMPANY
 PLANT MCDONOUGH
 PROJECT
 SEMI-ANNUAL GROUNDWATER MONITORING
 REPORT PLANT MCDONOUGH

TITLE
SITE LOCATION MAP

CONSULTANT	YYYY-MM-DD	2019-1-31
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	KNJ
	APPROVED	TIR

THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN. THE SHEET HAS BEEN MODIFIED FROM ANS/B



LEGEND

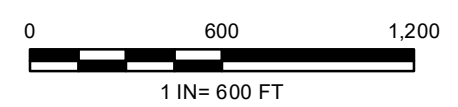
- AP-1 MONITORING WELL
- PIEZOMETER
- AP-2,3/4 MONITORING WELL
- UPGRADIENT WELL
- AP-1 SURFACE WATER
- AP-2,3/4 SURFACE WATER
- STAFF GAUGE
- PROPERTY BOUNDARY
- PERMIT BOUNDARY

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE

REFERENCE

1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS SURVEYED BY METRO ENGINEERING 08/10/2020.



CLIENT
GEORGIA POWER COMPANY
 PLANT MCDONOUGH



PROJECT
 SEMI-ANNUAL GROUNDWATER
 MONITORING

TITLE
**MONITORING WELL, PIEZOMETER AND SURFACE WATER
 LOCATION MAP**

CONSULTANT	YYYY-MM-DD	2021-02-03
	PREPARED	DJC
	DESIGN	DLP
	REVIEW	DP/RK
	APPROVED	TIR

Path: C:\Users\jdozier\Documents\166849621_SCS Plant McDonough GW Cont. Svcs GA - Project File\800_Shapefiles\MXD\Remedy Selection Work Plan\Figure 2 - Proposed Investigation Location Map.mxd



LEGEND

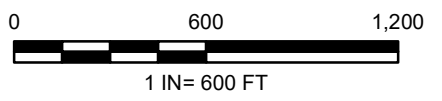
- PIEZOMETER
- AP-1 MONITORING WELL
- AP-2,3/4 MONITORING WELL
- UPGRADIENT WELL
- PropertyBoundary_edit
- PERMIT BOUNDARY
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- GROUNDWATER SURFACE CONTOUR (FT NAVD)

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED AUGUST 10, 2020 BY GOLDER ASSOCIATES.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM (FT NAVD).
4. B-27, B-68, AND DGWA-70 ARE NOT USED AS MONITORING WELLS DUE TO WELL REPLACEMENT, PROXIMITY TO CLOSURE ACTIVITIES, OR MODIFICATIONS TO THE PROPOSED WELL NETWORK.
5. B-72 THROUGH B-74 WATER LEVELS NOT TAKEN DURING AUGUST 10TH, 2020 EVENT.
6. INTERSTITIAL WELLS GROUNDWATER ELEVATION DETERMINED USING TOPOGRAPHY.

REFERENCE

1. AERIAL IMAGE DATED NOVEMBER 2018 FROM GOOGLE EARTH.
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS AND ELEVATIONS SURVEYED BY METRO ENGINEERING AND SURVEYING COMPANY IN AUGUST 2020



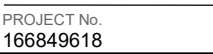
CLIENT
SOUTHERN COMPANY SERVICES, INC.
PLANT MCDONOUGH



PROJECT
SEMI-ANNUAL GROUNDWATER
MONITORING REPORT

TITLE
SITE POTENTIOMETRIC MAP
AUGUST 10, 2020

CONSULTANT	YYYY-MM-DD	2020-08-10
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	BAS
	APPROVED	TIR



PROJECT No.
166849618

Rev.
0

FIGURE
3A

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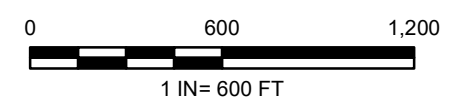
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANS/B



- LEGEND**
- PIEZOMETER
 - AP-1 MONITORING WELL
 - AP-2,3/4 MONITORING WELL
 - UPGRADIENT WELL
 - PERMIT BOUNDARY
 - PROPERTY BOUNDARY
 - APPROXIMATE GROUNDWATER FLOW DIRECTION
 - GROUNDWATER SURFACE CONTOUR (FT NAVD)

- NOTES**
1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED SEPTEMBER 21, 2020 BY GOLDER ASSOCIATES.
 3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM (FT NAVD).
 4. B-27, B-68, AND DGWA-70 ARE NOT USED AS MONITORING WELLS DUE TO WELL REPLACEMENT, PROXIMITY TO CLOSURE ACTIVITIES, OR MODIFICATIONS TO THE PROPOSED WELL NETWORK.
 5. B-72 THROUGH B-74 WATER LEVELS NOT TAKEN DURING SEPTEMBER 21ST, 2020 EVENT.
 6. INTERSTITIAL WELLS GROUNDWATER ELEVATION DETERMINED USING TOPOGRAPHY.

- REFERENCE**
1. AERIAL IMAGE DATED NOVEMBER 2018 FROM GOOGLE EARTH.
 2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
 3. MONITORING WELL/PIEZOMETER LOCATIONS AND ELEVATIONS SURVEYED BY METRO ENGINEERING AND SURVEYING COMPANY IN AUGUST 2020.



CLIENT
 SOUTHERN COMPANY SERVICES, INC.
 PLANT MCDONOUGH



PROJECT
 SEMI-ANNUAL GROUNDWATER MONITORING
 REPORT

TITLE
 SITE POTENTIOMETRIC MAP
 SEPTEMBER 21, 2020

CONSULTANT	YYYY-MM-DD	2020-09-21
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	BAS
	REVIEWED/APPROVED	DLP

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANSIS B

APPENDIX A

**LABORATORY ANALYTICAL DATA, FIELD DATA
FORMS, INSTRUMENT CALIBRATION FORMS,
WELL INSPECTION FORMS, DATA VALIDATION
SUMMARIES, AND LABORATORY
ACCREDITATION**

APPENDIX A

**Laboratory Analytical Data
AUGUST 2020**

September 09, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 12, 2020 and August 14, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 191
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92490488001	DGWA-70A	Water	08/11/20 11:37	08/12/20 08:57
92490488002	DGWA-71	Water	08/11/20 14:55	08/12/20 08:57
92490488003	EB-1	Water	08/11/20 12:50	08/12/20 08:57
92490488004	DGWA-53	Water	08/13/20 13:07	08/14/20 14:30

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92490488001	DGWA-70A	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490488002	DGWA-71	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490488003	EB-1	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490488004	DGWA-53	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA
PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Sample: DGWA-70A **Lab ID: 92490488001** Collected: 08/11/20 11:37 Received: 08/12/20 08:57 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.86	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0013J	mg/L	0.0030	0.00028	1	08/13/20 10:10	08/17/20 18:33	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/13/20 10:10	08/17/20 18:33	7440-38-2	
Barium	0.041	mg/L	0.010	0.00071	1	08/13/20 10:10	08/17/20 18:33	7440-39-3	
Beryllium	0.00013J	mg/L	0.0030	0.000046	1	08/13/20 10:10	08/17/20 18:33	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/13/20 10:10	08/17/20 18:33	7440-43-9	
Chromium	0.0016J	mg/L	0.010	0.00055	1	08/13/20 10:10	08/17/20 18:33	7440-47-3	B
Cobalt	0.0012J	mg/L	0.0050	0.00038	1	08/13/20 10:10	08/17/20 18:33	7440-48-4	
Lead	0.00030J	mg/L	0.0050	0.000036	1	08/13/20 10:10	08/17/20 18:33	7439-92-1	
Lithium	0.0019J	mg/L	0.030	0.00081	1	08/13/20 10:10	08/17/20 18:33	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/13/20 10:10	08/17/20 18:33	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/13/20 10:10	08/17/20 18:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/13/20 10:10	08/17/20 18:33	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/14/20 08:10	08/14/20 13:26	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/13/20 23:59	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Sample: DGWA-71 **Lab ID: 92490488002** Collected: 08/11/20 14:55 Received: 08/12/20 08:57 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.96	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0018J	mg/L	0.0030	0.00028	1	08/13/20 10:10	08/17/20 18:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/13/20 10:10	08/17/20 18:56	7440-38-2	
Barium	0.026	mg/L	0.010	0.00071	1	08/13/20 10:10	08/17/20 18:56	7440-39-3	
Beryllium	0.00011J	mg/L	0.0030	0.000046	1	08/13/20 10:10	08/17/20 18:56	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/13/20 10:10	08/17/20 18:56	7440-43-9	
Chromium	0.00060J	mg/L	0.010	0.00055	1	08/13/20 10:10	08/17/20 18:56	7440-47-3	B
Cobalt	ND	mg/L	0.0050	0.00038	1	08/13/20 10:10	08/17/20 18:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/13/20 10:10	08/17/20 18:56	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00081	1	08/13/20 10:10	08/17/20 18:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/13/20 10:10	08/17/20 18:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/13/20 10:10	08/17/20 18:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/13/20 10:10	08/17/20 18:56	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/14/20 08:10	08/14/20 13:29	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/14/20 01:08	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Sample: EB-1 Lab ID: 92490488003 Collected: 08/11/20 12:50 Received: 08/12/20 08:57 Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS										
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA										
Antimony	0.00038J	mg/L	0.0030	0.00028	1	08/13/20 10:10	08/17/20 19:13	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	08/13/20 10:10	08/17/20 19:13	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	08/13/20 10:10	08/17/20 19:13	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	08/13/20 10:10	08/17/20 19:13	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00012	1	08/13/20 10:10	08/17/20 19:13	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	08/13/20 10:10	08/17/20 19:13	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	08/13/20 10:10	08/17/20 19:13	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	08/13/20 10:10	08/17/20 19:13	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	08/13/20 10:10	08/17/20 19:13	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	08/13/20 10:10	08/17/20 19:13	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	08/13/20 10:10	08/17/20 19:13	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	08/13/20 10:10	08/17/20 19:13	7440-28-0		
7470 Mercury										
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA										
Mercury	ND	mg/L	0.00020	0.000078	1	08/14/20 08:10	08/14/20 13:31	7439-97-6		
300.0 IC Anions 28 Days										
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville										
Fluoride	ND	mg/L	0.10	0.050	1		08/14/20 01:22	16984-48-8		

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

Sample: DGWA-53		Lab ID: 92490488004		Collected: 08/13/20 13:07		Received: 08/14/20 14:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.17	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00030J	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 18:37	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 18:37	7440-38-2	
Barium	0.046	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 18:37	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 18:37	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 18:37	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 18:37	7440-47-3	
Cobalt	0.0051	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 18:37	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 18:37	7439-92-1	
Lithium	0.0085J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 18:37	7439-93-2	
Molybdenum	0.012	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 18:37	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 18:37	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 18:37	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 11:13	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.062J	mg/L	0.10	0.050	1		08/18/20 19:53	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch:	559731	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490488001, 92490488002, 92490488003

METHOD BLANK: 2969713 Matrix: Water

Associated Lab Samples: 92490488001, 92490488002, 92490488003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/17/20 18:05	
Arsenic	mg/L	ND	0.0050	0.00078	08/17/20 18:05	
Barium	mg/L	ND	0.010	0.00071	08/17/20 18:05	
Beryllium	mg/L	ND	0.0030	0.000046	08/17/20 18:05	
Cadmium	mg/L	ND	0.0025	0.00012	08/17/20 18:05	
Chromium	mg/L	0.00061J	0.010	0.00055	08/17/20 18:05	
Cobalt	mg/L	ND	0.0050	0.00038	08/17/20 18:05	
Lead	mg/L	ND	0.0050	0.000036	08/17/20 18:05	
Lithium	mg/L	ND	0.030	0.00081	08/17/20 18:05	
Molybdenum	mg/L	ND	0.010	0.00069	08/17/20 18:05	
Selenium	mg/L	ND	0.010	0.0016	08/17/20 18:05	
Thallium	mg/L	ND	0.0010	0.00014	08/17/20 18:05	

LABORATORY CONTROL SAMPLE: 2969714

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	110	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.11	106	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2973381 2973382

Parameter	Units	MS 92490488001		MSD 2973382		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Spike Conc.	Spike Conc.	Result							
Antimony	mg/L	0.0013J	0.1	0.1	0.11	0.11	110	105	75-125	4	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Barium	mg/L	0.041	0.1	0.1	0.15	0.15	112	106	75-125	4	20	
Beryllium	mg/L	0.00013J	0.1	0.1	0.11	0.10	105	103	75-125	2	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Parameter	Units	2973381		2973382		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Cadmium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Chromium	mg/L	0.0016J	0.1	0.1	0.10	0.096	102	95	75-125	7	20		
Cobalt	mg/L	0.0012J	0.1	0.1	0.10	0.097	101	96	75-125	5	20		
Lead	mg/L	0.00030J	0.1	0.1	0.11	0.10	106	101	75-125	5	20		
Lithium	mg/L	0.0019J	0.1	0.1	0.11	0.11	106	104	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.095	96	95	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	105	102	75-125	3	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

QC Batch: 560739 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490488004

METHOD BLANK: 2974806 Matrix: Water
Associated Lab Samples: 92490488004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/19/20 17:51	
Arsenic	mg/L	ND	0.0050	0.00078	08/19/20 17:51	
Barium	mg/L	ND	0.010	0.00071	08/19/20 17:51	
Beryllium	mg/L	ND	0.0030	0.000046	08/19/20 17:51	
Cadmium	mg/L	ND	0.0025	0.00012	08/19/20 17:51	
Chromium	mg/L	ND	0.010	0.00055	08/19/20 17:51	
Cobalt	mg/L	ND	0.0050	0.00038	08/19/20 17:51	
Lead	mg/L	ND	0.0050	0.000036	08/19/20 17:51	
Lithium	mg/L	ND	0.030	0.00081	08/19/20 17:51	
Molybdenum	mg/L	ND	0.010	0.00069	08/19/20 17:51	
Selenium	mg/L	ND	0.010	0.0016	08/19/20 17:51	
Thallium	mg/L	ND	0.0010	0.00014	08/19/20 17:51	

LABORATORY CONTROL SAMPLE: 2974807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	111	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974808 2974809

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92490942006 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	114	109	75-125	5	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	2	20	
Barium	mg/L	0.088	0.1	0.1	0.22	0.21	131	119	75-125	6	20	M1
Beryllium	mg/L	ND	0.1	0.1	0.099	0.096	99	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

Parameter	Units	2974808		2974809		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92490942006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	0.00021J	0.1	0.1	0.10	0.098	99	98	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	0	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.098	102	97	75-125	4	20		
Molybdenum	mg/L	0.19	0.1	0.1	0.31	0.29	122	105	75-125	5	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.093	99	92	75-125	7	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

QC Batch: 559929 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92490488001, 92490488002, 92490488003

METHOD BLANK: 2971190 Matrix: Water
Associated Lab Samples: 92490488001, 92490488002, 92490488003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/14/20 12:55	

LABORATORY CONTROL SAMPLE: 2971191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2971192 2971193

Parameter	Units	2971192		2971193		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92489844052 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0025	98	99	75-125	1	20

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch: 560630

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490488004

METHOD BLANK: 2974336

Matrix: Water

Associated Lab Samples: 92490488004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/19/20 10:06	

LABORATORY CONTROL SAMPLE: 2974337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974338 2974339

Parameter	Units	2974338		2974339		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Mercury	mg/L	3.1 ug/L	0.0025	0.0025	0.0060	0.0058	118	111	75-125	3	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 92490488

QC Batch: 559792 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92490488001, 92490488002, 92490488003

METHOD BLANK: 2970272 Matrix: Water
Associated Lab Samples: 92490488001, 92490488002, 92490488003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/13/20 23:31	

LABORATORY CONTROL SAMPLE: 2970273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2970274 2970275

Parameter	Units	92490488001		2970274		2970275		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Fluoride	mg/L	ND	2.5	2.5	2.7	2.6	106	104	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2970276 2970277

Parameter	Units	92490503008		2970276		2970277		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Fluoride	mg/L	ND	2.5	2.5	2.6	2.4	102	98	90-110	4	10	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch: 560576	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92490488004

METHOD BLANK: 2974090 Matrix: Water

Associated Lab Samples: 92490488004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/18/20 13:07	

LABORATORY CONTROL SAMPLE: 2974091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974092 2974093

Parameter	Units	2974092		2974093		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92490804001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	0.82	2.5	2.5	3.3	3.3	100	101	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974094 2974095

Parameter	Units	2974094		2974095		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92490867001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	0.37	2.5	2.5	3.0	3.1	107	107	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWA-70A Lab ID: 92490488001 Collected: 08/11/20 11:37 Received: 08/12/20 08:57 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.178 ± 0.171 (0.324) C:89% T:NA	pCi/L	08/24/20 07:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.634 ± 0.446 (0.869) C:64% T:88%	pCi/L	08/27/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.812 ± 0.617 (1.19)	pCi/L	09/04/20 08:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Sample: DGWA-71 **Lab ID: 92490488002** Collected: 08/11/20 14:55 Received: 08/12/20 08:57 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.217 ± 0.159 (0.256) C:94% T:NA	pCi/L	08/24/20 07:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.748 ± 0.451 (0.847) C:69% T:85%	pCi/L	08/27/20 11:53	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.965 ± 0.610 (1.10)	pCi/L	09/04/20 08:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Sample: EB-1 **Lab ID: 92490488003** Collected: 08/11/20 12:50 Received: 08/12/20 08:57 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.0219 ± 0.117 (0.336) C:88% T:NA	pCi/L	08/24/20 07:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.168 ± 0.413 (0.918) C:66% T:83%	pCi/L	08/27/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.168 ± 0.530 (1.25)	pCi/L	09/04/20 08:38	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Sample: DGWA-53 **Lab ID: 92490488004** Collected: 08/13/20 13:07 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.706 ± 0.192 (0.183) C:81% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.337 ± 0.382 (0.798) C:61% T:83%	pCi/L	09/08/20 11:52	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.04 ± 0.574 (0.981)	pCi/L	09/09/20 08:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch:	411433	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92490488004

METHOD BLANK:	1990338	Matrix:	Water
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Associated Lab Samples: 92490488004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.527 ± 0.407 (0.796) C:61% T:86%	pCi/L	09/08/20 11:52	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch:	410124	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92490488001, 92490488002, 92490488003

METHOD BLANK: 1984702 Matrix: Water

Associated Lab Samples: 92490488001, 92490488002, 92490488003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.731 ± 0.425 (0.763) C:63% T:81%	pCi/L	08/27/20 11:50	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch: 410046

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92490488001, 92490488002, 92490488003

METHOD BLANK: 1984358

Matrix: Water

Associated Lab Samples: 92490488001, 92490488002, 92490488003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0476 ± 0.101 (0.237) C:93% T:NA	pCi/L	08/24/20 07:55	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

QC Batch:	411372	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92490488004

METHOD BLANK: 1989991 Matrix: Water

Associated Lab Samples: 92490488004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0430 ± 0.0800 (0.185) C:87% T:NA	pCi/L	08/31/20 19:25	

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

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QUALIFIERS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 92490488

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92490488001	DGWA-70A				
92490488002	DGWA-71				
92490488004	DGWA-53				
92490488001	DGWA-70A	EPA 3005A	559731	EPA 6020B	559753
92490488002	DGWA-71	EPA 3005A	559731	EPA 6020B	559753
92490488003	EB-1	EPA 3005A	559731	EPA 6020B	559753
92490488004	DGWA-53	EPA 3005A	560739	EPA 6020B	560802
92490488001	DGWA-70A	EPA 7470A	559929	EPA 7470A	559986
92490488002	DGWA-71	EPA 7470A	559929	EPA 7470A	559986
92490488003	EB-1	EPA 7470A	559929	EPA 7470A	559986
92490488004	DGWA-53	EPA 7470A	560630	EPA 7470A	560770
92490488001	DGWA-70A	EPA 9315	410046		
92490488002	DGWA-71	EPA 9315	410046		
92490488003	EB-1	EPA 9315	410046		
92490488004	DGWA-53	EPA 9315	411372		
92490488001	DGWA-70A	EPA 9320	410124		
92490488002	DGWA-71	EPA 9320	410124		
92490488003	EB-1	EPA 9320	410124		
92490488004	DGWA-53	EPA 9320	411433		
92490488001	DGWA-70A	Total Radium Calculation	412557		
92490488002	DGWA-71	Total Radium Calculation	412557		
92490488003	EB-1	Total Radium Calculation	412558		
92490488004	DGWA-53	Total Radium Calculation	413004		
92490488001	DGWA-70A	EPA 300.0 Rev 2.1 1993	559792		
92490488002	DGWA-71	EPA 300.0 Rev 2.1 1993	559792		
92490488003	EB-1	EPA 300.0 Rev 2.1 1993	559792		
92490488004	DGWA-53	EPA 300.0 Rev 2.1 1993	560576		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Rec

WO#: 92490488

Client Name: G A Power



Courier: Fed Ex UPS USPS Client Commercial Pace Oll Tracking #: _____

Proj. Due Date: _____
Proj. Name: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 233 Type of Ice: Wdt Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.8 Biological Tissue Is Frozen: Yes No
Temp should be above freezing to 6°C

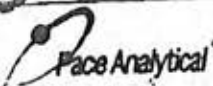
Date and Initials of person examining contents: 8/12/06

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution: _____ Field Data Required? Y / N
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project #

WO# : 92490488

PM: KLH1

Due Date: 08/26/20

CLIENT: GA-GA Power

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/BO15 (water) DOC, LLHg

Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic 2N Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	
1																												
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 Of 1

Section A

Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manor Road
 Atlanta, GA 30339
 Email: jabraham@southemco.com
 Phone: (404) 506-7239
 Requested Due Date:

Section B

Required Project Information:
 Report To: Jeya Abraham
 Copy To: Golden
 Purchase Order #:
 Project Name: Plant McDonough Background
 Project #: 166849618

Section C

Invoice Information:
 Account: scdmvces@southemco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: Kevin Herring
 Pace Profile #:

Regulatory Agency

State / Location
 GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, /, -) Sample IDs must be unique	Matrix	Date	Time	Temp	Preservatives	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)	
							App IV Metals*	Fluoride	Radon 220/228		
1	DGWA-70A	G	8/11/2020	1137	3	1	2	X	X	X	pH 5.86
2	DGWA-71	G	8/11/2020	1455	3	1	2	X	X	X	pH 5.96
3	EB-1	G	8/11/2020	1250	3	1	2	X	X	X	
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App IV Metals - SO, AL, BA, BE, CE, CR, CO, PB, LI, Hg, MO, SE, TI	<i>[Signature]</i>	8/12	856	<i>[Signature]</i>	8/12	857	
	<i>[Signature]</i>	8/12	1436	<i>[Signature]</i>	8/12	1445	pH 5.8 Y N Y

SAMPLER NAME AND SIGNATURE
 SAMPLER NAME: *Kevin Herring*
 SAMPLER SIGNATURE: *[Signature]*
 DATE Signed: *8/12/20*

TEMP in C
 Received on (Y/N)
 Custody Sealed (Y/N)
 Cooled (Y/N)
 Labeled (Y/N)
 Samples intact (Y/N)



Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 8/21/2020
Worklist: 55663
Matrix: DW

Method Blank Assessment	
MB Sample ID	1984358
MB concentration:	0.048
M/B Counting Uncertainty:	0.101
MB MDC:	0.237
MB Numerical Performance Indicator:	0.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS55663	LCS/D55663
Count Date:	8/24/2020	8/24/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.505	0.503
Target Conc. (pCi/L, g, F):	4.760	4.776
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	4.133	5.003
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.579	0.603
Numerical Performance Indicator:	-2.12	0.74
Percent Recovery:	86.81%	104.76%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55663	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS/D55663	
Sample Result (pCi/L, g, F):	4.133	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.579	
Sample Duplicate Result (pCi/L, g, F):	5.003	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.603	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-2.043	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	18.74%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

OK 8/24/2020

*JJY
8-24-20*



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: JJY
Date: 8/21/2020
Worklist: 55663
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1984358
MB concentration:	0.048
M/B Counting Uncertainty:	0.101
MB MDC:	0.237
MB Numerical Performance Indicator:	0.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCSD55663
Count Date:	8/24/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	4.760	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.133	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.579	
Numerical Performance Indicator:	-2.12	
Percent Recovery:	86.81%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92490503014	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490503014DUP	
Sample Result (pCi/L, g, F):	0.870	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.275	
Sample Duplicate Result (pCi/L, g, F):	0.731	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.265	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.709	92490503014
Duplicate RPD:	17.33%	92490503014DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten signature: JJY 8/24/2020

Handwritten initials: JJY 8-24-20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 8/31/2020
Worklist: 55836
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1989991
MB concentration:	-0.043
M/B Counting Uncertainty:	0.080
MB MDC:	0.185
MB Numerical Performance Indicator:	-1.06
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCSD55836
Count Date:	9/1/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	4.798	
Uncertainty (Calculated):	0.058	
Result (pCi/L, g, F):	4.493	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	
Numerical Performance Indicator:	-0.79	
Percent Recovery:	93.65%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92490503020	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490503020DUP	
Sample Result (pCi/L, g, F):	0.717	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.321	
Sample Duplicate Result (pCi/L, g, F):	0.626	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.314	
Are sample and/or duplicate results below RL? See Below ##		
Duplicate Numerical Performance Indicator:	0.399	92490503020
Duplicate RPD:	13.61%	92490503020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Jan 9/1/2020

Analyst



Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 8/31/2020
Worklist: 55836
Matrix: DW

Method Blank Assessment		
MB Sample ID	1989991	
MB concentration:	-0.043	
M/B Counting Uncertainty:	0.080	
MB MDC:	0.185	
MB Numerical Performance Indicator:	-1.06	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55836	LCS55836
Count Date:	9/1/2020	9/1/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.501	0.500
Target Conc. (pCi/L, g, F):	4.798	4.808
Uncertainty (Calculated):	0.058	0.058
Result (pCi/L, g, F):	4.493	5.168
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	0.855
Numerical Performance Indicator:	-0.79	0.82
Percent Recovery:	93.65%	107.49%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55836	Enter Duplicate sample IDs if other than the space below.
Duplicate Sample I.D.:	LCS55836	
Sample Result (pCi/L, g, F):	4.493	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.750	
Sample Duplicate Result (pCi/L, g, F):	5.168	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.855	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.163	92490503020
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.75%	92490503020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

uam 9/1/2020

uam



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 8/24/2020
Worklist: 55667
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1984702
MB concentration:	0.731
M/B 2 Sigma CSU:	0.425
MB MDC:	0.763
MB Numerical Performance Indicator:	3.37
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55667	LCSD55667
Count Date:	8/27/2020	8/27/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.637	38.637
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.809	0.805
Target Conc. (pCi/L, g, F):	4.773	4.800
Uncertainty (Calculated):	0.234	0.235
Result (pCi/L, g, F):	6.454	5.781
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.448	1.299
Numerical Performance Indicator:	2.25	1.45
Percent Recovery:	135.21%	120.42%
Status vs Numerical Indicator:	Warning	N/A
Status vs Recovery:	Fail High**	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55667	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55667	
Sample Result (pCi/L, g, F):	6.454	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.448	
Sample Duplicate Result (pCi/L, g, F):	5.781	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.299	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.678	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.57%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

** Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

**If all sample results are below MDC, the batch is acceptable, otherwise this batch must be re-prepped due to LCS failure.

LCS NPI 23

537
8-28-2020

JJ 8-28-20

DU 8/28/20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 9/2/2020
Worklist: 55850
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1990338
MB concentration:	0.527
M/B 2 Sigma CSU:	0.407
MB MDC:	0.796
MB Numerical Performance Indicator:	2.54
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55850	LCSD55850
Count Date:	9/8/2020	9/8/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.485	38.485
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.807	0.803
Target Conc. (pCi/L, g, F):	4.769	4.794
Uncertainty (Calculated):	0.234	0.235
Result (pCi/L, g, F):	4.945	4.330
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.130	1.089
Numerical Performance Indicator:	0.30	-0.82
Percent Recovery:	103.69%	90.32%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55850	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55850	
Sample Result (pCi/L, g, F):	4.945	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.130	
Sample Duplicate Result (pCi/L, g, F):	4.330	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.089	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.769	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.79%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten signature/initials

September 10, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92490942001	DGWC-37	Water	08/13/20 11:00	08/14/20 14:30
92490942002	DGWC-38	Water	08/13/20 10:00	08/14/20 14:30
92490942003	DGWC-39	Water	08/13/20 15:05	08/14/20 14:30
92490942004	DGWC-40	Water	08/13/20 11:22	08/14/20 14:30
92490942005	DGWC-67	Water	08/13/20 16:25	08/14/20 14:30
92490942006	DGWC-68A	Water	08/13/20 15:25	08/14/20 14:30
92490942007	DGWC-69	Water	08/13/20 14:35	08/14/20 14:30
92490942008	EB-2	Water	08/13/20 17:30	08/14/20 14:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92490942001	DGWC-37	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942002	DGWC-38	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942003	DGWC-39	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942004	DGWC-40	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942005	DGWC-67	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942006	DGWC-68A	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942007	DGWC-69	EPA 6020B	CW1	12	PASI-GA

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490942008	EB-2	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-37 **Lab ID: 92490942001** Collected: 08/13/20 11:00 Received: 08/14/20 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.34	Std. Units			1		08/20/20 17:23		
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6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/17/20 16:46	08/20/20 20:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/17/20 16:46	08/20/20 20:00	7440-38-2	
Barium	0.088	mg/L	0.010	0.00071	1	08/17/20 16:46	08/20/20 20:00	7440-39-3	
Beryllium	0.00010J	mg/L	0.0030	0.000046	1	08/17/20 16:46	08/20/20 20:00	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/17/20 16:46	08/20/20 20:00	7440-43-9	
Chromium	0.00058J	mg/L	0.010	0.00055	1	08/17/20 16:46	08/20/20 20:00	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/17/20 16:46	08/20/20 20:00	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/17/20 16:46	08/20/20 20:00	7439-92-1	
Lithium	0.0023J	mg/L	0.030	0.00081	1	08/17/20 16:46	08/20/20 20:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/17/20 16:46	08/20/20 20:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/17/20 16:46	08/20/20 20:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/17/20 16:46	08/20/20 20:00	7440-28-0	

7470 Mercury

Analytical Method: EPA 7470A Preparation Method: EPA 7470A
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 12:38	7439-97-6	
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Fluoride	0.068J	mg/L	0.10	0.050	1		08/18/20 17:33	16984-48-8	
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-38 **Lab ID: 92490942002** Collected: 08/13/20 10:00 Received: 08/14/20 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.05	Std. Units			1		08/20/20 17:23		
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6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/17/20 16:46	08/20/20 20:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/17/20 16:46	08/20/20 20:06	7440-38-2	
Barium	0.032	mg/L	0.010	0.00071	1	08/17/20 16:46	08/20/20 20:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/17/20 16:46	08/20/20 20:06	7440-41-7	
Cadmium	0.00021J	mg/L	0.0025	0.00012	1	08/17/20 16:46	08/20/20 20:06	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/17/20 16:46	08/20/20 20:06	7440-47-3	
Cobalt	0.0014J	mg/L	0.0050	0.00038	1	08/17/20 16:46	08/20/20 20:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/17/20 16:46	08/20/20 20:06	7439-92-1	
Lithium	0.0028J	mg/L	0.030	0.00081	1	08/17/20 16:46	08/20/20 20:06	7439-93-2	
Molybdenum	0.00098J	mg/L	0.010	0.00069	1	08/17/20 16:46	08/20/20 20:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/17/20 16:46	08/20/20 20:06	7782-49-2	
Thallium	0.00016J	mg/L	0.0010	0.00014	1	08/17/20 16:46	08/20/20 20:06	7440-28-0	

7470 Mercury

Analytical Method: EPA 7470A Preparation Method: EPA 7470A
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 12:48	7439-97-6	
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Fluoride	0.060J	mg/L	0.10	0.050	1		08/18/20 17:47	16984-48-8	
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-39 **Lab ID: 92490942003** Collected: 08/13/20 15:05 Received: 08/14/20 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.39	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/17/20 16:46	08/20/20 20:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/17/20 16:46	08/20/20 20:12	7440-38-2	
Barium	0.089	mg/L	0.010	0.00071	1	08/17/20 16:46	08/20/20 20:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/17/20 16:46	08/20/20 20:12	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/17/20 16:46	08/20/20 20:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/17/20 16:46	08/20/20 20:12	7440-47-3	
Cobalt	0.0060	mg/L	0.0050	0.00038	1	08/17/20 16:46	08/20/20 20:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/17/20 16:46	08/20/20 20:12	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/17/20 16:46	08/20/20 20:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/17/20 16:46	08/20/20 20:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/17/20 16:46	08/20/20 20:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/17/20 16:46	08/20/20 20:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 12:50	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.076J	mg/L	0.10	0.050	1		08/18/20 18:01	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-40		Lab ID: 92490942004		Collected: 08/13/20 11:22		Received: 08/14/20 14:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.65	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/17/20 16:46	08/20/20 20:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/17/20 16:46	08/20/20 20:17	7440-38-2	
Barium	0.018	mg/L	0.010	0.00071	1	08/17/20 16:46	08/20/20 20:17	7440-39-3	
Beryllium	0.0033	mg/L	0.0030	0.000046	1	08/17/20 16:46	08/20/20 20:17	7440-41-7	
Cadmium	0.00084J	mg/L	0.0025	0.00012	1	08/17/20 16:46	08/20/20 20:17	7440-43-9	
Chromium	0.00072J	mg/L	0.010	0.00055	1	08/17/20 16:46	08/20/20 20:17	7440-47-3	
Cobalt	0.044	mg/L	0.0050	0.00038	1	08/17/20 16:46	08/20/20 20:17	7440-48-4	
Lead	0.000049J	mg/L	0.0050	0.000036	1	08/17/20 16:46	08/20/20 20:17	7439-92-1	
Lithium	0.0022J	mg/L	0.030	0.00081	1	08/17/20 16:46	08/20/20 20:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/17/20 16:46	08/20/20 20:17	7439-98-7	
Selenium	0.0018J	mg/L	0.010	0.0016	1	08/17/20 16:46	08/20/20 20:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/17/20 16:46	08/20/20 20:17	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 12:52	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.16	mg/L	0.10	0.050	1		08/18/20 18:43	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Sample: DGWC-67		Lab ID: 92490942005		Collected: 08/13/20 16:25		Received: 08/14/20 14:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.28	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/17/20 16:46	08/20/20 20:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/17/20 16:46	08/20/20 20:23	7440-38-2	
Barium	0.095	mg/L	0.010	0.00071	1	08/17/20 16:46	08/20/20 20:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/17/20 16:46	08/20/20 20:23	7440-41-7	
Cadmium	0.00015J	mg/L	0.0025	0.00012	1	08/17/20 16:46	08/20/20 20:23	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/17/20 16:46	08/20/20 20:23	7440-47-3	
Cobalt	0.0015J	mg/L	0.0050	0.00038	1	08/17/20 16:46	08/20/20 20:23	7440-48-4	
Lead	0.000056J	mg/L	0.0050	0.000036	1	08/17/20 16:46	08/20/20 20:23	7439-92-1	
Lithium	0.0044J	mg/L	0.030	0.00081	1	08/17/20 16:46	08/20/20 20:23	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/17/20 16:46	08/20/20 20:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/17/20 16:46	08/20/20 20:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/17/20 16:46	08/20/20 20:23	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 12:55	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/18/20 18:57	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: DGWC-68A									
Lab ID: 92490942006									
Collected: 08/13/20 15:25 Received: 08/14/20 14:30 Matrix: Water									
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.63	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 18:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 18:02	7440-38-2	
Barium	0.088	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 18:02	7440-39-3	M1
Beryllium	ND	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 18:02	7440-41-7	
Cadmium	0.00021J	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 18:02	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 18:02	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 18:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 18:02	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 18:02	7439-93-2	
Molybdenum	0.19	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 18:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 18:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 18:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:02	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.076J	mg/L	0.10	0.050	1		08/18/20 19:11	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Sample: DGWC-69 Lab ID: 92490942007 Collected: 08/13/20 14:35 Received: 08/14/20 14:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.26	Std. Units			1		08/20/20 17:23		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0019J	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 18:25	7440-36-0	
Arsenic	0.029	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 18:25	7440-38-2	
Barium	0.13	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 18:25	7440-39-3	
Beryllium	0.000063J	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 18:25	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 18:25	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 18:25	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 18:25	7440-48-4	
Lead	0.00059J	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 18:25	7439-92-1	
Lithium	0.0031J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 18:25	7439-93-2	
Molybdenum	0.011	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 18:25	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 18:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 18:25	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:04	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Fluoride	0.084J	mg/L	0.10	0.050	1		08/18/20 19:25	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: EB-2		Lab ID: 92490942008		Collected: 08/13/20 17:30	Received: 08/14/20 14:30	Matrix: Water			
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA							
Antimony	0.00049J	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 18:31	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 18:31	7440-38-2	
Barium	ND	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 18:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 18:31	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 18:31	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 18:31	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 18:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 18:31	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 18:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 18:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 18:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 18:31	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA							
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:07	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Fluoride	ND	mg/L	0.10	0.050	1		08/18/20 19:39	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

QC Batch: 560481 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490942001, 92490942002, 92490942003, 92490942004, 92490942005

METHOD BLANK: 2973740 Matrix: Water
Associated Lab Samples: 92490942001, 92490942002, 92490942003, 92490942004, 92490942005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/20/20 17:20	
Arsenic	mg/L	ND	0.0050	0.00078	08/20/20 17:20	
Barium	mg/L	ND	0.010	0.00071	08/20/20 17:20	
Beryllium	mg/L	ND	0.0030	0.000046	08/20/20 17:20	
Cadmium	mg/L	ND	0.0025	0.00012	08/20/20 17:20	
Chromium	mg/L	ND	0.010	0.00055	08/20/20 17:20	
Cobalt	mg/L	ND	0.0050	0.00038	08/20/20 17:20	
Lead	mg/L	ND	0.0050	0.000036	08/20/20 17:20	
Lithium	mg/L	ND	0.030	0.00081	08/20/20 17:20	
Molybdenum	mg/L	ND	0.010	0.00069	08/20/20 17:20	
Selenium	mg/L	ND	0.010	0.0016	08/20/20 17:20	
Thallium	mg/L	ND	0.0010	0.00014	08/20/20 17:20	

LABORATORY CONTROL SAMPLE: 2973741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	102	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.11	105	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2973742 2973743

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92490503010 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	108	103	75-125	5	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	102	97	75-125	5	20	
Barium	mg/L	0.036	0.1	0.1	0.14	0.13	107	91	75-125	12	20	
Beryllium	mg/L	0.00024J	0.1	0.1	0.090	0.086	90	86	75-125	4	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Parameter	Units	2973742		2973743		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92490503010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	0.00080J	0.1	0.1	0.098	0.095	97	94	75-125	3	20	
Chromium	mg/L	ND	0.1	0.1	0.099	0.094	98	94	75-125	5	20	
Cobalt	mg/L	0.0018J	0.1	0.1	0.098	0.095	96	93	75-125	3	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.092	97	92	75-125	5	20	
Lithium	mg/L	0.0031J	0.1	0.1	0.095	0.092	92	88	75-125	4	20	
Molybdenum	mg/L	0.0057J	0.1	0.1	0.11	0.10	102	97	75-125	5	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.099	101	99	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.094	98	94	75-125	4	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

QC Batch: 560739 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92490942006, 92490942007, 92490942008

METHOD BLANK: 2974806 Matrix: Water
Associated Lab Samples: 92490942006, 92490942007, 92490942008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/19/20 17:51	
Arsenic	mg/L	ND	0.0050	0.00078	08/19/20 17:51	
Barium	mg/L	ND	0.010	0.00071	08/19/20 17:51	
Beryllium	mg/L	ND	0.0030	0.000046	08/19/20 17:51	
Cadmium	mg/L	ND	0.0025	0.00012	08/19/20 17:51	
Chromium	mg/L	ND	0.010	0.00055	08/19/20 17:51	
Cobalt	mg/L	ND	0.0050	0.00038	08/19/20 17:51	
Lead	mg/L	ND	0.0050	0.000036	08/19/20 17:51	
Lithium	mg/L	ND	0.030	0.00081	08/19/20 17:51	
Molybdenum	mg/L	ND	0.010	0.00069	08/19/20 17:51	
Selenium	mg/L	ND	0.010	0.0016	08/19/20 17:51	
Thallium	mg/L	ND	0.0010	0.00014	08/19/20 17:51	

LABORATORY CONTROL SAMPLE: 2974807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	111	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974808 2974809

Parameter	Units	2974808		2974809		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	0.1	0.11	0.11	114	109	75-125	5	20	
Arsenic	mg/L	ND	0.1	0.10	0.099	100	99	75-125	2	20	
Barium	mg/L	0.088	0.1	0.22	0.21	131	119	75-125	6	20 M1	
Beryllium	mg/L	ND	0.1	0.099	0.096	99	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Parameter	Units	2974808		2974809		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92490942006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	0.00021J	0.1	0.1	0.10	0.098	99	98	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	0	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.098	102	97	75-125	4	20		
Molybdenum	mg/L	0.19	0.1	0.1	0.31	0.29	122	105	75-125	5	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.093	99	92	75-125	7	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

QC Batch:	560634	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490942001, 92490942002, 92490942003, 92490942004, 92490942005, 92490942006, 92490942007, 92490942008

METHOD BLANK: 2974354 Matrix: Water
Associated Lab Samples: 92490942001, 92490942002, 92490942003, 92490942004, 92490942005, 92490942006, 92490942007, 92490942008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/19/20 12:33	

LABORATORY CONTROL SAMPLE: 2974355

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974356 2974357

Parameter	Units	92490942001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0022	0.0025	86	98	75-125	13	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

QC Batch: 560576 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92490942001, 92490942002, 92490942003, 92490942004, 92490942005, 92490942006, 92490942007, 92490942008

METHOD BLANK: 2974090 Matrix: Water
Associated Lab Samples: 92490942001, 92490942002, 92490942003, 92490942004, 92490942005, 92490942006, 92490942007, 92490942008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/18/20 13:07	

LABORATORY CONTROL SAMPLE: 2974091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974092 2974093

Parameter	Units	92490804001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.82	2.5	2.5	3.3	3.3	100	101	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974094 2974095

Parameter	Units	92490867001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.37	2.5	2.5	3.0	3.1	107	107	90-110	1	10	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-37 Lab ID: 92490942001 Collected: 08/13/20 11:00 Received: 08/14/20 14:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.166 ± 0.103 (0.163) C:82% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.824 ± 0.429 (0.748) C:69% T:81%	pCi/L	09/08/20 11:52	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.990 ± 0.532 (0.911)	pCi/L	09/09/20 08:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-38 Lab ID: 92490942002 Collected: 08/13/20 10:00 Received: 08/14/20 14:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.132 ± 0.113 (0.200) C:74% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.316 ± 0.282 (0.756) C:66% T:77%	pCi/L	09/08/20 11:53	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.132 ± 0.395 (0.956)	pCi/L	09/09/20 08:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-39 **Lab ID: 92490942003** Collected: 08/13/20 15:05 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.255 ± 0.164 (0.283) C:81% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.371 ± 0.469 (0.999) C:64% T:78%	pCi/L	09/08/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.626 ± 0.633 (1.28)	pCi/L	09/09/20 08:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-40 **Lab ID: 92490942004** Collected: 08/13/20 11:22 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.193 ± 0.129 (0.218) C:79% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.41 ± 0.556 (0.875) C:64% T:87%	pCi/L	09/08/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.60 ± 0.685 (1.09)	pCi/L	09/09/20 08:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-67 **Lab ID: 92490942005** Collected: 08/13/20 16:25 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.305 ± 0.125 (0.171) C:87% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.592 ± 0.415 (0.803) C:68% T:84%	pCi/L	09/08/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.897 ± 0.540 (0.974)	pCi/L	09/09/20 08:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-68A **Lab ID: 92490942006** Collected: 08/13/20 15:25 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.160 ± 0.111 (0.187) C:81% T:NA	pCi/L	08/31/20 19:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.30 ± 0.619 (1.08) C:64% T:76%	pCi/L	09/08/20 12:16	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.46 ± 0.730 (1.27)	pCi/L	09/09/20 14:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: DGWC-69 **Lab ID: 92490942007** Collected: 08/13/20 14:35 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	1.54 ± 0.314 (0.171) C:82% T:NA	pCi/L	08/31/20 18:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.12 ± 0.550 (0.959) C:65% T:76%	pCi/L	09/08/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.66 ± 0.864 (1.13)	pCi/L	09/09/20 14:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Sample: EB-2 **Lab ID: 92490942008** Collected: 08/13/20 17:30 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0684 ± 0.0776 (0.142) C:88% T:NA	pCi/L	08/31/20 18:35	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.501 ± 0.409 (0.820) C:66% T:88%	pCi/L	09/08/20 11:53	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.569 ± 0.487 (0.962)	pCi/L	09/09/20 14:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92490942

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92490942001	DGWC-37				
92490942002	DGWC-38				
92490942003	DGWC-39				
92490942004	DGWC-40				
92490942005	DGWC-67				
92490942006	DGWC-68A				
92490942007	DGWC-69				
92490942001	DGWC-37	EPA 3005A	560481	EPA 6020B	560487
92490942002	DGWC-38	EPA 3005A	560481	EPA 6020B	560487
92490942003	DGWC-39	EPA 3005A	560481	EPA 6020B	560487
92490942004	DGWC-40	EPA 3005A	560481	EPA 6020B	560487
92490942005	DGWC-67	EPA 3005A	560481	EPA 6020B	560487
92490942006	DGWC-68A	EPA 3005A	560739	EPA 6020B	560802
92490942007	DGWC-69	EPA 3005A	560739	EPA 6020B	560802
92490942008	EB-2	EPA 3005A	560739	EPA 6020B	560802
92490942001	DGWC-37	EPA 7470A	560634	EPA 7470A	560773
92490942002	DGWC-38	EPA 7470A	560634	EPA 7470A	560773
92490942003	DGWC-39	EPA 7470A	560634	EPA 7470A	560773
92490942004	DGWC-40	EPA 7470A	560634	EPA 7470A	560773
92490942005	DGWC-67	EPA 7470A	560634	EPA 7470A	560773
92490942006	DGWC-68A	EPA 7470A	560634	EPA 7470A	560773
92490942007	DGWC-69	EPA 7470A	560634	EPA 7470A	560773
92490942008	EB-2	EPA 7470A	560634	EPA 7470A	560773
92490942001	DGWC-37	EPA 9315	411372		
92490942002	DGWC-38	EPA 9315	411372		
92490942003	DGWC-39	EPA 9315	411372		
92490942004	DGWC-40	EPA 9315	411372		
92490942005	DGWC-67	EPA 9315	411372		
92490942006	DGWC-68A	EPA 9315	411372		
92490942007	DGWC-69	EPA 9315	411372		
92490942008	EB-2	EPA 9315	411372		
92490942001	DGWC-37	EPA 9320	411433		
92490942002	DGWC-38	EPA 9320	411433		
92490942003	DGWC-39	EPA 9320	411433		
92490942004	DGWC-40	EPA 9320	411433		
92490942005	DGWC-67	EPA 9320	411433		
92490942006	DGWC-68A	EPA 9320	411433		
92490942007	DGWC-69	EPA 9320	411433		
92490942008	EB-2	EPA 9320	411433		
92490942001	DGWC-37	Total Radium Calculation	413004		
92490942002	DGWC-38	Total Radium Calculation	413004		
92490942003	DGWC-39	Total Radium Calculation	413004		
92490942004	DGWC-40	Total Radium Calculation	413004		
92490942005	DGWC-67	Total Radium Calculation	413004		
92490942006	DGWC-68A	Total Radium Calculation	413154		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92490942

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92490942007	DGWC-69	Total Radium Calculation	413154		
92490942008	EB-2	Total Radium Calculation	413154		
92490942001	DGWC-37	EPA 300.0 Rev 2.1 1993	560576		
92490942002	DGWC-38	EPA 300.0 Rev 2.1 1993	560576		
92490942003	DGWC-39	EPA 300.0 Rev 2.1 1993	560576		
92490942004	DGWC-40	EPA 300.0 Rev 2.1 1993	560576		
92490942005	DGWC-67	EPA 300.0 Rev 2.1 1993	560576		
92490942006	DGWC-68A	EPA 300.0 Rev 2.1 1993	560576		
92490942007	DGWC-69	EPA 300.0 Rev 2.1 1993	560576		
92490942008	EB-2	EPA 300.0 Rev 2.1 1993	560576		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

WO#: 92490942



92490942

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals		Report To: Jozu Abraham		Attention: scsinvoices@southernco.com	
Address: 2480 Maner Road Atlanta, GA 30339		Copy To: Golder		Company Name:	
Email: jzabraham@southernco.com		Purchase Order #:		Address:	
Phone: (404) 506-7239		Project Name: Plant McDonough AP-1		Pace Quote:	
Requested Due Date:		Project #: *65849618		Pace Profile #:	
				Regulatory Agency:	
				State / Location:	
				GA	

Page: 1 Of 1

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9) ; - Sample IDs must be unique	MATRIX Drinking Water DW Waste Water WW Product P Soil/Sediment S Oil O Sludge L Air AR Other OT Tissue TC	CODE DW WW P S O L AR OT TC	MATRIX CODE (See valid codes to list)	SAMPLE TYPE (C-CRAB C-COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test	Y/N	Requested Analysis Filtered (Y/N)			Residual Criteria (Y/N)			
										Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Na2S2O3	Methanol	Other	App IV Metals*	Fluoride			Radium 226/228						
										Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	Y/N	Y/N		Y/N	Y/N	
1	DGWC-37	WT	G	8/13/2020	1100		4	1	3									X	X	X							pH: 6.34	
2	DGWC-38	WT	G	8/13/2020	1300		4	1	3									X	X	X							pH: 6.05; see comment below	
3	DGWC-39	WT	G	8/13/2020	1505		4	1	3									X	X	X							pH: 6.39	
4	DGWC-40	WT	G	8/13/2020	1122		4	1	3									X	X	X							pH: 4.65	
5	DGWC-67	WT	G	8/13/2020	1625		4	1	3									X	X	X							pH: 6.28	
6	DGWC-68A	WT	G	8/13/2020	1525		4	1	3									X	X	X							pH: 6.63	
7	DGWC-69	WT	G	8/13/2020	1435		4	1	3									X	X	X							pH: 6.26	
8	EB-2	WT	G	8/13/2020	1730		4	1	3									X	X	X								
9																												
10																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App IV metals = Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mn, Se, Tl	Jude Waguespack	08/14/20	1430	Charles Hunt	8/14/20	1430	3.1 Y N Y
DGWC-38: Preservative flushed from (1) Radium bottle							

SAMPLER NAME AND SIGNATURE		TEMP IN C	Received on ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
SAMPLER NAME Jude Waguespack						
SAMPLER SIGNATURE <i>Jude Waguespack</i>	DATE Signed: 08/14/20					



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

WO#: 92490942

PM: KLH1

Due Date: 08/28/20

CLIENT: GA-GA Power

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/BD15 (water) DOC, LLHg
Bottom half of box is to list number of bottle.

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	
	1																											
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											

BP IN - RAD

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification
Out of hold, incorrect preservative, out of temp, incorrect containers



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: JJY
Date: 8/21/2020
Worklist: 55663
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1984358
MB concentration:	0.048
M/B Counting Uncertainty:	0.101
MB MDC:	0.237
MB Numerical Performance Indicator:	0.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS55663	LCS/D55663
Count Date:	8/24/2020	8/24/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.505	0.503
Target Conc. (pCi/L, g, F):	4.760	4.776
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	4.133	5.003
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.579	0.603
Numerical Performance Indicator:	-2.12	0.74
Percent Recovery:	86.81%	104.76%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55663	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS/D55663	
Sample Result (pCi/L, g, F):	4.133	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.579	
Sample Duplicate Result (pCi/L, g, F):	5.003	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.603	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-2.043	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	18.74%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

OK 8/24/2020

*JJY
8-24-20*



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: JJY
Date: 8/21/2020
Worklist: 55663
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1984358
MB concentration:	0.048
M/B Counting Uncertainty:	0.101
MB MDC:	0.237
MB Numerical Performance Indicator:	0.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCSD55663
Count Date:	8/24/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	4.760	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.133	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.579	
Numerical Performance Indicator:	-2.12	
Percent Recovery:	86.81%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92490503014	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490503014DUP	
Sample Result (pCi/L, g, F):	0.870	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.275	
Sample Duplicate Result (pCi/L, g, F):	0.731	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.265	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.709	92490503014
Duplicate RPD:	17.33%	92490503014DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten signature: JJY 8/24/2020

Handwritten initials: JJY 8-24-20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 8/31/2020
Worklist: 55836
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1989991
MB concentration:	-0.043
M/B Counting Uncertainty:	0.080
MB MDC:	0.185
MB Numerical Performance Indicator:	-1.06
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCSD55836
Count Date:	9/1/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	4.798	
Uncertainty (Calculated):	0.058	
Result (pCi/L, g, F):	4.493	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	
Numerical Performance Indicator:	-0.79	
Percent Recovery:	93.65%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92490503020	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490503020DUP	
Sample Result (pCi/L, g, F):	0.717	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.321	
Sample Duplicate Result (pCi/L, g, F):	0.626	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.314	
Are sample and/or duplicate results below RL?:	See Below ##	
Duplicate Numerical Performance Indicator:	0.399	92490503020
Duplicate RPD:	13.61%	92490503020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

van 9/1/2020

Analyst



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 8/31/2020
Worklist: 55836
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1989991	
MB concentration:	-0.043	
M/B Counting Uncertainty:	0.080	
MB MDC:	0.185	
MB Numerical Performance Indicator:	-1.06	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55836	LCS55836
Count Date:	9/1/2020	9/1/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.501	0.500
Target Conc. (pCi/L, g, F):	4.798	4.808
Uncertainty (Calculated):	0.058	0.058
Result (pCi/L, g, F):	4.493	5.168
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	0.855
Numerical Performance Indicator:	-0.79	0.82
Percent Recovery:	93.65%	107.49%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55836	Enter Duplicate sample IDs if other than the space below.
Duplicate Sample I.D.:	LCS55836	
Sample Result (pCi/L, g, F):	4.493	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.750	
Sample Duplicate Result (pCi/L, g, F):	5.168	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.855	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.163	92490503020
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.75%	92490503020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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uam



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 9/1/2020
Worklist: 55837
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1989993
MB concentration:	0.067
M/B Counting Uncertainty:	0.195
MB MDC:	0.481
MB Numerical Performance Indicator:	0.67
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD55837	LCSD55837
Count Date:	9/2/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.738	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	5.286	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.868	
Numerical Performance Indicator:	1.24	
Percent Recovery:	111.58%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSD (Y or N)?	N
Sample I.D.:	92490963004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490963004DUP	
Sample Result (pCi/L, g, F):	0.116	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.301	
Sample Duplicate Result (pCi/L, g, F):	0.448	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.277	
Are sample and/or duplicate results below RL? See Below ##		
Duplicate Numerical Performance Indicator:	-1.591	92490963004
Duplicate RPD:	117.70%	92490963004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision.

N/A
LAM 9/2/2020

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LAM 9/2/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 9/1/2020
Worklist: 55837
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1989993	
MB concentration:	0.067	
M/B Counting Uncertainty:	0.195	
MB MDC:	0.481	
MB Numerical Performance Indicator:	0.67	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD55837	LCSD55837
Count Date:	9/2/2020	9/2/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.508	0.501
Target Conc. (pCi/L, g, F):	4.738	4.797
Uncertainty (Calculated):	0.057	0.058
Result (pCi/L, g, F):	5.286	4.329
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.868	0.805
Numerical Performance Indicator:	1.24	-1.13
Percent Recovery:	111.58%	90.26%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCSD55837	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55837	
Sample Result (pCi/L, g, F):	5.286	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.868	
Sample Duplicate Result (pCi/L, g, F):	4.329	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.805	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.584	92490963004
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	21.13%	92490963004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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Handwritten date: 9/1/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 8/24/2020
Worklist: 55667
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1984702
MB concentration:	0.731
M/B 2 Sigma CSU:	0.425
MB MDC:	0.763
MB Numerical Performance Indicator:	3.37
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55667	LCSD55667
Count Date:	8/27/2020	8/27/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.637	38.637
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.809	0.805
Target Conc. (pCi/L, g, F):	4.773	4.800
Uncertainty (Calculated):	0.234	0.235
Result (pCi/L, g, F):	6.454	5.781
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.448	1.299
Numerical Performance Indicator:	2.25	1.45
Percent Recovery:	135.21%	120.42%
Status vs Numerical Indicator:	Warning	N/A
Status vs Recovery:	Fail High**	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55667	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55667	
Sample Result (pCi/L, g, F):	6.454	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.448	
Sample Duplicate Result (pCi/L, g, F):	5.781	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.299	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.678	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.57%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

** Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

**If all sample results are below MDC, the batch is acceptable, otherwise this batch must be re-prepped due to LCS failure.

LCS NPI 23
557
8-28-2020

JJ 8-28-20

DU 8/28/20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 9/2/2020
Worklist: 55850
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1990338
MB concentration:	0.527
M/B 2 Sigma CSU:	0.407
MB MDC:	0.796
MB Numerical Performance Indicator:	2.54
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55850	LCSD55850
Count Date:	9/8/2020	9/8/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.485	38.485
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.807	0.803
Target Conc. (pCi/L, g, F):	4.769	4.794
Uncertainty (Calculated):	0.234	0.235
Result (pCi/L, g, F):	4.945	4.330
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.130	1.089
Numerical Performance Indicator:	0.30	-0.82
Percent Recovery:	103.69%	90.32%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55850	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55850	
Sample Result (pCi/L, g, F):	4.945	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.130	
Sample Duplicate Result (pCi/L, g, F):	4.330	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.089	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.769	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.79%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten signature/initials: J/ 9/9/20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 8/31/2020
Worklist: 55836
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1989991
MB concentration:	-0.043
M/B Counting Uncertainty:	0.080
MB MDC:	0.185
MB Numerical Performance Indicator:	-1.06
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCSD55836
Count Date:	9/1/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	4.798	
Uncertainty (Calculated):	0.058	
Result (pCi/L, g, F):	4.493	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	
Numerical Performance Indicator:	-0.79	
Percent Recovery:	93.65%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92490503020	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490503020DUP	
Sample Result (pCi/L, g, F):	0.717	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.321	
Sample Duplicate Result (pCi/L, g, F):	0.626	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.314	
Are sample and/or duplicate results below RL?:	See Below ##	
Duplicate Numerical Performance Indicator:	0.399	92490503020
Duplicate RPD:	13.61%	92490503020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

9/1/2020

Analyst



Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 8/31/2020
Worklist: 55836
Matrix: DW

Method Blank Assessment		
MB Sample ID	1989991	
MB concentration:	-0.043	
M/B Counting Uncertainty:	0.080	
MB MDC:	0.185	
MB Numerical Performance Indicator:	-1.06	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55836	LCS55836
Count Date:	9/1/2020	9/1/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.501	0.500
Target Conc. (pCi/L, g, F):	4.798	4.808
Uncertainty (Calculated):	0.058	0.058
Result (pCi/L, g, F):	4.493	5.168
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	0.855
Numerical Performance Indicator:	-0.79	0.82
Percent Recovery:	93.65%	107.49%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55836	Enter Duplicate sample IDs if other than the space below.
Duplicate Sample I.D.:	LCS55836	
Sample Result (pCi/L, g, F):	4.493	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.750	
Sample Duplicate Result (pCi/L, g, F):	5.168	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.855	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.163	92490503020
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.75%	92490503020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

uam 9/1/2020

uam



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 9/2/2020
Worklist: 55850
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1990338
MB concentration:	0.527
M/B 2 Sigma CSU:	0.407
MB MDC:	0.796
MB Numerical Performance Indicator:	2.54
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55850	LCSD55850
Count Date:	9/8/2020	9/8/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.485	38.485
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.807	0.803
Target Conc. (pCi/L, g, F):	4.769	4.794
Uncertainty (Calculated):	0.234	0.235
Result (pCi/L, g, F):	4.945	4.330
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.130	1.089
Numerical Performance Indicator:	0.30	-0.82
Percent Recovery:	103.69%	90.32%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55850	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55850	
Sample Result (pCi/L, g, F):	4.945	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.130	
Sample Duplicate Result (pCi/L, g, F):	4.330	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.089	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.769	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.79%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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September 14, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 14, 2020 and August 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tyler Forney for
Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92490963001	B-62	Water	08/13/20 17:06	08/14/20 14:30
92490963002	B-77	Water	08/13/20 16:55	08/14/20 14:30
92490963003	B-74	Water	08/14/20 11:34	08/14/20 14:30
92490963004	B-89	Water	08/14/20 10:03	08/14/20 14:30
92490963005	FD-3	Water	08/14/20 00:00	08/14/20 14:30
92490963006	B-83	Water	08/14/20 13:00	08/14/20 14:30
92490963007	B-88	Water	08/17/20 10:45	08/18/20 10:54
92490963008	B-100	Water	08/17/20 10:49	08/18/20 10:54
92490963009	B-56	Water	08/17/20 12:00	08/18/20 10:54
92490963010	B-3	Water	08/17/20 13:08	08/18/20 10:54
92490963011	B-82	Water	08/17/20 14:25	08/18/20 10:54
92490963012	B-93	Water	08/19/20 12:29	08/19/20 13:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92490963001	B-62	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490963002	B-77	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490963003	B-74	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490963004	B-89	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490963005	FD-3	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490963006	B-83	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92490963007	B-88	EPA 6020B	CW1	12	PASI-GA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92490963008	B-100	EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92490963009	B-56	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
92490963010	B-3	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
92490963011	B-82	EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92490963012	B-93	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
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PASI-GA = Pace Analytical Services - Peachtree Corners, GA
PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-62 **Lab ID: 92490963001** Collected: 08/13/20 17:06 Received: 08/14/20 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.40	Std. Units			1		08/20/20 17:22		
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6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 20:08	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 20:08	7440-38-2	
Barium	0.026	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 20:08	7440-39-3	
Beryllium	0.00011J	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 20:08	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 20:08	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 20:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 20:08	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 20:08	7439-92-1	
Lithium	0.0087J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 20:08	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 20:08	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 20:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 20:08	7440-28-0	

7470 Mercury

Analytical Method: EPA 7470A Preparation Method: EPA 7470A
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:09	7439-97-6	
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Fluoride	0.11	mg/L	0.10	0.050	1		08/20/20 06:20	16984-48-8	
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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-77 **Lab ID: 92490963002** Collected: 08/13/20 16:55 Received: 08/14/20 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.14	Std. Units			1		08/20/20 17:22		
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6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	0.00043J	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 20:14	7440-36-0	
Arsenic	0.0020J	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 20:14	7440-38-2	
Barium	0.11	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 20:14	7440-39-3	
Beryllium	0.00014J	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 20:14	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 20:14	7440-43-9	
Chromium	0.0021J	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 20:14	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 20:14	7440-48-4	
Lead	0.0016J	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 20:14	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 20:14	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 20:14	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 20:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 20:14	7440-28-0	

7470 Mercury

Analytical Method: EPA 7470A Preparation Method: EPA 7470A
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:11	7439-97-6	
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 06:34	16984-48-8	
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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Sample: B-74		Lab ID: 92490963003		Collected: 08/14/20 11:34		Received: 08/14/20 14:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.19	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 20:20	7440-36-0	
Arsenic	0.010	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 20:20	7440-38-2	
Barium	0.077	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 20:20	7440-39-3	
Beryllium	0.000076J	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 20:20	7440-41-7	
Cadmium	0.00026J	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 20:20	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 20:20	7440-47-3	
Cobalt	0.0023J	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 20:20	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 20:20	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 20:20	7439-93-2	
Molybdenum	0.052	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 20:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 20:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 20:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:14	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.16	mg/L	0.10	0.050	1		08/20/20 07:16	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-89 **Lab ID: 92490963004** Collected: 08/14/20 10:03 Received: 08/14/20 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	5.83	Std. Units			1		08/20/20 17:22		
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6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 20:26	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 20:26	7440-38-2	
Barium	0.031	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 20:26	7440-39-3	
Beryllium	0.000074J	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 20:26	7440-41-7	
Cadmium	0.00063J	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 20:26	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 20:26	7440-47-3	
Cobalt	0.0058	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 20:26	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 20:26	7439-92-1	
Lithium	0.0055J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 20:26	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 20:26	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 20:26	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 20:26	7440-28-0	

7470 Mercury

Analytical Method: EPA 7470A Preparation Method: EPA 7470A
Pace Analytical Services - Peachtree Corners, GA

Mercury	0.00014J	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:16	7439-97-6	
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 07:30	16984-48-8	
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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: FD-3		Lab ID: 92490963005		Collected: 08/14/20 00:00	Received: 08/14/20 14:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:30	08/19/20 20:31	7440-36-0		
Arsenic	0.0099	mg/L	0.0050	0.00078	1	08/18/20 18:30	08/19/20 20:31	7440-38-2		
Barium	0.074	mg/L	0.010	0.00071	1	08/18/20 18:30	08/19/20 20:31	7440-39-3		
Beryllium	0.000066J	mg/L	0.0030	0.000046	1	08/18/20 18:30	08/19/20 20:31	7440-41-7		
Cadmium	0.00021J	mg/L	0.0025	0.00012	1	08/18/20 18:30	08/19/20 20:31	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:30	08/19/20 20:31	7440-47-3		
Cobalt	0.0023J	mg/L	0.0050	0.00038	1	08/18/20 18:30	08/19/20 20:31	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:30	08/19/20 20:31	7439-92-1		
Lithium	0.0011J	mg/L	0.030	0.00081	1	08/18/20 18:30	08/19/20 20:31	7439-93-2		
Molybdenum	0.052	mg/L	0.010	0.00069	1	08/18/20 18:30	08/19/20 20:31	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:30	08/19/20 20:31	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:30	08/19/20 20:31	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:18	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	0.15	mg/L	0.10	0.050	1		08/20/20 07:44	16984-48-8		

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Sample: B-83		Lab ID: 92490963006		Collected: 08/14/20 13:00	Received: 08/14/20 14:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.59	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:26	08/20/20 18:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:26	08/20/20 18:20	7440-38-2	
Barium	0.056	mg/L	0.010	0.00071	1	08/18/20 18:26	08/20/20 18:20	7440-39-3	
Beryllium	0.00070J	mg/L	0.0030	0.000046	1	08/18/20 18:26	08/21/20 15:22	7440-41-7	
Cadmium	0.00037J	mg/L	0.0025	0.00012	1	08/18/20 18:26	08/20/20 18:20	7440-43-9	
Chromium	0.0050J	mg/L	0.010	0.00055	1	08/18/20 18:26	08/20/20 18:20	7440-47-3	
Cobalt	0.021	mg/L	0.0050	0.00038	1	08/18/20 18:26	08/20/20 18:20	7440-48-4	
Lead	0.00092J	mg/L	0.0050	0.000036	1	08/18/20 18:26	08/20/20 18:20	7439-92-1	
Lithium	0.0045J	mg/L	0.030	0.00081	1	08/18/20 18:26	08/20/20 18:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:26	08/20/20 18:20	7439-98-7	
Selenium	0.015	mg/L	0.010	0.0016	1	08/18/20 18:26	08/20/20 18:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:26	08/20/20 18:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/18/20 12:00	08/19/20 13:21	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.050J	mg/L	0.10	0.050	1		08/20/20 07:58	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-88 **Lab ID: 92490963007** Collected: 08/17/20 10:45 Received: 08/18/20 10:54 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	5.76	Std. Units			1		08/20/20 17:22		
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6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:26	08/20/20 18:26	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:26	08/20/20 18:26	7440-38-2	
Barium	0.022	mg/L	0.010	0.00071	1	08/18/20 18:26	08/20/20 18:26	7440-39-3	
Beryllium	0.0014J	mg/L	0.0030	0.000046	1	08/18/20 18:26	08/21/20 15:28	7440-41-7	
Cadmium	0.0018J	mg/L	0.0025	0.00012	1	08/18/20 18:26	08/20/20 18:26	7440-43-9	
Chromium	0.0014J	mg/L	0.010	0.00055	1	08/18/20 18:26	08/20/20 18:26	7440-47-3	
Cobalt	0.0031J	mg/L	0.0050	0.00038	1	08/18/20 18:26	08/20/20 18:26	7440-48-4	
Lead	0.00081J	mg/L	0.0050	0.000036	1	08/18/20 18:26	08/20/20 18:26	7439-92-1	
Lithium	0.0060J	mg/L	0.030	0.00081	1	08/18/20 18:26	08/20/20 18:26	7439-93-2	
Molybdenum	0.0012J	mg/L	0.010	0.00069	1	08/18/20 18:26	08/20/20 18:26	7439-98-7	
Selenium	0.0017J	mg/L	0.010	0.0016	1	08/18/20 18:26	08/20/20 18:26	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:26	08/20/20 18:26	7440-28-0	

7470 Mercury

Analytical Method: EPA 7470A Preparation Method: EPA 7470A
Pace Analytical Services - Peachtree Corners, GA

Mercury	0.00011J	mg/L	0.00020	0.000078	1	08/19/20 12:30	08/20/20 15:05	7439-97-6	B
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 16:15	16984-48-8	
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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-100		Lab ID: 92490963008		Collected: 08/17/20 10:49		Received: 08/18/20 10:54		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.02	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0013J	mg/L	0.0030	0.00028	1	08/18/20 18:26	08/20/20 19:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:26	08/20/20 19:00	7440-38-2	
Barium	0.015	mg/L	0.010	0.00071	1	08/18/20 18:26	08/20/20 19:00	7440-39-3	
Beryllium	0.00040J	mg/L	0.0030	0.000046	1	08/18/20 18:26	08/21/20 15:45	7440-41-7	
Cadmium	0.00059J	mg/L	0.0025	0.00012	1	08/18/20 18:26	08/20/20 19:00	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:26	08/20/20 19:00	7440-47-3	
Cobalt	0.077	mg/L	0.0050	0.00038	1	08/18/20 18:26	08/20/20 19:00	7440-48-4	
Lead	0.00088J	mg/L	0.0050	0.000036	1	08/18/20 18:26	08/20/20 19:00	7439-92-1	
Lithium	0.0013J	mg/L	0.030	0.00081	1	08/18/20 18:26	08/20/20 19:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:26	08/20/20 19:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:26	08/20/20 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:26	08/20/20 19:00	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00011J	mg/L	0.00020	0.000078	1	08/19/20 12:30	08/20/20 15:07	7439-97-6	B
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 16:59	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Sample: B-56		Lab ID: 92490963009		Collected: 08/17/20 12:00		Received: 08/18/20 10:54		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.82	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:26	08/20/20 19:06	7440-36-0	
Arsenic	0.0032J	mg/L	0.0050	0.00078	1	08/18/20 18:26	08/20/20 19:06	7440-38-2	
Barium	0.030	mg/L	0.010	0.00071	1	08/18/20 18:26	08/20/20 19:06	7440-39-3	
Beryllium	0.0013J	mg/L	0.0030	0.000046	1	08/18/20 18:26	08/21/20 15:50	7440-41-7	
Cadmium	0.00029J	mg/L	0.0025	0.00012	1	08/18/20 18:26	08/20/20 19:06	7440-43-9	
Chromium	0.0014J	mg/L	0.010	0.00055	1	08/18/20 18:26	08/20/20 19:06	7440-47-3	
Cobalt	0.042	mg/L	0.0050	0.00038	1	08/18/20 18:26	08/20/20 19:06	7440-48-4	
Lead	0.00022J	mg/L	0.0050	0.000036	1	08/18/20 18:26	08/20/20 19:06	7439-92-1	
Lithium	0.0056J	mg/L	0.030	0.00081	1	08/18/20 18:26	08/20/20 19:06	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:26	08/20/20 19:06	7439-98-7	
Selenium	0.011	mg/L	0.010	0.0016	1	08/18/20 18:26	08/20/20 19:06	7782-49-2	
Thallium	0.00016J	mg/L	0.0010	0.00014	1	08/18/20 18:26	08/20/20 19:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00016J	mg/L	0.00020	0.000078	1	08/19/20 12:30	08/20/20 15:10	7439-97-6	B
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.19	mg/L	0.10	0.050	1		08/20/20 17:14	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-3		Lab ID: 92490963010		Collected: 08/17/20 13:08		Received: 08/18/20 10:54		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.51	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:26	08/20/20 19:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:26	08/20/20 19:12	7440-38-2	
Barium	0.026	mg/L	0.010	0.00071	1	08/18/20 18:26	08/20/20 19:12	7440-39-3	
Beryllium	0.0035	mg/L	0.0030	0.000046	1	08/18/20 18:26	08/21/20 15:56	7440-41-7	
Cadmium	0.00077J	mg/L	0.0025	0.00012	1	08/18/20 18:26	08/20/20 19:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:26	08/20/20 19:12	7440-47-3	
Cobalt	0.061	mg/L	0.0050	0.00038	1	08/18/20 18:26	08/20/20 19:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/18/20 18:26	08/20/20 19:12	7439-92-1	
Lithium	0.58	mg/L	0.030	0.00081	1	08/18/20 18:26	08/20/20 19:12	7439-93-2	
Molybdenum	0.0015J	mg/L	0.010	0.00069	1	08/18/20 18:26	08/20/20 19:12	7439-98-7	
Selenium	0.0021J	mg/L	0.010	0.0016	1	08/18/20 18:26	08/20/20 19:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:26	08/20/20 19:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00010J	mg/L	0.00020	0.000078	1	08/19/20 12:30	08/20/20 15:12	7439-97-6	B
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.077J	mg/L	0.10	0.050	1		08/20/20 17:29	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Sample: B-82		Lab ID: 92490963011		Collected: 08/17/20 14:25	Received: 08/18/20 10:54	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.48	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/18/20 18:26	08/20/20 19:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/18/20 18:26	08/20/20 19:17	7440-38-2	
Barium	0.024	mg/L	0.010	0.00071	1	08/18/20 18:26	08/20/20 19:17	7440-39-3	
Beryllium	0.0014J	mg/L	0.0030	0.000046	1	08/18/20 18:26	08/21/20 16:24	7440-41-7	
Cadmium	0.00058J	mg/L	0.0025	0.00012	1	08/18/20 18:26	08/20/20 19:17	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/18/20 18:26	08/20/20 19:17	7440-47-3	
Cobalt	0.0028J	mg/L	0.0050	0.00038	1	08/18/20 18:26	08/20/20 19:17	7440-48-4	
Lead	0.000059J	mg/L	0.0050	0.000036	1	08/18/20 18:26	08/20/20 19:17	7439-92-1	
Lithium	0.0016J	mg/L	0.030	0.00081	1	08/18/20 18:26	08/20/20 19:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/18/20 18:26	08/20/20 19:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/18/20 18:26	08/20/20 19:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/18/20 18:26	08/20/20 19:17	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00011J	mg/L	0.00020	0.000078	1	08/19/20 12:30	08/20/20 15:14	7439-97-6	B
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 17:44	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-93		Lab ID: 92490963012		Collected: 08/19/20 12:29		Received: 08/19/20 13:55		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.78	Std. Units			1		08/20/20 17:22		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/24/20 15:05	08/25/20 17:00	7440-36-0	
Arsenic	0.0013J	mg/L	0.0050	0.00078	1	08/24/20 15:05	08/25/20 17:00	7440-38-2	
Barium	0.018	mg/L	0.010	0.00071	1	08/24/20 15:05	08/25/20 17:00	7440-39-3	
Beryllium	0.015	mg/L	0.0030	0.000046	1	08/24/20 15:05	08/25/20 17:00	7440-41-7	
Cadmium	0.00077J	mg/L	0.0025	0.00012	1	08/24/20 15:05	08/25/20 17:00	7440-43-9	
Chromium	0.00057J	mg/L	0.010	0.00055	1	08/24/20 15:05	08/25/20 17:00	7440-47-3	
Cobalt	0.068	mg/L	0.0050	0.00038	1	08/24/20 15:05	08/25/20 17:00	7440-48-4	
Lead	0.00012J	mg/L	0.0050	0.000036	1	08/24/20 15:05	08/26/20 17:06	7439-92-1	
Lithium	0.011J	mg/L	0.030	0.00081	1	08/24/20 15:05	08/25/20 17:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:05	08/25/20 17:00	7439-98-7	
Selenium	0.018	mg/L	0.010	0.0016	1	08/24/20 15:05	08/25/20 17:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:05	08/26/20 17:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00026	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:52	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.32	mg/L	0.10	0.050	1		08/21/20 03:44	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

QC Batch:	560739	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490963001, 92490963002, 92490963003, 92490963004, 92490963005

METHOD BLANK: 2974806 Matrix: Water

Associated Lab Samples: 92490963001, 92490963002, 92490963003, 92490963004, 92490963005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/19/20 17:51	
Arsenic	mg/L	ND	0.0050	0.00078	08/19/20 17:51	
Barium	mg/L	ND	0.010	0.00071	08/19/20 17:51	
Beryllium	mg/L	ND	0.0030	0.000046	08/19/20 17:51	
Cadmium	mg/L	ND	0.0025	0.00012	08/19/20 17:51	
Chromium	mg/L	ND	0.010	0.00055	08/19/20 17:51	
Cobalt	mg/L	ND	0.0050	0.00038	08/19/20 17:51	
Lead	mg/L	ND	0.0050	0.000036	08/19/20 17:51	
Lithium	mg/L	ND	0.030	0.00081	08/19/20 17:51	
Molybdenum	mg/L	ND	0.010	0.00069	08/19/20 17:51	
Selenium	mg/L	ND	0.010	0.0016	08/19/20 17:51	
Thallium	mg/L	ND	0.0010	0.00014	08/19/20 17:51	

LABORATORY CONTROL SAMPLE: 2974807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	111	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974808 2974809

Parameter	Units	2974808		2974809		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	0.1	0.11	0.11	114	109	75-125	5	20	
Arsenic	mg/L	ND	0.1	0.10	0.099	100	99	75-125	2	20	
Barium	mg/L	0.088	0.1	0.22	0.21	131	119	75-125	6	20	M1
Beryllium	mg/L	ND	0.1	0.099	0.096	99	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Parameter	Units	2974808		2974809		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92490942006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	0.00021J	0.1	0.1	0.10	0.098	99	98	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	0	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.098	102	97	75-125	4	20		
Molybdenum	mg/L	0.19	0.1	0.1	0.31	0.29	122	105	75-125	5	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.093	99	92	75-125	7	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

QC Batch: 560791 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET
 Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490963006, 92490963007, 92490963008, 92490963009, 92490963010, 92490963011

METHOD BLANK: 2975067 Matrix: Water

Associated Lab Samples: 92490963006, 92490963007, 92490963008, 92490963009, 92490963010, 92490963011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/20/20 16:30	
Arsenic	mg/L	ND	0.0050	0.00078	08/20/20 16:30	
Barium	mg/L	ND	0.010	0.00071	08/20/20 16:30	
Beryllium	mg/L	ND	0.0030	0.000046	08/20/20 16:30	
Cadmium	mg/L	ND	0.0025	0.00012	08/20/20 16:30	
Chromium	mg/L	ND	0.010	0.00055	08/20/20 16:30	
Cobalt	mg/L	ND	0.0050	0.00038	08/20/20 16:30	
Lead	mg/L	ND	0.0050	0.000036	08/20/20 16:30	
Lithium	mg/L	ND	0.030	0.00081	08/20/20 16:30	
Molybdenum	mg/L	ND	0.010	0.00069	08/20/20 16:30	
Selenium	mg/L	ND	0.010	0.0016	08/20/20 16:30	
Thallium	mg/L	ND	0.0010	0.00014	08/20/20 16:30	

LABORATORY CONTROL SAMPLE: 2975068

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	103	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.11	109	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.11	113	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2975069 2975070

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92490963007 Result	Conc.	Conc.	Result							
Antimony	mg/L	ND	0.1	0.1	0.099	0.10	99	102	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20	
Barium	mg/L	0.022	0.1	0.1	0.12	0.12	99	99	75-125	0	20	
Beryllium	mg/L	0.0014J	0.1	0.1	0.094	0.095	92	93	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Parameter	Units	2975069		2975070		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92490963007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	0.0018J	0.1	0.1	0.10	0.10	99	98	75-125	1	20		
Chromium	mg/L	0.0014J	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Cobalt	mg/L	0.0031J	0.1	0.1	0.10	0.099	97	96	75-125	1	20		
Lead	mg/L	0.00081J	0.1	0.1	0.088	0.095	87	94	75-125	8	20		
Lithium	mg/L	0.0060J	0.1	0.1	0.095	0.096	89	90	75-125	1	20		
Molybdenum	mg/L	0.0012J	0.1	0.1	0.098	0.10	97	101	75-125	4	20		
Selenium	mg/L	0.0017J	0.1	0.1	0.098	0.10	96	100	75-125	4	20		
Thallium	mg/L	ND	0.1	0.1	0.085	0.094	85	94	75-125	10	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

QC Batch: 561963 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490963012

METHOD BLANK: 2980652 Matrix: Water
Associated Lab Samples: 92490963012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/25/20 16:08	
Arsenic	mg/L	ND	0.0050	0.00078	08/25/20 16:08	
Barium	mg/L	ND	0.010	0.00071	08/25/20 16:08	
Beryllium	mg/L	ND	0.0030	0.000046	08/25/20 16:08	
Cadmium	mg/L	ND	0.0025	0.00012	08/25/20 16:08	
Chromium	mg/L	ND	0.010	0.00055	08/25/20 16:08	
Cobalt	mg/L	ND	0.0050	0.00038	08/25/20 16:08	
Lead	mg/L	ND	0.0050	0.000036	08/26/20 16:20	
Lithium	mg/L	ND	0.030	0.00081	08/25/20 16:08	
Molybdenum	mg/L	ND	0.010	0.00069	08/25/20 16:08	
Selenium	mg/L	ND	0.010	0.0016	08/25/20 16:08	
Thallium	mg/L	ND	0.0010	0.00014	08/26/20 16:20	

LABORATORY CONTROL SAMPLE: 2980653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.098	98	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.097	97	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980654 2980655

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92491455013	Result	Conc.	Conc.							Result
Antimony	mg/L	0.00064J	0.1	0.1	0.10	0.10	101	99	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Barium	mg/L	0.12	0.1	0.1	0.24	0.23	115	114	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	0	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Parameter	Units	2980654		2980655		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92491455013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	0.00058J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Chromium	mg/L	0.0015J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Cobalt	mg/L	0.00040J	0.1	0.1	0.10	0.10	99	99	75-125	0	20	
Lead	mg/L	0.00035J	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Lithium	mg/L	ND	0.1	0.1	0.096	0.098	96	97	75-125	1	20	
Molybdenum	mg/L	0.00077J	0.1	0.1	0.10	0.10	102	99	75-125	2	20	
Selenium	mg/L	0.0028J	0.1	0.1	0.10	0.10	99	99	75-125	0	20	
Thallium	mg/L	0.00021J	0.1	0.1	0.094	0.093	94	93	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

QC Batch: 560634 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92490963001, 92490963002, 92490963003, 92490963004, 92490963005, 92490963006

METHOD BLANK: 2974354 Matrix: Water
Associated Lab Samples: 92490963001, 92490963002, 92490963003, 92490963004, 92490963005, 92490963006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/19/20 12:33	

LABORATORY CONTROL SAMPLE: 2974355

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2974356 2974357

Parameter	Units	2974356		2974357		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0022	0.0025	86	98	75-125	13	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

QC Batch: 560972 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92490963007, 92490963008, 92490963009, 92490963010, 92490963011

METHOD BLANK: 2975790 Matrix: Water
Associated Lab Samples: 92490963007, 92490963008, 92490963009, 92490963010, 92490963011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.00012J	0.00020	0.000078	08/20/20 14:39	

LABORATORY CONTROL SAMPLE: 2975791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2975792 2975793

Parameter	Units	2975792		2975793		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Mercury	mg/L	0.51 ug/L	0.0025	0.0025	0.0030	0.0025	101	81	75-125	18	20	M1,R1

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

QC Batch: 561894	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92490963012

METHOD BLANK: 2980088 Matrix: Water

Associated Lab Samples: 92490963012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/25/20 08:19	

LABORATORY CONTROL SAMPLE: 2980089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980090 2980091

Parameter	Units	2980090		2980091		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0023	0.0026	90	102	75-125	12	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

QC Batch: 561129 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92490963001, 92490963002, 92490963003, 92490963004, 92490963005, 92490963006

METHOD BLANK: 2976672 Matrix: Water
 Associated Lab Samples: 92490963001, 92490963002, 92490963003, 92490963004, 92490963005, 92490963006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/20/20 00:59	

LABORATORY CONTROL SAMPLE: 2976673

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976674 2976675

Parameter	Units	92491362001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Fluoride	mg/L	ND	2.5	2.5	2.9	2.9	113	115	90-110	1	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976676 2976677

Parameter	Units	92491256001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Fluoride	mg/L	0.28	2.5	2.5	2.8	2.8	99	99	90-110	0	10	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

QC Batch: 561131 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92490963007, 92490963008, 92490963009, 92490963010, 92490963011

METHOD BLANK: 2976682 Matrix: Water
Associated Lab Samples: 92490963007, 92490963008, 92490963009, 92490963010, 92490963011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/20/20 15:45	

LABORATORY CONTROL SAMPLE: 2976683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976684 2976685

Parameter	Units	92490963007		2976684		2976685		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	104	102	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2976686 2976687

Parameter	Units	92490847002		2976686		2976687		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	105	105	90-110	0	10	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

QC Batch: 561238	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92490963012

METHOD BLANK: 2977016 Matrix: Water

Associated Lab Samples: 92490963012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/21/20 01:16	

LABORATORY CONTROL SAMPLE: 2977017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977018 2977019

Parameter	Units	2977018		2977019		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	98	99	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977020 2977021

Parameter	Units	2977020		2977021		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	97	100	90-110	3	10	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: B-62 Lab ID: 92490963001 Collected: 08/13/20 17:06 Received: 08/14/20 14:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.647 ± 0.395 (0.610) C:75% T:NA	pCi/L	09/02/20 07:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.986 ± 0.474 (0.809) C:65% T:85%	pCi/L	09/09/20 12:03	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.63 ± 0.869 (1.42)	pCi/L	09/10/20 13:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-77 **Lab ID: 92490963002** Collected: 08/13/20 16:55 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.782 ± 0.417 (0.602) C:81% T:NA	pCi/L	09/02/20 07:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.39 ± 0.593 (0.977) C:66% T:78%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.17 ± 1.01 (1.58)	pCi/L	09/10/20 13:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-74 **Lab ID: 92490963003** Collected: 08/14/20 11:34 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.678 ± 0.362 (0.450) C:79% T:NA	pCi/L	09/02/20 08:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.989 ± 0.494 (0.872) C:66% T:84%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.67 ± 0.856 (1.32)	pCi/L	09/10/20 13:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-89 **Lab ID: 92490963004** Collected: 08/14/20 10:03 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.116 ± 0.302 (0.720) C:79% T:NA	pCi/L	09/02/20 07:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.37 ± 0.567 (0.907) C:64% T:82%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.49 ± 0.869 (1.63)	pCi/L	09/10/20 13:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: FD-3 **Lab ID: 92490963005** Collected: 08/14/20 00:00 Received: 08/14/20 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.113 ± 0.250 (0.588) C:86% T:NA	pCi/L	09/02/20 07:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.881 ± 0.508 (0.942) C:61% T:88%	pCi/L	09/09/20 12:04	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.994 ± 0.758 (1.53)	pCi/L	09/10/20 13:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: B-83 Lab ID: 92490963006 Collected: 08/14/20 13:00 Received: 08/14/20 14:30 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.367 ± 0.263 (0.414) C:91% T:NA	pCi/L	09/02/20 07:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.583 ± 0.517 (1.05) C:66% T:71%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.950 ± 0.780 (1.46)	pCi/L	09/10/20 13:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-88 **Lab ID: 92490963007** Collected: 08/17/20 10:45 Received: 08/18/20 10:54 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.556 ± 0.309 (0.385) C:93% T:NA	pCi/L	09/02/20 07:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.91 ± 0.689 (1.02) C:66% T:71%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.47 ± 0.998 (1.41)	pCi/L	09/10/20 13:23	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-100 **Lab ID: 92490963008** Collected: 08/17/20 10:49 Received: 08/18/20 10:54 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.277 ± 0.266 (0.509) C:92% T:NA	pCi/L	09/02/20 07:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.12 ± 0.565 (0.994) C:62% T:77%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.40 ± 0.831 (1.50)	pCi/L	09/10/20 13:23	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-56 **Lab ID: 92490963009** Collected: 08/17/20 12:00 Received: 08/18/20 10:54 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.436 ± 0.307 (0.501) C:89% T:NA	pCi/L	09/02/20 07:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.712 ± 0.484 (0.933) C:61% T:86%	pCi/L	09/09/20 12:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.15 ± 0.791 (1.43)	pCi/L	09/10/20 13:23	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-3 **Lab ID: 92490963010** Collected: 08/17/20 13:08 Received: 08/18/20 10:54 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.992 ± 0.457 (0.654) C:94% T:NA	pCi/L	09/02/20 07:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.784 ± 0.970 (2.06) C:34% T:74%	pCi/L	09/09/20 12:05	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.78 ± 1.43 (2.71)	pCi/L	09/10/20 13:23	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-82 **Lab ID: 92490963011** Collected: 08/17/20 14:25 Received: 08/18/20 10:54 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.119 ± 0.187 (0.404) C:91% T:NA	pCi/L	09/02/20 07:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.543 ± 0.463 (0.930) C:61% T:78%	pCi/L	09/09/20 12:05	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.662 ± 0.650 (1.33)	pCi/L	09/10/20 13:23	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Sample: B-93 **Lab ID: 92490963012** Collected: 08/19/20 12:29 Received: 08/19/20 13:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.725 ± 0.347 (0.405) C:96% T:NA	pCi/L	09/02/20 07:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.467 ± 0.517 (1.09) C:63% T:83%	pCi/L	09/09/20 12:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.19 ± 0.864 (1.50)	pCi/L	09/10/20 13:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH ASSESSMENT

Pace Project No.: 92490963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92490963001	B-62				
92490963002	B-77				
92490963003	B-74				
92490963004	B-89				
92490963006	B-83				
92490963007	B-88				
92490963008	B-100				
92490963009	B-56				
92490963010	B-3				
92490963011	B-82				
92490963012	B-93				
92490963001	B-62	EPA 3005A	560739	EPA 6020B	560802
92490963002	B-77	EPA 3005A	560739	EPA 6020B	560802
92490963003	B-74	EPA 3005A	560739	EPA 6020B	560802
92490963004	B-89	EPA 3005A	560739	EPA 6020B	560802
92490963005	FD-3	EPA 3005A	560739	EPA 6020B	560802
92490963006	B-83	EPA 3005A	560791	EPA 6020B	560801
92490963007	B-88	EPA 3005A	560791	EPA 6020B	560801
92490963008	B-100	EPA 3005A	560791	EPA 6020B	560801
92490963009	B-56	EPA 3005A	560791	EPA 6020B	560801
92490963010	B-3	EPA 3005A	560791	EPA 6020B	560801
92490963011	B-82	EPA 3005A	560791	EPA 6020B	560801
92490963012	B-93	EPA 3005A	561963	EPA 6020B	562039
92490963001	B-62	EPA 7470A	560634	EPA 7470A	560773
92490963002	B-77	EPA 7470A	560634	EPA 7470A	560773
92490963003	B-74	EPA 7470A	560634	EPA 7470A	560773
92490963004	B-89	EPA 7470A	560634	EPA 7470A	560773
92490963005	FD-3	EPA 7470A	560634	EPA 7470A	560773
92490963006	B-83	EPA 7470A	560634	EPA 7470A	560773
92490963007	B-88	EPA 7470A	560972	EPA 7470A	561213
92490963008	B-100	EPA 7470A	560972	EPA 7470A	561213
92490963009	B-56	EPA 7470A	560972	EPA 7470A	561213
92490963010	B-3	EPA 7470A	560972	EPA 7470A	561213
92490963011	B-82	EPA 7470A	560972	EPA 7470A	561213
92490963012	B-93	EPA 7470A	561894	EPA 7470A	562048
92490963001	B-62	EPA 9315	411373		
92490963002	B-77	EPA 9315	411373		
92490963003	B-74	EPA 9315	411373		
92490963004	B-89	EPA 9315	411373		
92490963005	FD-3	EPA 9315	411373		
92490963006	B-83	EPA 9315	411373		
92490963007	B-88	EPA 9315	411373		
92490963008	B-100	EPA 9315	411373		
92490963009	B-56	EPA 9315	411373		
92490963010	B-3	EPA 9315	411373		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH ASSESSMENT
Pace Project No.: 92490963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92490963011	B-82	EPA 9315	411373		
92490963012	B-93	EPA 9315	411373		
92490963001	B-62	EPA 9320	411435		
92490963002	B-77	EPA 9320	411435		
92490963003	B-74	EPA 9320	411435		
92490963004	B-89	EPA 9320	411435		
92490963005	FD-3	EPA 9320	411435		
92490963006	B-83	EPA 9320	411435		
92490963007	B-88	EPA 9320	411435		
92490963008	B-100	EPA 9320	411435		
92490963009	B-56	EPA 9320	411435		
92490963010	B-3	EPA 9320	411435		
92490963011	B-82	EPA 9320	411435		
92490963012	B-93	EPA 9320	411435		
92490963001	B-62	Total Radium Calculation	413340		
92490963002	B-77	Total Radium Calculation	413340		
92490963003	B-74	Total Radium Calculation	413340		
92490963004	B-89	Total Radium Calculation	413340		
92490963005	FD-3	Total Radium Calculation	413340		
92490963006	B-83	Total Radium Calculation	413340		
92490963007	B-88	Total Radium Calculation	413341		
92490963008	B-100	Total Radium Calculation	413341		
92490963009	B-56	Total Radium Calculation	413341		
92490963010	B-3	Total Radium Calculation	413341		
92490963011	B-82	Total Radium Calculation	413341		
92490963012	B-93	Total Radium Calculation	413342		
92490963001	B-62	EPA 300.0 Rev 2.1 1993	561129		
92490963002	B-77	EPA 300.0 Rev 2.1 1993	561129		
92490963003	B-74	EPA 300.0 Rev 2.1 1993	561129		
92490963004	B-89	EPA 300.0 Rev 2.1 1993	561129		
92490963005	FD-3	EPA 300.0 Rev 2.1 1993	561129		
92490963006	B-83	EPA 300.0 Rev 2.1 1993	561129		
92490963007	B-88	EPA 300.0 Rev 2.1 1993	561131		
92490963008	B-100	EPA 300.0 Rev 2.1 1993	561131		
92490963009	B-56	EPA 300.0 Rev 2.1 1993	561131		
92490963010	B-3	EPA 300.0 Rev 2.1 1993	561131		
92490963011	B-82	EPA 300.0 Rev 2.1 1993	561131		
92490963012	B-93	EPA 300.0 Rev 2.1 1993	561238		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power WO#: 92490963

PM: KLH1 Due Date: 08/28/20 CLIENT: GA-GA Power

Courier: Fed Ex UPS USPS Client Commercial Pace C Tracking #:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other ZIPLOC

Thermometer Used THR214 Type of Ice: Blue None Samples on ice, cooling process has begun

Cooler Temperature 3.8 Biological Tissue is Frozen: Yes No Date and Initials of person examining contents: Kew 8/18/20

Table with 16 rows of checklist items including Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: Field Data Required? Y / N Person Contacted: Date/Time: Comments/ Resolution:

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 9/1/2020
Worklist: 55837
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1989993
MB concentration:	0.067
M/B Counting Uncertainty:	0.195
MB MDC:	0.481
MB Numerical Performance Indicator:	0.67
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD55837	LCSD55837
Count Date:	9/2/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.738	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	5.286	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.868	
Numerical Performance Indicator:	1.24	
Percent Recovery:	111.58%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSD (Y or N)?	N
Sample I.D.:	92490963004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92490963004DUP	
Sample Result (pCi/L, g, F):	0.116	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.301	
Sample Duplicate Result (pCi/L, g, F):	0.448	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.277	
Are sample and/or duplicate results below RL? See Below ##		
Duplicate Numerical Performance Indicator:	-1.591	92490963004
Duplicate RPD:	117.70%	92490963004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision.

N/A
LAM 9/2/2020

Handwritten signature/initials

LAM 9/2/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 9/1/2020
Worklist: 55837
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1989993	
MB concentration:	0.067	
M/B Counting Uncertainty:	0.195	
MB MDC:	0.481	
MB Numerical Performance Indicator:	0.67	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	Y	N
	LCS55837	LCS55837
Count Date:	9/2/2020	9/2/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045	24.045
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.508	0.501
Target Conc. (pCi/L, g, F):	4.738	4.797
Uncertainty (Calculated):	0.057	0.058
Result (pCi/L, g, F):	5.286	4.329
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.868	0.805
Numerical Performance Indicator:	1.24	-1.13
Percent Recovery:	111.58%	90.26%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55837	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS55837	
Sample Result (pCi/L, g, F):	5.286	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.868	
Sample Duplicate Result (pCi/L, g, F):	4.329	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.805	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.584	92490963004
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	21.13%	92490963004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

01/09/2020

LAM 9/2/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 9/2/2020
Worklist: 55851
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1990342
MB concentration:	0.664
M/B 2 Sigma CSU:	0.374
MB MDC:	0.672
MB Numerical Performance Indicator:	3.48
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS55851	LCSD55851
Count Date:	9/9/2020	9/9/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.472	38.472
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.812	0.803
Target Conc. (pCi/L, g, F):	4.737	4.789
Uncertainty (Calculated):	0.232	0.235
Result (pCi/L, g, F):	5.598	4.322
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.288	1.030
Numerical Performance Indicator:	1.29	-0.67
Percent Recovery:	118.17%	90.24%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS55851	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD55851	
Sample Result (pCi/L, g, F):	5.598	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.288	
Sample Duplicate Result (pCi/L, g, F):	4.322	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.030	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.516	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	26.80%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

111
9-10-20

APPENDIX A

**Laboratory Analytical Data
SEPTEMBER 2020**

October 16, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

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SAMPLE SUMMARY

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92496940001	DGWA-53	Water	09/22/20 12:40	09/23/20 09:35
92496940002	DGWA-70A	Water	09/22/20 10:20	09/23/20 09:35
92496940003	DGWA-71	Water	09/22/20 11:45	09/23/20 09:35
92496940004	EB-1	Water	09/22/20 11:45	09/23/20 09:35

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92496940001	DGWA-53	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496940002	DGWA-70A	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496940003	DGWA-71	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496940004	EB-1	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Sample: DGWA-53		Lab ID: 92496940001		Collected: 09/22/20 12:40		Received: 09/23/20 09:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.43	Std. Units			1		10/08/20 08:14		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	15.5	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 22:29	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/28/20 15:08	09/29/20 18:55	7440-36-0	
Arsenic	0.00093J	mg/L	0.0050	0.00078	1	09/28/20 15:08	09/29/20 18:55	7440-38-2	
Barium	0.070	mg/L	0.010	0.00071	1	09/28/20 15:08	09/29/20 18:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/28/20 15:08	09/29/20 18:55	7440-41-7	
Boron	0.056J	mg/L	0.10	0.0052	1	09/28/20 15:08	09/29/20 18:55	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/28/20 15:08	09/29/20 18:55	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/28/20 15:08	09/29/20 18:55	7440-47-3	
Cobalt	0.011	mg/L	0.0050	0.00038	1	09/28/20 15:08	09/29/20 18:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/28/20 15:08	09/29/20 18:55	7439-92-1	
Lithium	0.0089J	mg/L	0.030	0.00081	1	09/28/20 15:08	09/29/20 18:55	7439-93-2	
Molybdenum	0.039	mg/L	0.010	0.00069	1	09/28/20 15:08	09/29/20 18:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/28/20 15:08	09/29/20 18:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/28/20 15:08	09/29/20 18:55	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 09:13	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	142	mg/L	10.0	10.0	1		09/24/20 10:30		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	1.6	mg/L	1.0	0.60	1		09/27/20 03:05	16887-00-6	M1
Fluoride	0.099J	mg/L	0.10	0.050	1		09/27/20 03:05	16984-48-8	M1
Sulfate	13.5	mg/L	1.0	0.50	1		09/27/20 03:05	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Sample: DGWA-70A		Lab ID: 92496940002		Collected: 09/22/20 10:20		Received: 09/23/20 09:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.01	Std. Units			1		10/08/20 08:14		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	5.0	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 22:33	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/28/20 15:08	09/29/20 19:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/28/20 15:08	09/29/20 19:12	7440-38-2	
Barium	0.038	mg/L	0.010	0.00071	1	09/28/20 15:08	09/29/20 19:12	7440-39-3	
Beryllium	0.000068J	mg/L	0.0030	0.000046	1	09/28/20 15:08	09/29/20 19:12	7440-41-7	
Boron	ND	mg/L	0.10	0.0052	1	09/28/20 15:08	09/29/20 19:12	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/28/20 15:08	09/29/20 19:12	7440-43-9	
Chromium	0.00089J	mg/L	0.010	0.00055	1	09/28/20 15:08	09/29/20 19:12	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/28/20 15:08	09/29/20 19:12	7440-48-4	
Lead	0.000078J	mg/L	0.0050	0.000036	1	09/28/20 15:08	09/29/20 19:12	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/28/20 15:08	09/29/20 19:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/28/20 15:08	09/29/20 19:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/28/20 15:08	09/29/20 19:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/28/20 15:08	09/29/20 19:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 09:15	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	46.0	mg/L	10.0	10.0	1		09/24/20 10:30		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	1.9	mg/L	1.0	0.60	1		09/27/20 03:48	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/27/20 03:48	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		09/27/20 03:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

Sample: DGWA-71 Lab ID: 92496940003 Collected: 09/22/20 11:45 Received: 09/23/20 09:35 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.06	Std. Units			1		10/08/20 08:14		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	5.4	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 22:37	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/28/20 15:08	09/29/20 19:18	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/28/20 15:08	09/29/20 19:18	7440-38-2	
Barium	0.024	mg/L	0.010	0.00071	1	09/28/20 15:08	09/29/20 19:18	7440-39-3	
Beryllium	0.000069J	mg/L	0.0030	0.000046	1	09/28/20 15:08	09/29/20 19:18	7440-41-7	
Boron	ND	mg/L	0.10	0.0052	1	09/28/20 15:08	09/29/20 19:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/28/20 15:08	09/29/20 19:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/28/20 15:08	09/29/20 19:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/28/20 15:08	09/29/20 19:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/28/20 15:08	09/29/20 19:18	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00081	1	09/28/20 15:08	09/29/20 19:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/28/20 15:08	09/29/20 19:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/28/20 15:08	09/29/20 19:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/28/20 15:08	09/29/20 19:18	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 09:17	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	74.0	mg/L	10.0	10.0	1		09/24/20 10:31		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5.2	mg/L	1.0	0.60	1		09/27/20 04:02	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/27/20 04:02	16984-48-8	
Sulfate	6.5	mg/L	1.0	0.50	1		09/27/20 04:02	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Sample: EB-1		Lab ID: 92496940004		Collected: 09/22/20 11:45	Received: 09/23/20 09:35	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 22:42	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/28/20 15:08	09/29/20 19:24	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	09/28/20 15:08	09/29/20 19:24	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	09/28/20 15:08	09/29/20 19:24	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/28/20 15:08	09/29/20 19:24	7440-41-7		
Boron	ND	mg/L	0.10	0.0052	1	09/28/20 15:08	09/29/20 19:24	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	09/28/20 15:08	09/29/20 19:24	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	09/28/20 15:08	09/29/20 19:24	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	09/28/20 15:08	09/29/20 19:24	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/28/20 15:08	09/29/20 19:24	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	09/28/20 15:08	09/29/20 19:24	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	09/28/20 15:08	09/29/20 19:24	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	09/28/20 15:08	09/29/20 19:24	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	09/28/20 15:08	09/29/20 19:24	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 09:20	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/24/20 10:31			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		09/27/20 22:22	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		09/27/20 22:22	16984-48-8		
Sulfate	0.64J	mg/L	1.0	0.50	1		09/27/20 22:22	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

QC Batch: 568748 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

METHOD BLANK: 3013298 Matrix: Water
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/25/20 20:40	

LABORATORY CONTROL SAMPLE: 3013299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.95J	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013300 3013301

Parameter	Units	3013300		3013301		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495894022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	75.3	1	1	79.7	76.2	438	83	75-125	5	20 M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

QC Batch: 569382 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

METHOD BLANK: 3016873 Matrix: Water
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/29/20 18:03	
Arsenic	mg/L	ND	0.0050	0.00078	09/29/20 18:03	
Barium	mg/L	ND	0.010	0.00071	09/29/20 18:03	
Beryllium	mg/L	ND	0.0030	0.000046	09/29/20 18:03	
Boron	mg/L	ND	0.10	0.0052	09/29/20 18:03	
Cadmium	mg/L	ND	0.0025	0.00012	09/29/20 18:03	
Chromium	mg/L	ND	0.010	0.00055	09/29/20 18:03	
Cobalt	mg/L	ND	0.0050	0.00038	09/29/20 18:03	
Lead	mg/L	ND	0.0050	0.000036	09/29/20 18:03	
Lithium	mg/L	ND	0.030	0.00081	09/29/20 18:03	
Molybdenum	mg/L	ND	0.010	0.00069	09/29/20 18:03	
Selenium	mg/L	ND	0.010	0.0016	09/29/20 18:03	
Thallium	mg/L	ND	0.0010	0.00014	09/29/20 18:03	

LABORATORY CONTROL SAMPLE: 3016874

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.095	95	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.095	95	80-120	
Boron	mg/L	1	0.94	94	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Chromium	mg/L	0.1	0.094	94	80-120	
Cobalt	mg/L	0.1	0.094	94	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.091	91	80-120	
Molybdenum	mg/L	0.1	0.095	95	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016875 3016876

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495870024	Result	Spike Conc.	Spike Conc.								
Antimony	mg/L	ND	0.1	0.1	0.10	0.099	101	99	75-125	2	20		
Arsenic	mg/L	ND	0.1	0.1	0.097	0.094	97	94	75-125	3	20		

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

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QUALITY CONTROL DATA

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

Parameter	Units	3016875		3016876		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495870024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Barium	mg/L	0.013	0.1	0.1	0.11	0.11	98	95	75-125	3	20
Beryllium	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	1	20
Boron	mg/L	ND	1	1	0.97	0.93	96	93	75-125	4	20
Cadmium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	75-125	3	20
Chromium	mg/L	0.00089J	0.1	0.1	0.098	0.095	98	94	75-125	4	20
Cobalt	mg/L	ND	0.1	0.1	0.097	0.094	97	94	75-125	3	20
Lead	mg/L	0.000075J	0.1	0.1	0.095	0.094	95	94	75-125	1	20
Lithium	mg/L	ND	0.1	0.1	0.094	0.092	94	92	75-125	2	20
Molybdenum	mg/L	ND	0.1	0.1	0.099	0.096	98	96	75-125	3	20
Selenium	mg/L	ND	0.1	0.1	0.092	0.093	91	91	75-125	1	20
Thallium	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	1	20

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

QC Batch: 569298 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

METHOD BLANK: 3016185 Matrix: Water
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/29/20 08:13	

LABORATORY CONTROL SAMPLE: 3016186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016187 3016188

Parameter	Units	3016187		3016188		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0026	0.0024	102	96	75-125	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH UPGRADIENT

Pace Project No.: 92496940

QC Batch: 568649	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

METHOD BLANK: 3012742 Matrix: Water
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/24/20 10:30	

LABORATORY CONTROL SAMPLE: 3012743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	407	102	84-108	

SAMPLE DUPLICATE: 3012744

Parameter	Units	92496914002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	107	113	5	10	

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QUALITY CONTROL DATA

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

QC Batch: 569206 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

METHOD BLANK: 3015927 Matrix: Water
Associated Lab Samples: 92496940001, 92496940002, 92496940003, 92496940004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/27/20 02:07	
Fluoride	mg/L	ND	0.10	0.050	09/27/20 02:07	
Sulfate	mg/L	ND	1.0	0.50	09/27/20 02:07	

LABORATORY CONTROL SAMPLE: 3015928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.4	107	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	52.9	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3015931 3015932

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496941006	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.2	50	50	57.3	57.2	108	108	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	99	99	90-110	0	10		
Sulfate	mg/L	40.2	50	50	93.6	93.5	107	106	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3015973 3015974

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496940001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	1.6	50	50	64.7	63.0	126	123	90-110	3	10	M1	
Fluoride	mg/L	0.099J	2.5	2.5	3.3	3.2	130	126	90-110	3	10	M1	
Sulfate	mg/L	13.5	50	50	78.6	76.7	130	126	90-110	2	10	M1	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH UPGRADIENT
Pace Project No.: 92496940

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92496940001	DGWA-53				
92496940002	DGWA-70A				
92496940003	DGWA-71				
92496940001	DGWA-53	EPA 3010A	568748	EPA 6010D	568812
92496940002	DGWA-70A	EPA 3010A	568748	EPA 6010D	568812
92496940003	DGWA-71	EPA 3010A	568748	EPA 6010D	568812
92496940004	EB-1	EPA 3010A	568748	EPA 6010D	568812
92496940001	DGWA-53	EPA 3005A	569382	EPA 6020B	569504
92496940002	DGWA-70A	EPA 3005A	569382	EPA 6020B	569504
92496940003	DGWA-71	EPA 3005A	569382	EPA 6020B	569504
92496940004	EB-1	EPA 3005A	569382	EPA 6020B	569504
92496940001	DGWA-53	EPA 7470A	569298	EPA 7470A	569454
92496940002	DGWA-70A	EPA 7470A	569298	EPA 7470A	569454
92496940003	DGWA-71	EPA 7470A	569298	EPA 7470A	569454
92496940004	EB-1	EPA 7470A	569298	EPA 7470A	569454
92496940001	DGWA-53	SM 2450C-2011	568649		
92496940002	DGWA-70A	SM 2450C-2011	568649		
92496940003	DGWA-71	SM 2450C-2011	568649		
92496940004	EB-1	SM 2450C-2011	568649		
92496940001	DGWA-53	EPA 300.0 Rev 2.1 1993	569206		
92496940002	DGWA-70A	EPA 300.0 Rev 2.1 1993	569206		
92496940003	DGWA-71	EPA 300.0 Rev 2.1 1993	569206		
92496940004	EB-1	EPA 300.0 Rev 2.1 1993	569206		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GA Power - Coal

WO#: **92496940**

Courier: Fed Ex UPS USPS Client Commercial Pace
 Tracking #: _____



Custody Seal on Cooler/Box Present: yes no Seals intact: Yes

Packing Material: Bubble Wrap Bubble Bags None Other Ziplock

Thermometer Used 230 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 3.5 Biological Tissue is Frozen: Yes No Date and Initials of person examining contents: CO

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>CO</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Field Data Required? Y / N

Client Notification/ Resolution:
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003rev.3, 11September2006



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project #

WO#: 92496940

PM: KLH1

Due Date: 10/07/20

CLIENT: GA-GA Power

Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/BOIS (water) DOC, LLHg

Bottom half of box is to list number of bottle

Matrix	Item#	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
	BP4U-125 mL Plastic Unpreserved (N/A) (C-)													
	BP3U-250 mL Plastic Unpreserved (N/A)													
	BP2U-500 mL Plastic Unpreserved (N/A)													
	BP1U-1 liter Plastic Unpreserved (N/A)													
	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)													
	BP3N-250 mL plastic HNO3 (pH < 2)													
	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)													
	BP4Z-125 mL Plastic NaOH (pH > 12) (C-)													
	BP4C-125 mL Plastic NaOH (pH > 12) (C-)													
	WIGFU-Wide-mouthed Glass Jar Unpreserved													
	AG1U-1 liter Amber Unpreserved (N/A) (C-)													
	AG1H-1 liter Amber HCl (pH < 2)													
	AG1H-1 liter Amber HCl (pH < 2)													
	AG3U-250 mL Amber Unpreserved (N/A) (C-)													
	AG3U-250 mL Amber Unpreserved (N/A) (C-)													
	AG1S-1 liter Amber H2SO4 (pH < 2)													
	AG3S-250 mL Amber H2SO4 (pH < 2)													
	AG3S-250 mL Amber H2SO4 (pH < 2)													
	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)													
	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)													
	DG9H-40 mL VOA HCl (N/A)													
	DG9H-40 mL VOA HCl (N/A)													
	VG9T-40 mL VOA Na2S2O3 (N/A)													
	VG9T-40 mL VOA Na2S2O3 (N/A)													
	VG9U-40 mL VOA Unp (N/A)													
	VG9U-40 mL VOA Unp (N/A)													
	DG9P-40 mL VOA H3PO4 (N/A)													
	DG9P-40 mL VOA H3PO4 (N/A)													
	VOAK (6 vials per kit)-S03S kit (N/A)													
	VOAK (6 vials per kit)-VPH/Gas kit (N/A)													
	V/GK (3 vials per kit)-VPH/Gas kit (N/A)													
	V/GK (3 vials per kit)-VPH/Gas kit (N/A)													
	SP5T-125 mL Sterile Plastic (N/A - lab)													
	SP5T-125 mL Sterile Plastic (N/A - lab)													
	SP2T-250 mL Sterile Plastic (N/A - lab)													
	SP2T-250 mL Sterile Plastic (N/A - lab)													
	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
	AG0U-100 mL Amber Unpreserved vials (N/A)													
	AG0U-100 mL Amber Unpreserved vials (N/A)													
	VSGU-20 mL Scintillation vials (N/A)													
	VSGU-20 mL Scintillation vials (N/A)													

BP1N

XXXXXX

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.

October 14, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCDONOUGH UPGRADIENT RADS
Pace Project No.: 92496907

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCDONOUGH UPGRADIENT RADS
Pace Project No.: 92496907

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92496907001	DGWA-53	Water	09/22/20 12:40	09/23/20 09:35
92496907002	DGWA-70A	Water	09/22/20 10:20	09/23/20 09:35
92496907003	DGWA-71	Water	09/22/20 11:45	09/23/20 09:35
92496907004	EB-1	Water	09/22/20 10:40	09/23/20 09:35

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92496907001	DGWA-53	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496907002	DGWA-70A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496907003	DGWA-71	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496907004	EB-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWA-53 Lab ID: 92496907001 Collected: 09/22/20 12:40 Received: 09/23/20 09:35 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.950 ± 0.407 (0.455) C:79% T:NA	pCi/L	10/08/20 07:22	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.32 ± 0.588 (0.987) C:61% T:85%	pCi/L	10/12/20 11:46	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	2.27 ± 0.995 (1.44)	pCi/L	10/14/20 09:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

Sample: DGWA-70A **Lab ID: 92496907002** Collected: 09/22/20 10:20 Received: 09/23/20 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.178 ± 0.200 (0.398) C:96% T:NA	pCi/L	10/08/20 07:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.272 ± 0.423 (0.915) C:63% T:86%	pCi/L	10/12/20 11:46	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.450 ± 0.623 (1.31)	pCi/L	10/14/20 09:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

Sample: DGWA-71 **Lab ID: 92496907003** Collected: 09/22/20 11:45 Received: 09/23/20 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.216 ± 0.243 (0.484) C:83% T:NA	pCi/L	10/08/20 07:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.365 ± 0.384 (0.955) C:67% T:84%	pCi/L	10/12/20 11:46	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.216 ± 0.627 (1.44)	pCi/L	10/14/20 09:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: EB-1 Lab ID: 92496907004 Collected: 09/22/20 10:40 Received: 09/23/20 09:35 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	-0.0348 ± 0.133 (0.424) C:80% T:NA	pCi/L	10/08/20 07:22	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.962 ± 0.578 (1.09) C:66% T:76%	pCi/L	10/12/20 11:46	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.962 ± 0.711 (1.51)	pCi/L	10/14/20 09:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

QC Batch: 415887

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92496907001, 92496907002, 92496907003, 92496907004

METHOD BLANK: 2010984

Matrix: Water

Associated Lab Samples: 92496907001, 92496907002, 92496907003, 92496907004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.452 ± 0.429 (0.882) C:72% T:83%	pCi/L	10/12/20 11:46	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

QC Batch:	415889	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92496907001, 92496907002, 92496907003, 92496907004

METHOD BLANK: 2010986 Matrix: Water

Associated Lab Samples: 92496907001, 92496907002, 92496907003, 92496907004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.196 ± 0.238 (0.495) C:89% T:NA	pCi/L	10/08/20 07:29	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCDONOUGH UPGRADIENT RADS

Pace Project No.: 92496907

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH UPGRADIENT RADS
Pace Project No.: 92496907

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92496907001	DGWA-53	EPA 9315	415889		
92496907002	DGWA-70A	EPA 9315	415889		
92496907003	DGWA-71	EPA 9315	415889		
92496907004	EB-1	EPA 9315	415889		
92496907001	DGWA-53	EPA 9320	415887		
92496907002	DGWA-70A	EPA 9320	415887		
92496907003	DGWA-71	EPA 9320	415887		
92496907004	EB-1	EPA 9320	415887		
92496907001	DGWA-53	Total Radium Calculation	418329		
92496907002	DGWA-70A	Total Radium Calculation	418329		
92496907003	DGWA-71	Total Radium Calculation	418329		
92496907004	EB-1	Total Radium Calculation	418329		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power - Coal Coml

WO#: 92496907



Courier: Fed Ex UPS USPS Client Commercial Pace Oth
Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other Ziplock

Thermometer Used 230

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 3.5

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: CO

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>CO</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project #

WO#: 92496907

PH: KLH1

Due Date: 10/14/20

CLIENT: GR-GR Power

Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/BO15 (water) DOC, LLHg

Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP8U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3M-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Whole-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	VJGK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VS9U-20 mL Scintillation vials (N/A)		
	1																												
	2																												
	3																												
	4																												
	5																												
	6																												
	7																												
	8																												
	9																												
	10																												
	11																												
	12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 10/7/2020
Worklist: 56441
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010986	
MB concentration:	0.196	
M/B Counting Uncertainty:	0.236	
MB MDC:	0.495	
MB Numerical Performance Indicator:	1.62	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS56441	LCSD56441
Count Date:	10/8/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.524	
Target Conc. (pCi/L, g, F):	4.587	
Uncertainty (Calculated):	0.055	
Result (pCi/L, g, F):	4.928	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.804	
Numerical Performance Indicator:	0.83	
Percent Recovery:	107.44%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92496907001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92496907001DUP	
Sample Result (pCi/L, g, F):	0.950	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.383	
Sample Duplicate Result (pCi/L, g, F):	1.227	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.469	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.896	92496907001
Duplicate RPD:	25.43%	92496907001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision. N/A LAM 10/8/2020

LAM 10/8/2020

LAL
10/8/2020



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/7/2020
Worklist: 56441
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010986	
MB concentration:	0.196	
M/B Counting Uncertainty:	0.236	
MB MDC:	0.495	
MB Numerical Performance Indicator:	1.62	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56441	LCSD56441
Count Date:	10/8/2020	10/8/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.524	0.512
Target Conc. (pCi/L, g, F):	4.587	4.700
Uncertainty (Calculated):	0.055	0.056
Result (pCi/L, g, F):	4.928	4.118
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.804	0.734
Numerical Performance Indicator:	0.83	-1.55
Percent Recovery:	107.44%	87.60%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56441	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56441	
Sample Result (pCi/L, g, F):	4.928	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.804	
Sample Duplicate Result (pCi/L, g, F):	4.118	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.734	
Are sample and/or duplicate results below RL?:	NO	
Duplicate Numerical Performance Indicator:	1.459	92496907001
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	20.34%	92496907001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

LAL
10/8/2020

LAL 10/8/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/6/2020
Worklist: 56439
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010984	
MB concentration:	0.452	
M/B 2 Sigma CSU:	0.429	
MB MDC:	0.882	
MB Numerical Performance Indicator:	2.07	
MB Status vs Numerical Indicator:	Warning	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56439	LCSD56439
Count Date:	10/12/2020	10/12/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.055	38.055
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.805	0.809
Target Conc. (pCi/L, g, F):	4.730	4.702
Uncertainty (Calculated):	0.232	0.230
Result (pCi/L, g, F):	5.342	4.034
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.236	1.010
Numerical Performance Indicator:	0.95	-1.26
Percent Recovery:	112.95%	85.79%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56439	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56439	
Sample Result (pCi/L, g, F):	5.342	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.236	
Sample Duplicate Result (pCi/L, g, F):	4.034	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.010	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.607	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	27.34%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

10-15-20

On 10.13.20

October 16, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 24, 2020 and September 25, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

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SAMPLE SUMMARY

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92497129001	DGWC-40	Water	09/23/20 14:15	09/24/20 09:25
92497129002	DGWC-67	Water	09/23/20 15:10	09/24/20 09:25
92497129003	DGWC-68A	Water	09/23/20 14:00	09/24/20 09:25
92497129004	DGWC-69	Water	09/23/20 11:50	09/24/20 09:25
92497129005	FD-2	Water	09/23/20 00:00	09/24/20 09:25
92497129006	DGWC-37	Water	09/24/20 10:00	09/25/20 13:30
92497129007	DGWC-38	Water	09/24/20 14:15	09/25/20 13:30
92497129008	DGWC-39	Water	09/25/20 11:05	09/25/20 13:30

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92497129001	DGWC-40	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129002	DGWC-67	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129003	DGWC-68A	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129004	DGWC-69	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129005	FD-2	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129006	DGWC-37	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129007	DGWC-38	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497129008	DGWC-39	EPA 6010D	DRB	1
		EPA 6020B	CW1	13

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Sample: DGWC-40		Lab ID: 92497129001		Collected: 09/23/20 14:15		Received: 09/24/20 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.78	Std. Units			1		10/09/20 15:26		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	41.9	mg/L	1.0	0.070	1	09/29/20 14:17	09/29/20 21:10	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 18:39	10/01/20 11:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 18:39	10/01/20 11:52	7440-38-2	
Barium	0.019	mg/L	0.010	0.00071	1	09/29/20 18:39	10/01/20 11:52	7440-39-3	
Beryllium	0.0031	mg/L	0.0030	0.000046	1	09/29/20 18:39	10/01/20 11:52	7440-41-7	
Boron	0.76	mg/L	0.10	0.0052	1	09/29/20 18:39	10/01/20 11:52	7440-42-8	
Cadmium	0.00080J	mg/L	0.0025	0.00012	1	09/29/20 18:39	10/01/20 11:52	7440-43-9	
Chromium	0.0011J	mg/L	0.010	0.00055	1	09/29/20 18:39	10/01/20 11:52	7440-47-3	
Cobalt	0.046	mg/L	0.0050	0.00038	1	09/29/20 18:39	10/01/20 11:52	7440-48-4	
Lead	0.00028J	mg/L	0.0050	0.000036	1	09/29/20 18:39	10/01/20 11:52	7439-92-1	
Lithium	0.0022J	mg/L	0.030	0.00081	1	09/29/20 18:39	10/01/20 11:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/29/20 18:39	10/01/20 11:52	7439-98-7	
Selenium	0.0067J	mg/L	0.010	0.0016	1	09/29/20 18:39	10/01/20 11:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 18:39	10/01/20 11:52	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 10:10	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	357	mg/L	10.0	10.0	1		09/28/20 14:19		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	19.7	mg/L	1.0	0.60	1		09/29/20 12:52	16887-00-6	
Fluoride	0.054J	mg/L	0.10	0.050	1		09/29/20 12:52	16984-48-8	
Sulfate	190	mg/L	3.0	1.5	3		09/29/20 21:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Sample: DGWC-67 Lab ID: 92497129002 Collected: 09/23/20 15:10 Received: 09/24/20 09:25 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.23	Std. Units			1		10/09/20 15:26		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	42.0	mg/L	1.0	0.070	1	09/29/20 14:17	09/29/20 21:14	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 18:39	10/01/20 11:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 18:39	10/01/20 11:58	7440-38-2	
Barium	0.10	mg/L	0.010	0.00071	1	09/29/20 18:39	10/01/20 11:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 18:39	10/01/20 11:58	7440-41-7	
Boron	3.2	mg/L	0.10	0.0052	1	09/29/20 18:39	10/01/20 11:58	7440-42-8	
Cadmium	0.00018J	mg/L	0.0025	0.00012	1	09/29/20 18:39	10/01/20 11:58	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 18:39	10/01/20 11:58	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00038	1	09/29/20 18:39	10/01/20 11:58	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/29/20 18:39	10/01/20 11:58	7439-92-1	
Lithium	0.0043J	mg/L	0.030	0.00081	1	09/29/20 18:39	10/01/20 11:58	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/29/20 18:39	10/01/20 11:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/29/20 18:39	10/01/20 11:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 18:39	10/01/20 11:58	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 10:12	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	296	mg/L	10.0	10.0	1		09/28/20 14:19		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	7.1	mg/L	1.0	0.60	1		09/29/20 13:07	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 13:07	16984-48-8	
Sulfate	99.8	mg/L	2.0	1.0	2		09/29/20 21:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Sample: DGWC-68A		Lab ID: 92497129003		Collected: 09/23/20 14:00	Received: 09/24/20 09:25	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.60	Std. Units			1		10/09/20 15:26		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	50.2	mg/L	1.0	0.070	1	09/29/20 14:17	09/29/20 21:18	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 18:39	10/01/20 12:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 18:39	10/01/20 12:03	7440-38-2	
Barium	0.094	mg/L	0.010	0.00071	1	09/29/20 18:39	10/01/20 12:03	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 18:39	10/01/20 12:03	7440-41-7	
Boron	1.7	mg/L	0.10	0.0052	1	09/29/20 18:39	10/01/20 12:03	7440-42-8	
Cadmium	0.00024J	mg/L	0.0025	0.00012	1	09/29/20 18:39	10/01/20 12:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 18:39	10/01/20 12:03	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/29/20 18:39	10/01/20 12:03	7440-48-4	
Lead	0.00035J	mg/L	0.0050	0.000036	1	09/29/20 18:39	10/01/20 12:03	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/29/20 18:39	10/01/20 12:03	7439-93-2	
Molybdenum	0.20	mg/L	0.010	0.00069	1	09/29/20 18:39	10/01/20 12:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/29/20 18:39	10/01/20 12:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 18:39	10/01/20 12:03	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 10:14	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	251	mg/L	10.0	10.0	1		09/28/20 14:26		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.6	mg/L	1.0	0.60	1		09/29/20 13:21	16887-00-6	
Fluoride	0.070J	mg/L	0.10	0.050	1		09/29/20 13:21	16984-48-8	
Sulfate	38.7	mg/L	1.0	0.50	1		09/29/20 13:21	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Sample: DGWC-69		Lab ID: 92497129004		Collected: 09/23/20 11:50		Received: 09/24/20 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.08	Std. Units			1		10/09/20 15:26		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	8.0	mg/L	1.0	0.070	1	09/29/20 14:17	09/29/20 21:23	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 18:39	10/01/20 12:22	7440-36-0	
Arsenic	0.032	mg/L	0.0050	0.00078	1	09/29/20 18:39	10/01/20 12:22	7440-38-2	
Barium	0.055	mg/L	0.010	0.00071	1	09/29/20 18:39	10/01/20 12:22	7440-39-3	
Beryllium	0.000061J	mg/L	0.0030	0.000046	1	09/29/20 18:39	10/01/20 12:22	7440-41-7	
Boron	0.041J	mg/L	0.10	0.0052	1	09/29/20 18:39	10/01/20 12:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/29/20 18:39	10/01/20 12:22	7440-43-9	
Chromium	0.0011J	mg/L	0.010	0.00055	1	09/29/20 18:39	10/01/20 12:22	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/29/20 18:39	10/01/20 12:22	7440-48-4	
Lead	0.00017J	mg/L	0.0050	0.000036	1	09/29/20 18:39	10/01/20 12:22	7439-92-1	
Lithium	0.0023J	mg/L	0.030	0.00081	1	09/29/20 18:39	10/01/20 12:22	7439-93-2	
Molybdenum	0.0056J	mg/L	0.010	0.00069	1	09/29/20 18:39	10/01/20 12:22	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/29/20 18:39	10/01/20 12:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 18:39	10/01/20 12:22	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 10:17	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	102	mg/L	10.0	10.0	1		09/28/20 14:27		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	4.7	mg/L	1.0	0.60	1		09/29/20 13:36	16887-00-6	
Fluoride	0.064J	mg/L	0.10	0.050	1		09/29/20 13:36	16984-48-8	
Sulfate	5.9	mg/L	1.0	0.50	1		09/29/20 13:36	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Sample: FD-2		Lab ID: 92497129005		Collected: 09/23/20 00:00	Received: 09/24/20 09:25	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	48.0	mg/L	1.0	0.070	1	09/29/20 14:17	09/29/20 21:27	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 18:39	10/01/20 12:28	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 18:39	10/01/20 12:28	7440-38-2		
Barium	0.092	mg/L	0.010	0.00071	1	09/29/20 18:39	10/01/20 12:28	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 18:39	10/01/20 12:28	7440-41-7		
Boron	1.8	mg/L	0.10	0.0052	1	09/29/20 18:39	10/01/20 12:28	7440-42-8		
Cadmium	0.00024J	mg/L	0.0025	0.00012	1	09/29/20 18:39	10/01/20 12:28	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 18:39	10/01/20 12:28	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	09/29/20 18:39	10/01/20 12:28	7440-48-4		
Lead	0.000038J	mg/L	0.0050	0.000036	1	09/29/20 18:39	10/01/20 12:28	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	09/29/20 18:39	10/01/20 12:28	7439-93-2		
Molybdenum	0.18	mg/L	0.010	0.00069	1	09/29/20 18:39	10/01/20 12:28	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	09/29/20 18:39	10/01/20 12:28	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 18:39	10/01/20 12:28	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 10:19	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	241	mg/L	10.0	10.0	1		09/28/20 14:27			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	3.6	mg/L	1.0	0.60	1		09/29/20 14:19	16887-00-6		
Fluoride	0.071J	mg/L	0.10	0.050	1		09/29/20 14:19	16984-48-8		
Sulfate	38.4	mg/L	1.0	0.50	1		09/29/20 14:19	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Sample: DGWC-37 Lab ID: 92497129006 Collected: 09/24/20 10:00 Received: 09/25/20 13:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/09/20 15:26		
pH	6.30	Std. Units			1		10/09/20 15:26		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	55.9	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 21:02	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 19:11	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 19:11	7440-38-2	
Barium	0.094	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 19:11	7440-39-3	
Beryllium	0.000088J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 19:11	7440-41-7	
Boron	1.6	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 19:11	7440-42-8	
Cadmium	0.00027J	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 19:11	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 19:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 19:11	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 19:11	7439-92-1	
Lithium	0.0021J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 19:11	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 19:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 19:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 19:11	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.000091J	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 11:45	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	280	mg/L	10.0	10.0	1		09/29/20 19:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5.6	mg/L	1.0	0.60	1		09/30/20 04:05	16887-00-6	
Fluoride	0.061J	mg/L	0.10	0.050	1		09/30/20 04:05	16984-48-8	
Sulfate	84.1	mg/L	1.0	0.50	1		09/30/20 04:05	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Sample: DGWC-38		Lab ID: 92497129007		Collected: 09/24/20 14:15		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.05	Std. Units			1		10/16/20 09:34		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	84.1	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 21:06	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 19:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 19:17	7440-38-2	
Barium	0.032	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 19:17	7440-39-3	
Beryllium	0.000058J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 19:17	7440-41-7	
Boron	2.9	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 19:17	7440-42-8	
Cadmium	0.00081J	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 19:17	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 19:17	7440-47-3	
Cobalt	0.0013J	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 19:17	7440-48-4	
Lead	0.00014J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 19:17	7439-92-1	
Lithium	0.0029J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 19:17	7439-93-2	
Molybdenum	0.0010J	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 19:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 19:17	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 19:17	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.000085J	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 11:48	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	489	mg/L	10.0	10.0	1		09/29/20 19:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8.2	mg/L	1.0	0.60	1		09/30/20 04:20	16887-00-6	
Fluoride	0.057J	mg/L	0.10	0.050	1		09/30/20 04:20	16984-48-8	
Sulfate	240	mg/L	5.0	2.5	5		09/30/20 18:38	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Sample: DGWC-39		Lab ID: 92497129008		Collected: 09/25/20 11:05		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/09/20 15:26		
pH	6.38	Std. Units			1		10/09/20 15:26		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	92.5	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 21:11	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 19:23	7440-36-0	
Arsenic	0.00087J	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 19:23	7440-38-2	
Barium	0.10	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 19:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 19:23	7440-41-7	
Boron	3.3	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 19:23	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 19:23	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 19:23	7440-47-3	
Cobalt	0.0061	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 19:23	7440-48-4	
Lead	0.00022J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 19:23	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 19:23	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 19:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 19:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 19:23	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 11:50	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	460	mg/L	10.0	10.0	1		10/01/20 15:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	7.9	mg/L	1.0	0.60	1		09/30/20 04:34	16887-00-6	
Fluoride	0.086J	mg/L	0.10	0.050	1		09/30/20 04:34	16984-48-8	
Sulfate	153	mg/L	3.0	1.5	3		09/30/20 18:53	14808-79-8	

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

QC Batch:	569672	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D ATL
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

METHOD BLANK: 3017857 Matrix: Water
Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/29/20 19:56	

LABORATORY CONTROL SAMPLE: 3017858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.97J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017859 3017860

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Calcium	mg/L	2510 ug/L	1	1	3.4	3.4	93	92	75-125	0	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 570008 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497129006, 92497129007, 92497129008

METHOD BLANK: 3019452 Matrix: Water
Associated Lab Samples: 92497129006, 92497129007, 92497129008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/01/20 19:24	

LABORATORY CONTROL SAMPLE: 3019453

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.96J	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019454 3019455

Parameter	Units	3019454		3019455		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496941020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	53.1	1	1	55.5	54.3	237	115	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 569774 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

METHOD BLANK: 3018372 Matrix: Water
Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/01/20 09:53	
Arsenic	mg/L	ND	0.0050	0.00078	10/01/20 09:53	
Barium	mg/L	ND	0.010	0.00071	10/01/20 09:53	
Beryllium	mg/L	ND	0.0030	0.000046	10/01/20 09:53	
Boron	mg/L	ND	0.10	0.0052	10/01/20 09:53	
Cadmium	mg/L	ND	0.0025	0.00012	10/01/20 09:53	
Chromium	mg/L	ND	0.010	0.00055	10/01/20 09:53	
Cobalt	mg/L	ND	0.0050	0.00038	10/01/20 09:53	
Lead	mg/L	ND	0.0050	0.000036	10/01/20 09:53	
Lithium	mg/L	ND	0.030	0.00081	10/01/20 09:53	
Molybdenum	mg/L	ND	0.010	0.00069	10/01/20 09:53	
Selenium	mg/L	ND	0.010	0.0016	10/01/20 09:53	
Thallium	mg/L	ND	0.0010	0.00014	10/01/20 09:53	

LABORATORY CONTROL SAMPLE: 3018373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	103	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.093	93	80-120	
Boron	mg/L	1	0.91	91	80-120	
Cadmium	mg/L	0.1	0.095	95	80-120	
Chromium	mg/L	0.1	0.092	92	80-120	
Cobalt	mg/L	0.1	0.092	92	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.092	92	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018374 3018375

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497149004	Result	Spike Conc.	Spike Conc.								
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	0	20		
Arsenic	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Parameter	Units	3018374		3018375		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497149004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.0039J	0.1	0.1	0.10	0.10	99	100	75-125	1	20		
Beryllium	mg/L	0.000059J	0.1	0.1	0.090	0.091	90	91	75-125	1	20		
Boron	mg/L	0.0073J	1	1	0.88	0.90	87	89	75-125	2	20		
Cadmium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.095	0.095	94	94	75-125	0	20		
Cobalt	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20		
Lead	mg/L	0.00015J	0.1	0.1	0.093	0.094	92	94	75-125	1	20		
Lithium	mg/L	0.013J	0.1	0.1	0.10	0.10	91	91	75-125	0	20		
Molybdenum	mg/L	0.010	0.1	0.1	0.11	0.11	96	97	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.099	0.096	98	95	75-125	3	20		
Thallium	mg/L	0.00016J	0.1	0.1	0.094	0.095	94	95	75-125	1	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 570089 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497129006, 92497129007, 92497129008

METHOD BLANK: 3020046 Matrix: Water
Associated Lab Samples: 92497129006, 92497129007, 92497129008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/03/20 17:40	
Arsenic	mg/L	ND	0.0050	0.00078	10/03/20 17:40	
Barium	mg/L	ND	0.010	0.00071	10/03/20 17:40	
Beryllium	mg/L	ND	0.0030	0.000046	10/03/20 17:40	
Boron	mg/L	ND	0.10	0.0052	10/03/20 17:40	
Cadmium	mg/L	ND	0.0025	0.00012	10/03/20 17:40	
Chromium	mg/L	ND	0.010	0.00055	10/03/20 17:40	
Cobalt	mg/L	ND	0.0050	0.00038	10/03/20 17:40	
Lead	mg/L	ND	0.0050	0.000036	10/03/20 17:40	
Lithium	mg/L	ND	0.030	0.00081	10/03/20 17:40	
Molybdenum	mg/L	ND	0.010	0.00069	10/03/20 17:40	
Selenium	mg/L	ND	0.010	0.0016	10/03/20 17:40	
Thallium	mg/L	ND	0.0010	0.00014	10/03/20 17:40	

LABORATORY CONTROL SAMPLE: 3020047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.092	92	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.097	97	80-120	
Molybdenum	mg/L	0.1	0.096	96	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020048 3020049

Parameter	Units	92496941025 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.095	0.10	95	100	75-125	6	20	
Arsenic	mg/L	0.00088J	0.1	0.1	0.095	0.095	94	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020048		3020049		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92496941025 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.032	0.1	0.1	0.13	0.13	95	98	75-125	3	20		
Beryllium	mg/L	0.00070J	0.1	0.1	0.099	0.097	98	97	75-125	1	20		
Boron	mg/L	0.84	1	1	2.0	1.9	112	107	75-125	3	20		
Cadmium	mg/L	0.00028J	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Chromium	mg/L	0.0028J	0.1	0.1	0.10	0.10	100	100	75-125	1	20		
Cobalt	mg/L	0.027	0.1	0.1	0.13	0.13	99	98	75-125	1	20		
Lead	mg/L	0.00022J	0.1	0.1	0.087	0.094	86	93	75-125	8	20		
Lithium	mg/L	0.0012J	0.1	0.1	0.10	0.10	102	100	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.10	98	102	75-125	4	20		
Selenium	mg/L	0.012	0.1	0.1	0.11	0.11	96	95	75-125	1	20		
Thallium	mg/L	0.00034J	0.1	0.1	0.093	0.094	93	94	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 569299 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

METHOD BLANK: 3016189 Matrix: Water
Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/29/20 09:22	

LABORATORY CONTROL SAMPLE: 3016190

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016191 3016192

Parameter	Units	3016191		3016192		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0027	99	108	75-125	8	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 569680 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497129006, 92497129007, 92497129008

METHOD BLANK: 3017897 Matrix: Water
Associated Lab Samples: 92497129006, 92497129007, 92497129008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/30/20 10:46	

LABORATORY CONTROL SAMPLE: 3017898

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017899 3017900

Parameter	Units	3017899		3017900		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497149005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0026	0.0025	103	98	75-125	4	20

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

QC Batch:	569386	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

METHOD BLANK: 3016890 Matrix: Water
Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/28/20 14:18	

LABORATORY CONTROL SAMPLE: 3016891

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	429	107	84-108	

SAMPLE DUPLICATE: 3016892

Parameter	Units	92497125001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	260	295	13	10	D6

SAMPLE DUPLICATE: 3016893

Parameter	Units	92497141008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	81.0	59.0	31	10	D6

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

QC Batch: 569806

Analysis Method: SM 2450C-2011

QC Batch Method: SM 2450C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497129006, 92497129007

METHOD BLANK: 3018686

Matrix: Water

Associated Lab Samples: 92497129006, 92497129007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/29/20 18:54	

LABORATORY CONTROL SAMPLE: 3018687

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	402	100	84-108	

SAMPLE DUPLICATE: 3018688

Parameter	Units	92497721002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	386	353	9	10	

SAMPLE DUPLICATE: 3018689

Parameter	Units	92497141012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	69.0	74.0	7	10	

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 570219	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497129008

METHOD BLANK: 3020458 Matrix: Water

Associated Lab Samples: 92497129008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/01/20 15:22	

LABORATORY CONTROL SAMPLE: 3020459

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 3020460

Parameter	Units	92497125005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	134	142	6	10	

SAMPLE DUPLICATE: 3020461

Parameter	Units	92497146006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	878	918	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

QC Batch: 569514 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

METHOD BLANK: 3017398 Matrix: Water
 Associated Lab Samples: 92497129001, 92497129002, 92497129003, 92497129004, 92497129005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/29/20 11:26	
Fluoride	mg/L	ND	0.10	0.050	09/29/20 11:26	
Sulfate	mg/L	ND	1.0	0.50	09/29/20 11:26	

LABORATORY CONTROL SAMPLE: 3017399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.9	108	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	52.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017400 3017401

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496941018 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	ND	50	50	52.4	51.8	105	104	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.3	2.4	93	94	90-110	0	10		
Sulfate	mg/L	ND	50	50	51.0	50.1	101	100	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017402 3017403

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496941019 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	ND	50	50	51.7	51.7	103	103	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.3	2.4	91	95	90-110	5	10		
Sulfate	mg/L	ND	50	50	50.0	49.9	100	100	90-110	0	10		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

QC Batch: 569830 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92497129006, 92497129007, 92497129008

METHOD BLANK: 3018757 Matrix: Water
Associated Lab Samples: 92497129006, 92497129007, 92497129008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/30/20 03:36	
Fluoride	mg/L	ND	0.10	0.050	09/30/20 03:36	
Sulfate	mg/L	ND	1.0	0.50	09/30/20 03:36	

LABORATORY CONTROL SAMPLE: 3018758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.0	106	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	52.7	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018759 3018760

Parameter	Units	92497149012		MSD		MSD		% Rec		Max		Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	Limits	RPD	RPD	
Chloride	mg/L	ND	50	50	51.5	51.6	103	103	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	102	103	90-110	1	10	
Sulfate	mg/L	ND	50	50	50.5	50.6	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018761 3018762

Parameter	Units	92497149013		MSD		MSD		% Rec		Max		Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	Limits	RPD	RPD	
Chloride	mg/L	ND	50	50	51.9	51.6	104	103	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	104	103	90-110	1	10	
Sulfate	mg/L	ND	50	50	50.9	50.6	102	101	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH AP-1
Pace Project No.: 92497129

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92497129001	DGWC-40				
92497129002	DGWC-67				
92497129003	DGWC-68A				
92497129004	DGWC-69				
92497129006	DGWC-37				
92497129007	DGWC-38				
92497129008	DGWC-39				
92497129001	DGWC-40	EPA 3010A	569672	EPA 6010D	569722
92497129002	DGWC-67	EPA 3010A	569672	EPA 6010D	569722
92497129003	DGWC-68A	EPA 3010A	569672	EPA 6010D	569722
92497129004	DGWC-69	EPA 3010A	569672	EPA 6010D	569722
92497129005	FD-2	EPA 3010A	569672	EPA 6010D	569722
92497129006	DGWC-37	EPA 3010A	570008	EPA 6010D	570053
92497129007	DGWC-38	EPA 3010A	570008	EPA 6010D	570053
92497129008	DGWC-39	EPA 3010A	570008	EPA 6010D	570053
92497129001	DGWC-40	EPA 3005A	569774	EPA 6020B	569814
92497129002	DGWC-67	EPA 3005A	569774	EPA 6020B	569814
92497129003	DGWC-68A	EPA 3005A	569774	EPA 6020B	569814
92497129004	DGWC-69	EPA 3005A	569774	EPA 6020B	569814
92497129005	FD-2	EPA 3005A	569774	EPA 6020B	569814
92497129006	DGWC-37	EPA 3005A	570089	EPA 6020B	570110
92497129007	DGWC-38	EPA 3005A	570089	EPA 6020B	570110
92497129008	DGWC-39	EPA 3005A	570089	EPA 6020B	570110
92497129001	DGWC-40	EPA 7470A	569299	EPA 7470A	569455
92497129002	DGWC-67	EPA 7470A	569299	EPA 7470A	569455
92497129003	DGWC-68A	EPA 7470A	569299	EPA 7470A	569455
92497129004	DGWC-69	EPA 7470A	569299	EPA 7470A	569455
92497129005	FD-2	EPA 7470A	569299	EPA 7470A	569455
92497129006	DGWC-37	EPA 7470A	569680	EPA 7470A	569886
92497129007	DGWC-38	EPA 7470A	569680	EPA 7470A	569886
92497129008	DGWC-39	EPA 7470A	569680	EPA 7470A	569886
92497129001	DGWC-40	SM 2450C-2011	569386		
92497129002	DGWC-67	SM 2450C-2011	569386		
92497129003	DGWC-68A	SM 2450C-2011	569386		
92497129004	DGWC-69	SM 2450C-2011	569386		
92497129005	FD-2	SM 2450C-2011	569386		
92497129006	DGWC-37	SM 2450C-2011	569806		
92497129007	DGWC-38	SM 2450C-2011	569806		
92497129008	DGWC-39	SM 2450C-2011	570219		
92497129001	DGWC-40	EPA 300.0 Rev 2.1 1993	569514		
92497129002	DGWC-67	EPA 300.0 Rev 2.1 1993	569514		
92497129003	DGWC-68A	EPA 300.0 Rev 2.1 1993	569514		
92497129004	DGWC-69	EPA 300.0 Rev 2.1 1993	569514		
92497129005	FD-2	EPA 300.0 Rev 2.1 1993	569514		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH AP-1

Pace Project No.: 92497129

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92497129006	DGWC-37	EPA 300.0 Rev 2.1 1993	569830		
92497129007	DGWC-38	EPA 300.0 Rev 2.1 1993	569830		
92497129008	DGWC-39	EPA 300.0 Rev 2.1 1993	569830		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA POWER

WO#: **92497129**



Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Proj. Name: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other ZIPLOC

Thermometer Used THR214 Type of Ice: Ice Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.9
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: POW 9/24/20

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

October 20, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCDONOUGH AP-1 RADS
Pace Project No.: 92497118

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 24, 2020 and September 25, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCDONOUGH AP-1 RADS
Pace Project No.: 92497118

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92497118001	DGWC-40	Water	09/23/20 14:15	09/24/20 09:25
92497118002	DGWC-67	Water	09/23/20 15:10	09/24/20 09:25
92497118003	DGWC-68A	Water	09/23/20 14:00	09/24/20 09:25
92497118004	DGWC-69	Water	09/23/20 11:50	09/24/20 09:25
92497118005	FD-2	Water	09/23/20 00:00	09/24/20 09:25
92497118006	DGWC-37	Water	09/24/20 10:00	09/25/20 13:30
92497118007	DGWC-38	Water	09/24/20 14:15	09/25/20 13:30
92497118008	DGWC-39	Water	09/25/20 11:05	09/25/20 13:30

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH AP-1 RADS
Pace Project No.: 92497118

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92497118001	DGWC-40	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92497118002	DGWC-67	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92497118003	DGWC-68A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92497118004	DGWC-69	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
92497118005	FD-2	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
92497118006	DGWC-37	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497118007	DGWC-38	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497118008	DGWC-39	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Sample: DGWC-40 **Lab ID: 92497118001** Collected: 09/23/20 14:15 Received: 09/24/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.414 ± 0.302 (0.493) C:79% T:NA	pCi/L	10/09/20 09:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.869 ± 0.790 (1.60) C:64% T:73%	pCi/L	10/12/20 19:08	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.28 ± 1.09 (2.09)	pCi/L	10/14/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Sample: DGWC-67 **Lab ID: 92497118002** Collected: 09/23/20 15:10 Received: 09/24/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.131 ± 0.225 (0.507) C:81% T:NA	pCi/L	10/09/20 09:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.234 ± 0.678 (1.68) C:64% T:60%	pCi/L	10/12/20 19:08	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.131 ± 0.903 (2.19)	pCi/L	10/14/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-68A Lab ID: 92497118003 Collected: 09/23/20 14:00 Received: 09/24/20 09:25 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.110 ± 0.212 (0.486) C:77% T:NA	pCi/L	10/09/20 09:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.453 ± 0.657 (1.41) C:68% T:72%	pCi/L	10/12/20 19:08	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.563 ± 0.869 (1.90)	pCi/L	10/14/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Sample: DGWC-69 **Lab ID: 92497118004** Collected: 09/23/20 11:50 Received: 09/24/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	1.20 ± 0.454 (0.482) C:95% T:NA	pCi/L	10/07/20 07:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.596 ± 0.494 (0.990) C:65% T:76%	pCi/L	10/05/20 15:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.80 ± 0.948 (1.47)	pCi/L	10/09/20 14:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Sample: FD-2 **Lab ID: 92497118005** Collected: 09/23/20 00:00 Received: 09/24/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.307 ± 0.244 (0.374) C:81% T:NA	pCi/L	10/07/20 07:52	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.414 ± 0.467 (0.977) C:62% T:77%	pCi/L	10/05/20 15:07	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.721 ± 0.711 (1.35)	pCi/L	10/09/20 14:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Sample: DGWC-37 **Lab ID: 92497118006** Collected: 09/24/20 10:00 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.280 ± 0.274 (0.533) C:82% T:NA	pCi/L	10/14/20 06:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.746 ± 0.424 (0.777) C:81% T:87%	pCi/L	10/15/20 14:16	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.03 ± 0.698 (1.31)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Sample: DGWC-38 **Lab ID: 92497118007** Collected: 09/24/20 14:15 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.156 ± 0.207 (0.433) C:83% T:NA	pCi/L	10/14/20 06:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.437 ± 0.425 (0.878) C:82% T:84%	pCi/L	10/15/20 14:16	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.593 ± 0.632 (1.31)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-39 Lab ID: 92497118008 Collected: 09/25/20 11:05 Received: 09/25/20 13:30 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0807 ± 0.186 (0.444) C:77% T:NA	pCi/L	10/14/20 06:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0999 ± 0.405 (0.918) C:76% T:78%	pCi/L	10/15/20 14:16	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.181 ± 0.591 (1.36)	pCi/L	10/19/20 11:01	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

QC Batch: 415890

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497118001, 92497118002, 92497118003

METHOD BLANK: 2010987

Matrix: Water

Associated Lab Samples: 92497118001, 92497118002, 92497118003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.214 ± 0.231 (0.446) C:86% T:NA	pCi/L	10/09/20 08:12	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

QC Batch: 416287

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497118004, 92497118005

METHOD BLANK: 2012789

Matrix: Water

Associated Lab Samples: 92497118004, 92497118005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.286 ± 0.336 (0.704) C:68% T:81%	pCi/L	10/05/20 11:57	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

QC Batch: 416276

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497118004, 92497118005

METHOD BLANK: 2012761

Matrix: Water

Associated Lab Samples: 92497118004, 92497118005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.169 ± 0.216 (0.447) C:97% T:NA	pCi/L	10/07/20 07:50	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

QC Batch:	417133	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92497118006, 92497118007, 92497118008

METHOD BLANK: 2016815 Matrix: Water

Associated Lab Samples: 92497118006, 92497118007, 92497118008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.00961 ± 0.301 (0.708) C:79% T:84%	pCi/L	10/15/20 14:13	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

QC Batch:	417132	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92497118006, 92497118007, 92497118008

METHOD BLANK: 2016814 Matrix: Water

Associated Lab Samples: 92497118006, 92497118007, 92497118008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0977 ± 0.149 (0.503) C:90% T:NA	pCi/L	10/14/20 06:25	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

QC Batch: 415888

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497118001, 92497118002, 92497118003

METHOD BLANK: 2010985

Matrix: Water

Associated Lab Samples: 92497118001, 92497118002, 92497118003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.197 ± 0.376 (0.826) C:67% T:78%	pCi/L	10/12/20 14:59	

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

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QUALIFIERS

Project: MCDONOUGH AP-1 RADS

Pace Project No.: 92497118

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH AP-1 RADS
Pace Project No.: 92497118

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92497118001	DGWC-40	EPA 9315	415890		
92497118002	DGWC-67	EPA 9315	415890		
92497118003	DGWC-68A	EPA 9315	415890		
92497118004	DGWC-69	EPA 9315	416276		
92497118005	FD-2	EPA 9315	416276		
92497118006	DGWC-37	EPA 9315	417132		
92497118007	DGWC-38	EPA 9315	417132		
92497118008	DGWC-39	EPA 9315	417132		
92497118001	DGWC-40	EPA 9320	415888		
92497118002	DGWC-67	EPA 9320	415888		
92497118003	DGWC-68A	EPA 9320	415888		
92497118004	DGWC-69	EPA 9320	416287		
92497118005	FD-2	EPA 9320	416287		
92497118006	DGWC-37	EPA 9320	417133		
92497118007	DGWC-38	EPA 9320	417133		
92497118008	DGWC-39	EPA 9320	417133		
92497118001	DGWC-40	Total Radium Calculation	418331		
92497118002	DGWC-67	Total Radium Calculation	418331		
92497118003	DGWC-68A	Total Radium Calculation	418331		
92497118004	DGWC-69	Total Radium Calculation	417873		
92497118005	FD-2	Total Radium Calculation	417873		
92497118006	DGWC-37	Total Radium Calculation	419143		
92497118007	DGWC-38	Total Radium Calculation	419143		
92497118008	DGWC-39	Total Radium Calculation	419143		

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Sample Condition Upon Receipt

Client Name: GA Power WO#: 92497118

Courier: Fed Ex UPS USPS Client Commercial Pace Of Tracking #:



Custody Seal on Cooler/Box Present: yes no Seals intact: y. no

Packing Material: Bubble Wrap Bubble Bags None Other ZIPLOC

Thermometer Used THE214 Type of Ice: Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.9 Biological Tissue is Frozen: Yes No Date and Initials of person examining contents: KRW 9/24/20

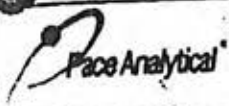
Temp should be above freezing to 6°C Comments:

Table with 16 rows of checklist items including Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: Field Data Required? Y / N Person Contacted: Date/Time: Comments/ Resolution:

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019
Page 1 of 1
Issuing Authority:

Project #

WO# : 92497118

PH: KLH1 Due Date: 10/15/20
CLIENT: GA-GA Power

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/BO15 (water) DOC, LLHg

*Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Pipette Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-VPH/Gas kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AGOU-100 mL Amber Unpreserved vials (N/A)	V9GU-20 mL Sanitization vials (N/A)	
	1																											
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											

BPIN - Radium

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/8/2020
Worklist: 56442
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010987	
MB concentration:	0.214	
M/B Counting Uncertainty:	0.229	
MB MDC:	0.446	
MB Numerical Performance Indicator:	1.83	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS56442	LCSD56442
Count Date:	10/9/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.741	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.940	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.794	
Numerical Performance Indicator:	0.49	
Percent Recovery:	104.19%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92497110001	Enter Duplicate
Duplicate Sample I.D.:	92497110001DUP	sample IDs if
Sample Result (pCi/L, g, F):	0.477	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.309	LCS/LCSD in
Sample Duplicate Result (pCi/L, g, F):	0.448	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.340	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.121	92497110001
Duplicate RPD:	6.12%	92497110001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

LAM 10/9/2020

OUT
10/9/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 10/8/2020
Worklist: 56442
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010987	
MB concentration:	0.214	
M/B Counting Uncertainty:	0.229	
MB MDC:	0.446	
MB Numerical Performance Indicator:	1.83	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56442	LCSD56442
Count Date:	10/9/2020	10/9/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.507	0.514
Target Conc. (pCi/L, g, F):	4.741	4.677
Uncertainty (Calculated):	0.057	0.056
Result (pCi/L, g, F):	4.940	4.201
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.794	0.785
Numerical Performance Indicator:	0.49	-1.18
Percent Recovery:	104.19%	89.83%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56442	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56442	
Sample Result (pCi/L, g, F):	4.940	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.794	
Sample Duplicate Result (pCi/L, g, F):	4.201	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.785	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.297	92497110001
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	14.81%	92497110001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

LAM 10/9/2020

Out
10/9/2020



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: JJY
Date: 10/6/2020
Worklist: 56467
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2012760	
MB concentration:	0.169	
M/B Counting Uncertainty:	0.215	
MB MDC:	0.447	
MB Numerical Performance Indicator:	1.54	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56467	LCSD56467
Count Date:	10/7/2020	10/7/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.508	0.512
Target Conc. (pCi/L, g, F):	4.730	4.694
Uncertainty (Calculated):	0.057	0.056
Result (pCi/L, g, F):	4.261	5.199
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.778	0.803
Numerical Performance Indicator:	-1.18	1.23
Percent Recovery:	90.09%	110.74%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	9/22/2020	
Sample I.D.:	30384536001	
Sample MS I.D.:	30384536001MS	
Sample MSD I.D.:		
Spike I.D.:	19-033	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	24.044	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):	0.494	
MS Target Conc. (pCi/L, g, F):	9.739	
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):	0.117	
MSD Spike Uncertainty (calculated):		
Sample Result:	0.047	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.218	
Sample Matrix Spike Result:	8.672	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.154	
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:	-1.850	
MSD Numerical Performance Indicator:		
MS Percent Recovery:	88.56%	
MSD Percent Recovery:		
MS Status vs Numerical Indicator:	N/A	
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:	125%	
MS/MSD Lower % Recovery Limits:	75%	

Duplicate Sample Assessment		
Sample I.D.:	LCS56467	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56467	
Sample Result (pCi/L, g, F):	4.261	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.778	
Sample Duplicate Result (pCi/L, g, F):	5.199	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.803	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.644	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	20.57%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

10/8/20
JJY

10/8/20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56589
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016814	
MB concentration:	-0.098	
M/B Counting Uncertainty:	0.148	
MB MDC:	0.503	
MB Numerical Performance Indicator:	-1.30	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD56589	LCSD56589
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.736	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.957	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.812	
Numerical Performance Indicator:	0.53	
Percent Recovery:	104.66%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92497114005	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92497114005DUP	
Sample Result (pCi/L, g, F):	0.265	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.249	
Sample Duplicate Result (pCi/L, g, F):	-0.086	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.079	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	2.633	92497114005
Duplicate RPD:	390.92%	92497114005DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision. N/A LAM 10/14/2020

LAM 10/14/2020

On 10-15-20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 10/13/2020
Worklist: 56589
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016814	
MB concentration:	-0.098	
M/B Counting Uncertainty:	0.148	
MB MDC:	0.503	
MB Numerical Performance Indicator:	-1.30	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD56589	LCSD56589
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.736	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.957	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.812	
Numerical Performance Indicator:	0.53	
Percent Recovery:	104.66%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92497118006	Enter Duplicate
Duplicate Sample I.D.:	92497118006DUP	sample IDs if
Sample Result (pCi/L, g, F):	0.280	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.271	LCS/LCSD in
Sample Duplicate Result (pCi/L, g, F):	0.399	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.250	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.631	92497118006
Duplicate RPD:	34.99%	92497118006DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision. N/A UAM 10/14/2020

LAM 10/14/2020

On 10.15.20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56590
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2018815	
MB concentration:	-0.010	
M/B 2 Sigma CSU:	0.301	
MB MDC:	0.708	
MB Numerical Performance Indicator:	-0.06	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS56590	LCS/D56590
Count Date:	10/15/2020	
Spike I.D.:	20-030	
Decay Corrected Spike Concentration (pCi/mL):	38.016	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.815	
Target Conc. (pCi/L, g, F):	4.665	
Uncertainty (Calculated):	0.229	
Result (pCi/L, g, F):	3.340	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.875	
Numerical Performance Indicator:	-2.87	
Percent Recovery:	71.58%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92497118006	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92497118006DUP	
Sample Result (pCi/L, g, F):	0.746	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.424	
Sample Duplicate Result (pCi/L, g, F):	0.204	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.426	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	1.767	92497118006
Duplicate RPD:	114.06%	92497118006DUP
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Fail	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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Handwritten date: 10/16/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/2/2020
Worklist: 56476
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2012789	
MB concentration:	0.286	
M/B 2 Sigma CSU:	0.336	
MB MDC:	0.704	
MB Numerical Performance Indicator:	1.67	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD56476	LCSD56476
Count Date:	10/5/2020	10/5/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.143	38.143
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.808	0.823
Target Conc. (pCi/L, g, F):	4.719	4.636
Uncertainty (Calculated):	0.231	0.227
Result (pCi/L, g, F):	5.880	6.157
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.341	1.375
Numerical Performance Indicator:	1.67	2.14
Percent Recovery:	124.59%	132.81%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCSD56476	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56476	
Sample Result (pCi/L, g, F):	5.880	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.341	
Sample Duplicate Result (pCi/L, g, F):	6.157	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.375	
Are sample and/or duplicate results below RL?:	NO	
Duplicate Numerical Performance Indicator:	-0.283	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.39%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/6/2020
Worklist: 56440
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010985	
MB concentration:	0.197	
M/B 2 Sigma CSU:	0.376	
MB MDC:	0.826	
MB Numerical Performance Indicator:	1.03	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56440	LCSD56440
Count Date:	10/12/2020	10/12/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.054	38.054
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.803	0.803
Target Conc. (pCi/L, g, F):	4.741	4.737
Uncertainty (Calculated):	0.232	0.232
Result (pCi/L, g, F):	3.863	4.161
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.965	1.023
Numerical Performance Indicator:	-1.73	-1.08
Percent Recovery:	81.48%	87.84%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56440	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56440	
Sample Result (pCi/L, g, F):	3.863	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.965	
Sample Duplicate Result (pCi/L, g, F):	4.161	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.023	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.416	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	7.51%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

KUB
10-13-2020

10-13-20

October 09, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 24, 2020 and September 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92497125001	B-89	Water	09/23/20 15:30	09/24/20 09:25
92497125002	B-62	Water	09/24/20 10:18	09/25/20 13:30
92497125003	B-77	Water	09/24/20 14:19	09/25/20 13:30
92497125004	FB-3	Water	09/24/20 11:00	09/25/20 13:30
92497125005	B-74	Water	09/25/20 10:05	09/25/20 13:30
92497125006	B-83	Water	09/25/20 09:10	09/25/20 13:30
92497125007	B-88	Water	09/25/20 10:15	09/25/20 13:30
92497125008	B-100	Water	09/25/20 10:50	09/25/20 13:30
92497125009	B-56	Water	09/28/20 11:14	09/28/20 14:21
92497125010	B-82	Water	09/28/20 10:14	09/28/20 14:21
92497125011	B-93	Water	09/28/20 09:50	09/28/20 14:21

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92497125001	B-89	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92497125002	B-62	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92497125003	B-77	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92497125004	FB-3	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92497125005	B-74	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92497125006	B-83	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92497125007	B-88	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92497125008	B-100	EPA 6010D	DRB	1
		EPA 6020B	CW1	13

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92497125009	B-56	EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
92497125010	B-82	SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
92497125011	B-93	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-89 Lab ID: 92497125001 Collected: 09/23/20 15:30 Received: 09/24/20 09:25 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.87	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	31.4	mg/L	1.0	0.070	1	09/29/20 14:17	09/29/20 21:06	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 18:39	10/01/20 11:46	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 18:39	10/01/20 11:46	7440-38-2	
Barium	0.028	mg/L	0.010	0.00071	1	09/29/20 18:39	10/01/20 11:46	7440-39-3	
Beryllium	0.000054J	mg/L	0.0030	0.000046	1	09/29/20 18:39	10/01/20 11:46	7440-41-7	
Boron	0.76	mg/L	0.10	0.0052	1	09/29/20 18:39	10/01/20 11:46	7440-42-8	
Cadmium	0.00057J	mg/L	0.0025	0.00012	1	09/29/20 18:39	10/01/20 11:46	7440-43-9	
Chromium	0.00072J	mg/L	0.010	0.00055	1	09/29/20 18:39	10/01/20 11:46	7440-47-3	
Cobalt	0.0025J	mg/L	0.0050	0.00038	1	09/29/20 18:39	10/01/20 11:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/29/20 18:39	10/01/20 11:46	7439-92-1	
Lithium	0.0055J	mg/L	0.030	0.00081	1	09/29/20 18:39	10/01/20 11:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/29/20 18:39	10/01/20 11:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/29/20 18:39	10/01/20 11:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 18:39	10/01/20 11:46	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.000080J	mg/L	0.00050	0.000078	1	09/28/20 09:15	09/29/20 08:11	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	260	mg/L	10.0	10.0	1		09/28/20 14:18		D6
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	9.1	mg/L	1.0	0.60	1		09/29/20 12:38	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 12:38	16984-48-8	
Sulfate	138	mg/L	2.0	1.0	2		09/29/20 20:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-62		Lab ID: 92497125002		Collected: 09/24/20 10:18		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	6.55	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	28.8	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:24	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00046J	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 18:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 18:20	7440-38-2	
Barium	0.025	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 18:20	7440-39-3	
Beryllium	0.00013J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 18:20	7440-41-7	
Boron	0.074J	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 18:20	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 18:20	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 18:20	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 18:20	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 18:20	7439-92-1	
Lithium	0.0084J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 18:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 18:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 18:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 18:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:33	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	170	mg/L	10.0	10.0	1		09/30/20 09:29		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5.7	mg/L	1.0	0.60	1		09/30/20 20:53	16887-00-6	
Fluoride	0.093J	mg/L	0.10	0.050	1		09/30/20 20:53	16984-48-8	
Sulfate	50.6	mg/L	1.0	0.50	1		09/30/20 20:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-77		Lab ID: 92497125003		Collected: 09/24/20 14:19		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	6.46	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	17.9	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:28	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00036J	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 18:25	7440-36-0	
Arsenic	0.0025J	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 18:25	7440-38-2	
Barium	0.12	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 18:25	7440-39-3	
Beryllium	0.000053J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 18:25	7440-41-7	
Boron	0.27	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 18:25	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 18:25	7440-43-9	
Chromium	0.00070J	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 18:25	7440-47-3	
Cobalt	0.00040J	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 18:25	7440-48-4	
Lead	0.00021J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 18:25	7439-92-1	
Lithium	0.00095J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 18:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 18:25	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 18:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 18:25	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:40	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	124	mg/L	10.0	10.0	1		09/30/20 09:30		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5.3	mg/L	1.0	0.60	1		09/30/20 21:08	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 21:08	16984-48-8	
Sulfate	2.9	mg/L	1.0	0.50	1		09/30/20 21:08	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: FB-3		Lab ID: 92497125004		Collected: 09/24/20 11:00	Received: 09/25/20 13:30	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:32	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 18:31	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 18:31	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 18:31	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 18:31	7440-41-7		
Boron	ND	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 18:31	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 18:31	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 18:31	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 18:31	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 18:31	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 18:31	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 18:31	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 18:31	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 18:31	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:42	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/30/20 09:31			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		09/30/20 21:22	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 21:22	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		09/30/20 21:22	14808-79-8		

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-74		Lab ID: 92497125005		Collected: 09/25/20 10:05		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	6.16	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	18.6	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:37	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 18:48	7440-36-0	
Arsenic	0.012	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 18:48	7440-38-2	
Barium	0.066	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 18:48	7440-39-3	
Beryllium	0.000097J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 18:48	7440-41-7	
Boron	0.30	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 18:48	7440-42-8	
Cadmium	0.00017J	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 18:48	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 18:48	7440-47-3	
Cobalt	0.0028J	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 18:48	7440-48-4	
Lead	0.000041J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 18:48	7439-92-1	
Lithium	0.0014J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 18:48	7439-93-2	
Molybdenum	0.049	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 18:48	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 18:48	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 18:48	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:45	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	134	mg/L	10.0	10.0	1		10/01/20 15:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.0	mg/L	1.0	0.60	1		09/30/20 22:05	16887-00-6	
Fluoride	0.14	mg/L	0.10	0.050	1		09/30/20 22:05	16984-48-8	
Sulfate	20.1	mg/L	1.0	0.50	1		09/30/20 22:05	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-83		Lab ID: 92497125006		Collected: 09/25/20 09:10		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	5.97	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	39.8	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:41	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 18:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 18:54	7440-38-2	
Barium	0.027	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 18:54	7440-39-3	
Beryllium	0.00028J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 18:54	7440-41-7	
Boron	0.35	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 18:54	7440-42-8	
Cadmium	0.00026J	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 18:54	7440-43-9	
Chromium	0.0051J	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 18:54	7440-47-3	
Cobalt	0.0073	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 18:54	7440-48-4	
Lead	0.000065J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 18:54	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 18:54	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 18:54	7439-98-7	
Selenium	0.019	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 18:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 18:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:47	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	244	mg/L	10.0	10.0	1		10/01/20 15:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.0	mg/L	1.0	0.60	1		09/30/20 22:49	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 22:49	16984-48-8	
Sulfate	107	mg/L	2.0	1.0	2		10/01/20 04:52	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-88		Lab ID: 92497125007		Collected: 09/25/20 10:15		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	5.75	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	79.8	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:45	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 19:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 19:00	7440-38-2	
Barium	0.021	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 19:00	7440-39-3	
Beryllium	0.00063J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 19:00	7440-41-7	
Boron	1.8	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 19:00	7440-42-8	
Cadmium	0.00022J	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 19:00	7440-43-9	
Chromium	0.00085J	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 19:00	7440-47-3	
Cobalt	0.0015J	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 19:00	7440-48-4	
Lead	0.00035J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 19:00	7439-92-1	
Lithium	0.0016J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 19:00	7439-93-2	
Molybdenum	0.0012J	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 19:00	7439-98-7	
Selenium	0.0033J	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 19:00	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:50	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	624	mg/L	20.0	20.0	1		10/01/20 15:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10	mg/L	1.0	0.60	1		09/30/20 23:03	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 23:03	16984-48-8	
Sulfate	344	mg/L	7.0	3.5	7		10/01/20 05:06	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-100		Lab ID: 92497125008		Collected: 09/25/20 10:50		Received: 09/25/20 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	5.53	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	44.7	mg/L	1.0	0.070	1	09/30/20 14:57	10/01/20 20:58	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 17:48	10/03/20 19:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:48	10/03/20 19:06	7440-38-2	
Barium	0.022	mg/L	0.010	0.00071	1	09/30/20 17:48	10/03/20 19:06	7440-39-3	
Beryllium	0.00035J	mg/L	0.0030	0.000046	1	09/30/20 17:48	10/03/20 19:06	7440-41-7	
Boron	0.27	mg/L	0.10	0.0052	1	09/30/20 17:48	10/03/20 19:06	7440-42-8	
Cadmium	0.00027J	mg/L	0.0025	0.00012	1	09/30/20 17:48	10/03/20 19:06	7440-43-9	
Chromium	0.00094J	mg/L	0.010	0.00055	1	09/30/20 17:48	10/03/20 19:06	7440-47-3	
Cobalt	0.034	mg/L	0.0050	0.00038	1	09/30/20 17:48	10/03/20 19:06	7440-48-4	
Lead	0.00021J	mg/L	0.0050	0.000036	1	09/30/20 17:48	10/03/20 19:06	7439-92-1	
Lithium	0.0027J	mg/L	0.030	0.00081	1	09/30/20 17:48	10/03/20 19:06	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 17:48	10/03/20 19:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 17:48	10/03/20 19:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 17:48	10/03/20 19:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:52	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	724	mg/L	20.0	20.0	1		10/01/20 15:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13.2	mg/L	1.0	0.60	1		09/30/20 23:18	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 23:18	16984-48-8	
Sulfate	385	mg/L	8.0	4.0	8		10/01/20 05:20	14808-79-8	

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-56		Lab ID: 92497125009		Collected: 09/28/20 11:14		Received: 09/28/20 14:21		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	4.90	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	15.1	mg/L	1.0	0.070	1	10/01/20 15:00	10/02/20 19:50	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/01/20 15:24	10/02/20 19:51	7440-36-0	
Arsenic	0.0047J	mg/L	0.0050	0.00078	1	10/01/20 15:24	10/02/20 19:51	7440-38-2	
Barium	0.026	mg/L	0.010	0.00071	1	10/01/20 15:24	10/02/20 19:51	7440-39-3	
Beryllium	0.0012J	mg/L	0.0030	0.000046	1	10/01/20 15:24	10/02/20 19:51	7440-41-7	
Boron	1.4	mg/L	0.10	0.0052	1	10/01/20 15:24	10/02/20 19:51	7440-42-8	
Cadmium	0.00024J	mg/L	0.0025	0.00012	1	10/01/20 15:24	10/02/20 19:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	10/01/20 15:24	10/02/20 19:51	7440-47-3	
Cobalt	0.042	mg/L	0.0050	0.00038	1	10/01/20 15:24	10/02/20 19:51	7440-48-4	
Lead	0.000091J	mg/L	0.0050	0.000036	1	10/01/20 15:24	10/02/20 19:51	7439-92-1	
Lithium	0.0050J	mg/L	0.030	0.00081	1	10/01/20 15:24	10/02/20 19:51	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/01/20 15:24	10/02/20 19:51	7439-98-7	
Selenium	0.029	mg/L	0.010	0.0016	1	10/01/20 15:24	10/02/20 19:51	7782-49-2	
Thallium	0.00023J	mg/L	0.0010	0.00014	1	10/01/20 15:24	10/02/20 19:51	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:54	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	320	mg/L	10.0	10.0	1		10/01/20 15:26		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8.7	mg/L	1.0	0.60	1		09/30/20 18:20	16887-00-6	
Fluoride	0.098J	mg/L	0.10	0.050	1		09/30/20 18:20	16984-48-8	
Sulfate	211	mg/L	4.0	2.0	4		09/30/20 22:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-82		Lab ID: 92497125010		Collected: 09/28/20 10:14	Received: 09/28/20 14:21	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 15:24		
pH	5.54	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	26.5	mg/L	1.0	0.070	1	10/01/20 15:00	10/02/20 19:54	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/01/20 19:00	10/03/20 15:51	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/01/20 19:00	10/03/20 15:51	7440-38-2	
Barium	0.023	mg/L	0.010	0.00071	1	10/01/20 19:00	10/03/20 15:51	7440-39-3	
Beryllium	0.0015J	mg/L	0.0030	0.000046	1	10/01/20 19:00	10/03/20 15:51	7440-41-7	
Boron	1.1	mg/L	0.10	0.0052	1	10/01/20 19:00	10/03/20 15:51	7440-42-8	
Cadmium	0.00066J	mg/L	0.0025	0.00012	1	10/01/20 19:00	10/03/20 15:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	10/01/20 19:00	10/03/20 15:51	7440-47-3	
Cobalt	0.0053	mg/L	0.0050	0.00038	1	10/01/20 19:00	10/03/20 15:51	7440-48-4	
Lead	0.00011J	mg/L	0.0050	0.000036	1	10/01/20 19:00	10/03/20 15:51	7439-92-1	
Lithium	0.0010J	mg/L	0.030	0.00081	1	10/01/20 19:00	10/03/20 15:51	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/01/20 19:00	10/03/20 15:51	7439-98-7	
Selenium	0.0021J	mg/L	0.010	0.0016	1	10/01/20 19:00	10/03/20 15:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/20 19:00	10/03/20 15:51	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:57	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	454	mg/L	10.0	10.0	1		10/01/20 15:27		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	9.9	mg/L	1.0	0.60	1		09/30/20 18:35	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 18:35	16984-48-8	
Sulfate	287	mg/L	6.0	3.0	6		09/30/20 22:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Sample: B-93		Lab ID: 92497125011		Collected: 09/28/20 09:50		Received: 09/28/20 14:21		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.67	Std. Units			1		09/29/20 15:24		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	110	mg/L	1.0	0.070	1	10/01/20 15:00	10/02/20 19:58	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0014J	mg/L	0.0030	0.00028	1	10/01/20 19:00	10/03/20 16:14	7440-36-0	
Arsenic	0.0027J	mg/L	0.0050	0.00078	1	10/01/20 19:00	10/03/20 16:14	7440-38-2	
Barium	0.017	mg/L	0.010	0.00071	1	10/01/20 19:00	10/03/20 16:14	7440-39-3	
Beryllium	0.015	mg/L	0.0030	0.000046	1	10/01/20 19:00	10/03/20 16:14	7440-41-7	
Boron	3.0	mg/L	0.10	0.0052	1	10/01/20 19:00	10/03/20 16:14	7440-42-8	
Cadmium	0.00074J	mg/L	0.0025	0.00012	1	10/01/20 19:00	10/03/20 16:14	7440-43-9	
Chromium	0.00066J	mg/L	0.010	0.00055	1	10/01/20 19:00	10/03/20 16:14	7440-47-3	
Cobalt	0.064	mg/L	0.0050	0.00038	1	10/01/20 19:00	10/03/20 16:14	7440-48-4	
Lead	0.00012J	mg/L	0.0050	0.000036	1	10/01/20 19:00	10/03/20 16:14	7439-92-1	
Lithium	0.011J	mg/L	0.030	0.00081	1	10/01/20 19:00	10/03/20 16:14	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/01/20 19:00	10/03/20 16:14	7439-98-7	
Selenium	0.036	mg/L	0.010	0.0016	1	10/01/20 19:00	10/03/20 16:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/20 19:00	10/03/20 16:14	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00024J	mg/L	0.00050	0.000078	1	09/29/20 13:30	09/30/20 12:59	7439-97-6	B
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	686	mg/L	20.0	20.0	1		10/01/20 15:27		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10.8	mg/L	1.0	0.60	1		10/01/20 14:53	16887-00-6	
Fluoride	0.30	mg/L	0.10	0.050	1		10/01/20 14:53	16984-48-8	
Sulfate	419	mg/L	9.0	4.5	9		10/01/20 20:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 569672 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497125001

METHOD BLANK: 3017857 Matrix: Water
Associated Lab Samples: 92497125001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/29/20 19:56	

LABORATORY CONTROL SAMPLE: 3017858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.97J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017859 3017860

Parameter	Units	92496847006		3017859		3017860		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Calcium	mg/L	2510 ug/L	1	1	3.4	3.4	93	92	75-125	0	20

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch:	570008	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D ATL
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008

METHOD BLANK: 3019452 Matrix: Water
Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/01/20 19:24	

LABORATORY CONTROL SAMPLE: 3019453

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.96J	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019454 3019455

Parameter	Units	3019454		3019455		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496941020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	53.1	1	1	55.5	54.3	237	115	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch:	570301	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D ATL
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125009, 92497125010, 92497125011

METHOD BLANK: 3020964 Matrix: Water

Associated Lab Samples: 92497125009, 92497125010, 92497125011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/02/20 18:13	

LABORATORY CONTROL SAMPLE: 3020965

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020966 3020967

Parameter	Units	3020966		3020967		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	38.6	1	37.8	39.0	-77	45	75-125	3	20	M1

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 569774 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125001

METHOD BLANK: 3018372 Matrix: Water
Associated Lab Samples: 92497125001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/01/20 09:53	
Arsenic	mg/L	ND	0.0050	0.00078	10/01/20 09:53	
Barium	mg/L	ND	0.010	0.00071	10/01/20 09:53	
Beryllium	mg/L	ND	0.0030	0.000046	10/01/20 09:53	
Boron	mg/L	ND	0.10	0.0052	10/01/20 09:53	
Cadmium	mg/L	ND	0.0025	0.00012	10/01/20 09:53	
Chromium	mg/L	ND	0.010	0.00055	10/01/20 09:53	
Cobalt	mg/L	ND	0.0050	0.00038	10/01/20 09:53	
Lead	mg/L	ND	0.0050	0.000036	10/01/20 09:53	
Lithium	mg/L	ND	0.030	0.00081	10/01/20 09:53	
Molybdenum	mg/L	ND	0.010	0.00069	10/01/20 09:53	
Selenium	mg/L	ND	0.010	0.0016	10/01/20 09:53	
Thallium	mg/L	ND	0.0010	0.00014	10/01/20 09:53	

LABORATORY CONTROL SAMPLE: 3018373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	103	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.093	93	80-120	
Boron	mg/L	1	0.91	91	80-120	
Cadmium	mg/L	0.1	0.095	95	80-120	
Chromium	mg/L	0.1	0.092	92	80-120	
Cobalt	mg/L	0.1	0.092	92	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.092	92	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018374 3018375

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497149004	Result	Spike Conc.	Spike Conc.								
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	0	20		
Arsenic	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Parameter	Units	3018374		3018375		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497149004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.0039J	0.1	0.1	0.10	0.10	99	100	75-125	1	20		
Beryllium	mg/L	0.000059J	0.1	0.1	0.090	0.091	90	91	75-125	1	20		
Boron	mg/L	0.0073J	1	1	0.88	0.90	87	89	75-125	2	20		
Cadmium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.095	0.095	94	94	75-125	0	20		
Cobalt	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20		
Lead	mg/L	0.00015J	0.1	0.1	0.093	0.094	92	94	75-125	1	20		
Lithium	mg/L	0.013J	0.1	0.1	0.10	0.10	91	91	75-125	0	20		
Molybdenum	mg/L	0.010	0.1	0.1	0.11	0.11	96	97	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.099	0.096	98	95	75-125	3	20		
Thallium	mg/L	0.00016J	0.1	0.1	0.094	0.095	94	95	75-125	1	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 570089 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008

METHOD BLANK: 3020046 Matrix: Water
Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/03/20 17:40	
Arsenic	mg/L	ND	0.0050	0.00078	10/03/20 17:40	
Barium	mg/L	ND	0.010	0.00071	10/03/20 17:40	
Beryllium	mg/L	ND	0.0030	0.000046	10/03/20 17:40	
Boron	mg/L	ND	0.10	0.0052	10/03/20 17:40	
Cadmium	mg/L	ND	0.0025	0.00012	10/03/20 17:40	
Chromium	mg/L	ND	0.010	0.00055	10/03/20 17:40	
Cobalt	mg/L	ND	0.0050	0.00038	10/03/20 17:40	
Lead	mg/L	ND	0.0050	0.000036	10/03/20 17:40	
Lithium	mg/L	ND	0.030	0.00081	10/03/20 17:40	
Molybdenum	mg/L	ND	0.010	0.00069	10/03/20 17:40	
Selenium	mg/L	ND	0.010	0.0016	10/03/20 17:40	
Thallium	mg/L	ND	0.0010	0.00014	10/03/20 17:40	

LABORATORY CONTROL SAMPLE: 3020047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.092	92	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.097	97	80-120	
Molybdenum	mg/L	0.1	0.096	96	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020048 3020049

Parameter	Units	92496941025 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.095	0.10	95	100	75-125	6	20	
Arsenic	mg/L	0.00088J	0.1	0.1	0.095	0.095	94	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Parameter	Units	92496941025		3020048		3020049		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Barium	mg/L	0.032	0.1	0.1	0.13	0.13	95	98	75-125	3	20			
Beryllium	mg/L	0.00070J	0.1	0.1	0.099	0.097	98	97	75-125	1	20			
Boron	mg/L	0.84	1	1	2.0	1.9	112	107	75-125	3	20			
Cadmium	mg/L	0.00028J	0.1	0.1	0.097	0.097	97	97	75-125	0	20			
Chromium	mg/L	0.0028J	0.1	0.1	0.10	0.10	100	100	75-125	1	20			
Cobalt	mg/L	0.027	0.1	0.1	0.13	0.13	99	98	75-125	1	20			
Lead	mg/L	0.00022J	0.1	0.1	0.087	0.094	86	93	75-125	8	20			
Lithium	mg/L	0.0012J	0.1	0.1	0.10	0.10	102	100	75-125	2	20			
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.10	98	102	75-125	4	20			
Selenium	mg/L	0.012	0.1	0.1	0.11	0.11	96	95	75-125	1	20			
Thallium	mg/L	0.00034J	0.1	0.1	0.093	0.094	93	94	75-125	1	20			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 570307 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125009

METHOD BLANK: 3020982 Matrix: Water
Associated Lab Samples: 92497125009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/02/20 17:11	
Arsenic	mg/L	ND	0.0050	0.00078	10/02/20 17:11	
Barium	mg/L	ND	0.010	0.00071	10/02/20 17:11	
Beryllium	mg/L	ND	0.0030	0.000046	10/02/20 17:11	
Boron	mg/L	ND	0.10	0.0052	10/02/20 17:11	
Cadmium	mg/L	ND	0.0025	0.00012	10/02/20 17:11	
Chromium	mg/L	ND	0.010	0.00055	10/02/20 17:11	
Cobalt	mg/L	ND	0.0050	0.00038	10/02/20 17:11	
Lead	mg/L	ND	0.0050	0.000036	10/02/20 17:11	
Lithium	mg/L	ND	0.030	0.00081	10/02/20 17:11	
Molybdenum	mg/L	ND	0.010	0.00069	10/02/20 17:11	
Selenium	mg/L	ND	0.010	0.0016	10/02/20 17:11	
Thallium	mg/L	ND	0.0010	0.00014	10/02/20 17:11	

LABORATORY CONTROL SAMPLE: 3020983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020984 3020985

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497149015	Result	Conc.	Conc.								
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20		
Arsenic	mg/L	ND	0.1	0.1	0.098	0.099	98	98	75-125	0	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Parameter	Units	3020984		3020985		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92497149015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.079	0.1	0.1	0.18	0.18	101	99	75-125	1	20		
Beryllium	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	0	20		
Boron	mg/L	2.1	1	1	3.1	3.1	99	97	75-125	1	20		
Cadmium	mg/L	0.00027J	0.1	0.1	0.098	0.098	98	98	75-125	0	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Lithium	mg/L	0.0065J	0.1	0.1	0.10	0.10	97	97	75-125	0	20		
Molybdenum	mg/L	0.0012J	0.1	0.1	0.10	0.10	101	100	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.095	0.094	95	94	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	0	20		

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 570375 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125010, 92497125011

METHOD BLANK: 3021668 Matrix: Water
Associated Lab Samples: 92497125010, 92497125011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/03/20 14:31	
Arsenic	mg/L	ND	0.0050	0.00078	10/03/20 14:31	
Barium	mg/L	ND	0.010	0.00071	10/03/20 14:31	
Beryllium	mg/L	ND	0.0030	0.000046	10/03/20 14:31	
Boron	mg/L	ND	0.10	0.0052	10/03/20 14:31	
Cadmium	mg/L	ND	0.0025	0.00012	10/03/20 14:31	
Chromium	mg/L	ND	0.010	0.00055	10/03/20 14:31	
Cobalt	mg/L	ND	0.0050	0.00038	10/03/20 14:31	
Lead	mg/L	ND	0.0050	0.000036	10/03/20 14:31	
Lithium	mg/L	ND	0.030	0.00081	10/03/20 14:31	
Molybdenum	mg/L	ND	0.010	0.00069	10/03/20 14:31	
Selenium	mg/L	ND	0.010	0.0016	10/03/20 14:31	
Thallium	mg/L	ND	0.0010	0.00014	10/03/20 14:31	

LABORATORY CONTROL SAMPLE: 3021669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.097	97	80-120	
Arsenic	mg/L	0.1	0.092	92	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.095	95	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.097	97	80-120	
Selenium	mg/L	0.1	0.092	92	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021670 3021671

Parameter	Units	92497125010 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.095	0.094	94	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021670												3021671	
Parameter	Units	92497125010 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Barium	mg/L	0.023	0.1	0.1	0.12	0.12	97	99	75-125	1	20		
Beryllium	mg/L	0.0015J	0.1	0.1	0.098	0.10	97	100	75-125	3	20		
Boron	mg/L	1.1	1	1	2.1	2.2	101	114	75-125	6	20		
Cadmium	mg/L	0.00066J	0.1	0.1	0.097	0.097	96	97	75-125	0	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Cobalt	mg/L	0.0053	0.1	0.1	0.10	0.10	98	99	75-125	1	20		
Lead	mg/L	0.00011J	0.1	0.1	0.095	0.095	95	95	75-125	1	20		
Lithium	mg/L	0.0010J	0.1	0.1	0.10	0.10	100	103	75-125	3	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20		
Selenium	mg/L	0.0021J	0.1	0.1	0.097	0.094	95	92	75-125	3	20		
Thallium	mg/L	ND	0.1	0.1	0.094	0.096	94	96	75-125	2	20		

SAMPLE DUPLICATE: 3021683

Parameter	Units	92497981001	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Antimony	mg/L	ND	ND		20	
Arsenic	mg/L	ND	0.0078	4	20	
Barium	mg/L	ND	0.0046J		20	
Beryllium	mg/L	ND	ND		20	
Boron	mg/L	ND	0.018J		20	
Cadmium	mg/L	ND	ND		20	
Chromium	mg/L	ND	0.00061J		20	
Cobalt	mg/L	ND	0.00074J		20	
Lead	mg/L	ND	0.00016J		20	
Lithium	mg/L	ND	ND		20	
Molybdenum	mg/L	ND	ND		20	
Selenium	mg/L	ND	ND		20	
Thallium	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch: 569295

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125001

METHOD BLANK: 3016173

Matrix: Water

Associated Lab Samples: 92497125001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/29/20 07:07	

LABORATORY CONTROL SAMPLE: 3016174

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016175 3016176

Parameter	Units	3016175		3016176		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0026	99	104	75-125	5	20	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch:	569682	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008, 92497125009, 92497125010, 92497125011

METHOD BLANK: 3017915 Matrix: Water
Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008, 92497125009, 92497125010, 92497125011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.000096J	0.00050	0.000078	09/30/20 11:53	

LABORATORY CONTROL SAMPLE: 3017916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017917 3017918

Parameter	Units	3017917		3017918		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Mercury	mg/L	92497141011 ND	MS Spike Conc. 0.0025	MSD Spike Conc. 0.0025	MS Result 0.0025	MSD Result 0.0025	96	98	75-125	2	20

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch: 569386

Analysis Method: SM 2450C-2011

QC Batch Method: SM 2450C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125001

METHOD BLANK: 3016890

Matrix: Water

Associated Lab Samples: 92497125001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/28/20 14:18	

LABORATORY CONTROL SAMPLE: 3016891

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	429	107	84-108	

SAMPLE DUPLICATE: 3016892

Parameter	Units	92497125001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	260	295	13	10	D6

SAMPLE DUPLICATE: 3016893

Parameter	Units	92497141008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	81.0	59.0	31	10	D6

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch: 569874	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125002

METHOD BLANK: 3018862 Matrix: Water

Associated Lab Samples: 92497125002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/30/20 09:26	

LABORATORY CONTROL SAMPLE: 3018863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	389	97	84-108	

SAMPLE DUPLICATE: 3018864

Parameter	Units	92497404001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	130	150	14	10	D6

SAMPLE DUPLICATE: 3018865

Parameter	Units	92495894026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	790	774	2	10	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 569876 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92497125003, 92497125004

METHOD BLANK: 3018866 Matrix: Water
Associated Lab Samples: 92497125003, 92497125004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/30/20 09:30	

LABORATORY CONTROL SAMPLE: 3018867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	403	101	84-108	

SAMPLE DUPLICATE: 3018868

Parameter	Units	92497125003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	124	118	5	10	

SAMPLE DUPLICATE: 3018869

Parameter	Units	92497149013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch:	570219	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125005, 92497125006, 92497125007, 92497125008

METHOD BLANK: 3020458 Matrix: Water
Associated Lab Samples: 92497125005, 92497125006, 92497125007, 92497125008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/01/20 15:22	

LABORATORY CONTROL SAMPLE: 3020459

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 3020460

Parameter	Units	92497125005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	134	142	6	10	

SAMPLE DUPLICATE: 3020461

Parameter	Units	92497146006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	878	918	4	10	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch:	570220	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92497125009, 92497125010, 92497125011

METHOD BLANK: 3020462 Matrix: Water

Associated Lab Samples: 92497125009, 92497125010, 92497125011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/01/20 15:26	

LABORATORY CONTROL SAMPLE: 3020463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 3020464

Parameter	Units	92496524014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	188	205	9	10	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 569514 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92497125001

METHOD BLANK: 3017398 Matrix: Water
Associated Lab Samples: 92497125001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/29/20 11:26	
Fluoride	mg/L	ND	0.10	0.050	09/29/20 11:26	
Sulfate	mg/L	ND	1.0	0.50	09/29/20 11:26	

LABORATORY CONTROL SAMPLE: 3017399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.9	108	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	52.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017400 3017401

Parameter	Units	92496941018		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	ND	50	50	50	52.4	51.8	105	104	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.5	2.3	2.4	93	94	90-110	0	10	
Sulfate	mg/L	ND	50	50	50	51.0	50.1	101	100	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017402 3017403

Parameter	Units	92496941019		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	ND	50	50	50	51.7	51.7	103	103	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.5	2.3	2.4	91	95	90-110	5	10	
Sulfate	mg/L	ND	50	50	50	50.0	49.9	100	100	90-110	0	10	

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 569832 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008

METHOD BLANK: 3018769 Matrix: Water
Associated Lab Samples: 92497125002, 92497125003, 92497125004, 92497125005, 92497125006, 92497125007, 92497125008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/30/20 20:24	
Fluoride	mg/L	ND	0.10	0.050	09/30/20 20:24	
Sulfate	mg/L	ND	1.0	0.50	09/30/20 20:24	

LABORATORY CONTROL SAMPLE: 3018770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.0	102	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	49.8	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018771 3018772

Parameter	Units	92497125004 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chloride	mg/L	ND	50	51.9	50	51.4	104	103	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.6	2.5	2.6	105	103	90-110	2	10	
Sulfate	mg/L	ND	50	50.5	50	50.0	101	100	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018773 3018774

Parameter	Units	92497141016 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chloride	mg/L	ND	50	51.8	50	51.5	104	103	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.6	2.5	2.5	105	100	90-110	4	10	
Sulfate	mg/L	ND	50	50.5	50	50.1	101	100	90-110	1	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

QC Batch: 569922	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92497125009, 92497125010

METHOD BLANK: 3019036 Matrix: Water

Associated Lab Samples: 92497125009, 92497125010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/30/20 11:24	
Fluoride	mg/L	ND	0.10	0.050	09/30/20 11:24	
Sulfate	mg/L	ND	1.0	0.50	09/30/20 11:24	

LABORATORY CONTROL SAMPLE: 3019037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.9	100	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	50	50.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019038 3019039

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497713005 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	25.7	50	50	75.8	77.8	100	104	90-110	3	10		
Fluoride	mg/L	ND	2.5	2.5	2.3	2.9	92	116	90-110	23	10	M1,R1	
Sulfate	mg/L	1.3	50	50	53.1	55.8	104	109	90-110	5	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019040 3019041

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497146005 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	7.5	50	50	59.7	61.3	104	108	90-110	3	10		
Fluoride	mg/L	ND	2.5	2.5	1.8	2.0	71	81	90-110	13	10	M1,R1	
Sulfate	mg/L	7.2	50	50	59.9	61.2	105	108	90-110	2	10		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

QC Batch: 570137 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92497125011

METHOD BLANK: 3020267 Matrix: Water
Associated Lab Samples: 92497125011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/20 07:56	
Fluoride	mg/L	ND	0.10	0.050	10/01/20 07:56	
Sulfate	mg/L	ND	1.0	0.50	10/01/20 07:56	

LABORATORY CONTROL SAMPLE: 3020268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.3	107	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	53.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020269 3020270

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495894028 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	542	50	50	583	587	82	89	90-110	1	10	M6	
Fluoride	mg/L	0.41	2.5	2.5	3.2	3.1	110	109	90-110	1	10		
Sulfate	mg/L	3480	50	50	3520	3530	86	111	90-110	0	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020271 3020272

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496914018 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	1.6	50	50	56.0	56.5	109	110	90-110	1	10		
Fluoride	mg/L	0.063J	2.5	2.5	2.8	2.8	109	111	90-110	2	10	M1	
Sulfate	mg/L	110	50	50	160	161	101	103	90-110	1	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH ASSESSMENT
Pace Project No.: 92497125

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92497125001	B-89				
92497125002	B-62				
92497125003	B-77				
92497125005	B-74				
92497125006	B-83				
92497125007	B-88				
92497125008	B-100				
92497125009	B-56				
92497125010	B-82				
92497125011	B-93				
92497125001	B-89	EPA 3010A	569672	EPA 6010D	569722
92497125002	B-62	EPA 3010A	570008	EPA 6010D	570053
92497125003	B-77	EPA 3010A	570008	EPA 6010D	570053
92497125004	FB-3	EPA 3010A	570008	EPA 6010D	570053
92497125005	B-74	EPA 3010A	570008	EPA 6010D	570053
92497125006	B-83	EPA 3010A	570008	EPA 6010D	570053
92497125007	B-88	EPA 3010A	570008	EPA 6010D	570053
92497125008	B-100	EPA 3010A	570008	EPA 6010D	570053
92497125009	B-56	EPA 3010A	570301	EPA 6010D	570373
92497125010	B-82	EPA 3010A	570301	EPA 6010D	570373
92497125011	B-93	EPA 3010A	570301	EPA 6010D	570373
92497125001	B-89	EPA 3005A	569774	EPA 6020B	569814
92497125002	B-62	EPA 3005A	570089	EPA 6020B	570110
92497125003	B-77	EPA 3005A	570089	EPA 6020B	570110
92497125004	FB-3	EPA 3005A	570089	EPA 6020B	570110
92497125005	B-74	EPA 3005A	570089	EPA 6020B	570110
92497125006	B-83	EPA 3005A	570089	EPA 6020B	570110
92497125007	B-88	EPA 3005A	570089	EPA 6020B	570110
92497125008	B-100	EPA 3005A	570089	EPA 6020B	570110
92497125009	B-56	EPA 3005A	570307	EPA 6020B	570372
92497125010	B-82	EPA 3005A	570375	EPA 6020B	570411
92497125011	B-93	EPA 3005A	570375	EPA 6020B	570411
92497125001	B-89	EPA 7470A	569295	EPA 7470A	569452
92497125002	B-62	EPA 7470A	569682	EPA 7470A	569887
92497125003	B-77	EPA 7470A	569682	EPA 7470A	569887
92497125004	FB-3	EPA 7470A	569682	EPA 7470A	569887
92497125005	B-74	EPA 7470A	569682	EPA 7470A	569887
92497125006	B-83	EPA 7470A	569682	EPA 7470A	569887
92497125007	B-88	EPA 7470A	569682	EPA 7470A	569887
92497125008	B-100	EPA 7470A	569682	EPA 7470A	569887
92497125009	B-56	EPA 7470A	569682	EPA 7470A	569887
92497125010	B-82	EPA 7470A	569682	EPA 7470A	569887
92497125011	B-93	EPA 7470A	569682	EPA 7470A	569887
92497125001	B-89	SM 2450C-2011	569386		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

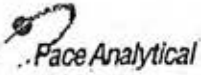
Project: MCDONOUGH ASSESSMENT

Pace Project No.: 92497125

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92497125002	B-62	SM 2450C-2011	569874		
92497125003	B-77	SM 2450C-2011	569876		
92497125004	FB-3	SM 2450C-2011	569876		
92497125005	B-74	SM 2450C-2011	570219		
92497125006	B-83	SM 2450C-2011	570219		
92497125007	B-88	SM 2450C-2011	570219		
92497125008	B-100	SM 2450C-2011	570219		
92497125009	B-56	SM 2450C-2011	570220		
92497125010	B-82	SM 2450C-2011	570220		
92497125011	B-93	SM 2450C-2011	570220		
92497125001	B-89	EPA 300.0 Rev 2.1 1993	569514		
92497125002	B-62	EPA 300.0 Rev 2.1 1993	569832		
92497125003	B-77	EPA 300.0 Rev 2.1 1993	569832		
92497125004	FB-3	EPA 300.0 Rev 2.1 1993	569832		
92497125005	B-74	EPA 300.0 Rev 2.1 1993	569832		
92497125006	B-83	EPA 300.0 Rev 2.1 1993	569832		
92497125007	B-88	EPA 300.0 Rev 2.1 1993	569832		
92497125008	B-100	EPA 300.0 Rev 2.1 1993	569832		
92497125009	B-56	EPA 300.0 Rev 2.1 1993	569922		
92497125010	B-82	EPA 300.0 Rev 2.1 1993	569922		
92497125011	B-93	EPA 300.0 Rev 2.1 1993	570137		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: 92497125



Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other ZIPLOC

Thermometer Used THR214 Type of Ice: ICE Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: KRW

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Page: 1 Of 1	
Company: Georgia Power - Coal Combustion Residuals		Report To: Joey Abraham		Address: sacmvo-cas@southernco.com		Regulatory Agency	
Address: 2432 Maner Road Atlanta, GA 30339		Copy To: Golder		Company Name			
Email: jabraham@southernco.com		Purchase Order #		Address:		State / Location	
Phone: (404) 506-7239 Fax:		Project Name: Plant McDonough Assessment		Face Contact: Kevin Herring			
Requested Due Date: 10 Day TAT		Project #: 166849618		Face Profile #		GA	

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, ., -) Sample IDs must be unique	MATRIX CODE Drinking Water DW Water WT Waste Water WW Pond P Soil/Sediment SS Wipe WIP Air AIR Dew Dew Tissue T	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	
									H2SO4	HNO3	HCl	NaOH + Zn Acetate		Metaphenol
1	B-74	WT G	9/25/2020	10:05	5	2	J		X	X	X	X		pH= 6.16 005
2	B-83	WT G	9/25/2020	9:40	5	2	J		X	X	X	X		pH= 5.67 006
3	B-88	WT G	9/25/2020	10:11	5	2	J		X	X	X	X		pH= 5.75 007
4	B-100	WT G	9/25/2020	10:54	5	2	J		X	X	X	X		pH= 5.53 008
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*App III: IV Metals - As, Sb, B, Be, Bi, Ca, Cd, Cr, D, Co, Fe, Li, Hg, Mn, Se, Th	<i>Chris T...</i>	9/25/20	1330	<i>J. Williams / P&E</i>	9/25/20	1330	

Samples by: *Chris T...*
 DATE Signed: 9-25-20

TEMP in C	Received on Ice (Y/N)	Cooling (Y/N)	Sealed (Y/N)	Collected (Y/N)	Sample Intact (Y/N)

October 20, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCDONOUGH ASSESSMENT RADS
Pace Project No.: 92497117

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 24, 2020 and September 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCDONOUGH ASSESSMENT RADS
Pace Project No.: 92497117

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCDONOUGH ASSESSMENT RADS
Pace Project No.: 92497117

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92497117001	B-89	Water	09/23/20 15:30	09/24/20 09:25
92497117002	B-62	Water	09/24/20 10:18	09/25/20 13:30
92497117003	B-77	Water	09/24/20 14:19	09/25/20 13:30
92497117004	FB-3	Water	09/24/20 11:00	09/25/20 13:30
92497117005	B-74	Water	09/25/20 10:05	09/25/20 13:30
92497117006	B-83	Water	09/25/20 09:10	09/25/20 13:30
92497117007	B-88	Water	09/25/20 10:15	09/25/20 13:30
92497117008	B-100	Water	09/25/20 10:50	09/25/20 13:30
92497117009	B-56	Water	09/28/20 11:14	09/28/20 14:21
92497117010	B-82	Water	09/28/20 10:14	09/28/20 14:21
92497117011	B-93	Water	09/28/20 09:50	09/28/20 14:21

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCDONOUGH ASSESSMENT RADS
Pace Project No.: 92497117

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92497117001	B-89	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92497117002	B-62	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117003	B-77	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117004	FB-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117005	B-74	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117006	B-83	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117007	B-88	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117008	B-100	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117009	B-56	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117010	B-82	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92497117011	B-93	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-89 **Lab ID: 92497117001** Collected: 09/23/20 15:30 Received: 09/24/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.232 ± 0.237 (0.453) C:86% T:NA	pCi/L	10/09/20 09:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.305 ± 0.529 (1.15) C:90% T:75%	pCi/L	10/12/20 19:08	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.537 ± 0.766 (1.60)	pCi/L	10/14/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: B-62 Lab ID: 92497117002 Collected: 09/24/20 10:18 Received: 09/25/20 13:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.669 ± 0.364 (0.523) C:77% T:NA	pCi/L	10/14/20 06:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.608 ± 0.461 (0.920) C:80% T:85%	pCi/L	10/15/20 14:16	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.28 ± 0.825 (1.44)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-77 **Lab ID: 92497117003** Collected: 09/24/20 14:19 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.664 ± 0.343 (0.476) C:89% T:NA	pCi/L	10/14/20 06:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0967 ± 0.397 (0.897) C:83% T:81%	pCi/L	10/15/20 14:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.761 ± 0.740 (1.37)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: FB-3 **Lab ID: 92497117004** Collected: 09/24/20 11:00 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0243 ± 0.241 (0.620) C:87% T:NA	pCi/L	10/14/20 06:27	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.506 ± 0.523 (1.09) C:78% T:73%	pCi/L	10/15/20 14:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.530 ± 0.764 (1.71)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-74 **Lab ID: 92497117005** Collected: 09/25/20 10:05 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.485 ± 0.285 (0.380) C:85% T:NA	pCi/L	10/14/20 06:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.804 ± 0.575 (1.13) C:74% T:76%	pCi/L	10/15/20 14:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.29 ± 0.860 (1.51)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-83 **Lab ID: 92497117006** Collected: 09/25/20 09:10 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0359 ± 0.141 (0.374) C:76% T:NA	pCi/L	10/14/20 06:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0284 ± 0.399 (0.932) C:74% T:81%	pCi/L	10/15/20 14:17	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.0359 ± 0.540 (1.31)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: B-88 Lab ID: 92497117007 Collected: 09/25/20 10:15 Received: 09/25/20 13:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.925 ± 0.386 (0.410) C:90% T:NA	pCi/L	10/14/20 06:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.198 ± 0.363 (0.893) C:78% T:74%	pCi/L	10/15/20 14:17	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.925 ± 0.749 (1.30)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-100 **Lab ID: 92497117008** Collected: 09/25/20 10:50 Received: 09/25/20 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.132 ± 0.213 (0.472) C:84% T:NA	pCi/L	10/14/20 06:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.667 ± 0.517 (1.02) C:77% T:67%	pCi/L	10/15/20 14:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.799 ± 0.730 (1.49)	pCi/L	10/19/20 11:01	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-56 **Lab ID: 92497117009** Collected: 09/28/20 11:14 Received: 09/28/20 14:21 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.471 ± 0.280 (0.380) C:84% T:NA	pCi/L	10/14/20 07:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.914 ± 0.481 (0.853) C:77% T:79%	pCi/L	10/15/20 14:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.39 ± 0.761 (1.23)	pCi/L	10/19/20 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: B-82 Lab ID: 92497117010 Collected: 09/28/20 10:14 Received: 09/28/20 14:21 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.157 ± 0.184 (0.362) C:89% T:NA	pCi/L	10/14/20 06:41	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.590 ± 0.432 (0.845) C:79% T:80%	pCi/L	10/15/20 14:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.747 ± 0.616 (1.21)	pCi/L	10/19/20 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

Sample: B-93 **Lab ID: 92497117011** Collected: 09/28/20 09:50 Received: 09/28/20 14:21 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.391 ± 0.271 (0.423) C:82% T:NA	pCi/L	10/14/20 06:41	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.15 ± 0.502 (0.825) C:83% T:72%	pCi/L	10/19/20 11:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.54 ± 0.773 (1.25)	pCi/L	10/20/20 08:55	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

QC Batch: 415890

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497117001

METHOD BLANK: 2010987

Matrix: Water

Associated Lab Samples: 92497117001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.214 ± 0.231 (0.446) C:86% T:NA	pCi/L	10/09/20 08:12	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

QC Batch: 417134

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497117011

METHOD BLANK: 2016817

Matrix: Water

Associated Lab Samples: 92497117011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.280 ± 0.239 (0.418) C:85% T:NA	pCi/L	10/14/20 06:41	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

QC Batch: 417135

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497117011

METHOD BLANK: 2016818

Matrix: Water

Associated Lab Samples: 92497117011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.274 ± 0.291 (0.602) C:84% T:86%	pCi/L	10/15/20 11:05	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

QC Batch: 415888

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92497117001

METHOD BLANK: 2010985

Matrix: Water

Associated Lab Samples: 92497117001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.197 ± 0.376 (0.826) C:67% T:78%	pCi/L	10/12/20 14:59	

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QUALIFIERS

Project: MCDONOUGH ASSESSMENT RADS

Pace Project No.: 92497117

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCDONOUGH ASSESSMENT RADS
Pace Project No.: 92497117

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92497117001	B-89	EPA 9315	415890		
92497117002	B-62	EPA 9315	417132		
92497117003	B-77	EPA 9315	417132		
92497117004	FB-3	EPA 9315	417132		
92497117005	B-74	EPA 9315	417132		
92497117006	B-83	EPA 9315	417132		
92497117007	B-88	EPA 9315	417132		
92497117008	B-100	EPA 9315	417132		
92497117009	B-56	EPA 9315	417132		
92497117010	B-82	EPA 9315	417132		
92497117011	B-93	EPA 9315	417134		
92497117001	B-89	EPA 9320	415888		
92497117002	B-62	EPA 9320	417133		
92497117003	B-77	EPA 9320	417133		
92497117004	FB-3	EPA 9320	417133		
92497117005	B-74	EPA 9320	417133		
92497117006	B-83	EPA 9320	417133		
92497117007	B-88	EPA 9320	417133		
92497117008	B-100	EPA 9320	417133		
92497117009	B-56	EPA 9320	417133		
92497117010	B-82	EPA 9320	417133		
92497117011	B-93	EPA 9320	417135		
92497117001	B-89	Total Radium Calculation	418331		
92497117002	B-62	Total Radium Calculation	419143		
92497117003	B-77	Total Radium Calculation	419143		
92497117004	FB-3	Total Radium Calculation	419143		
92497117005	B-74	Total Radium Calculation	419143		
92497117006	B-83	Total Radium Calculation	419143		
92497117007	B-88	Total Radium Calculation	419143		
92497117008	B-100	Total Radium Calculation	419143		
92497117009	B-56	Total Radium Calculation	419145		
92497117010	B-82	Total Radium Calculation	419145		
92497117011	B-93	Total Radium Calculation	419262		

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Sample Condition Upon Rec

WO#: 92497117

Client Name: GA Power



92497117

Courier: Fed Ex UPS USPS Client Commercial Pace Otl

Tracking #: _____

Proj. Due Date: _____
Proj. Name: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other ZIPLOC

Thermometer Used THR214 Type of Ice: Ice Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.0

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: KRW

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document issued: March 14, 2019
Page 1 of 1
Issuing Authority:

WO#: 92497117

Project #

PM: KLH1 Due Date: 10/15/20
CLIENT: GA-GA Power

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
• Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

• Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3N-250 mL Amber HNO3 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	
	1																											
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											

BRIN - Radium

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Of Out of hold, incorrect preservative, out of temp, incorrect containers.



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/8/2020
Worklist: 56442
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010987	
MB concentration:	0.214	
M/B Counting Uncertainty:	0.229	
MB MDC:	0.446	
MB Numerical Performance Indicator:	1.83	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS56442	LCSD56442
Count Date:	10/9/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.741	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.940	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.794	
Numerical Performance Indicator:	0.49	
Percent Recovery:	104.19%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92497110001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92497110001DUP	
Sample Result (pCi/L, g, F):	0.477	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.309	
Sample Duplicate Result (pCi/L, g, F):	0.448	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.340	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.121	92497110001
Duplicate RPD:	6.12%	92497110001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

LAM 10/9/2020

OUT
10/9/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 10/8/2020
Worklist: 56442
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010987	
MB concentration:	0.214	
M/B Counting Uncertainty:	0.229	
MB MDC:	0.446	
MB Numerical Performance Indicator:	1.83	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56442	LCSD56442
Count Date:	10/9/2020	10/9/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.507	0.514
Target Conc. (pCi/L, g, F):	4.741	4.677
Uncertainty (Calculated):	0.057	0.056
Result (pCi/L, g, F):	4.940	4.201
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.794	0.785
Numerical Performance Indicator:	0.49	-1.18
Percent Recovery:	104.19%	89.83%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56442	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56442	
Sample Result (pCi/L, g, F):	4.940	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.794	
Sample Duplicate Result (pCi/L, g, F):	4.201	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.785	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.297	92497110001
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	14.81%	92497110001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

LAM 10/9/2020

Out
10/9/2020



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56589
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016814	
MB concentration:	-0.098	
M/B Counting Uncertainty:	0.148	
MB MDC:	0.503	
MB Numerical Performance Indicator:	-1.30	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD56589	LCSD56589
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.736	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.957	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.812	
Numerical Performance Indicator:	0.53	
Percent Recovery:	104.66%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92497114005	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92497114005DUP	
Sample Result (pCi/L, g, F):	0.265	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.249	
Sample Duplicate Result (pCi/L, g, F):	-0.086	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.079	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	2.633	92497114005
Duplicate RPD:	390.92%	92497114005DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision. N/A LAM 10/14/2020

LAM 10/14/2020

On 10-15-20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: LAL
Date: 10/13/2020
Worklist: 56589
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016814	
MB concentration:	-0.098	
M/B Counting Uncertainty:	0.148	
MB MDC:	0.503	
MB Numerical Performance Indicator:	-1.30	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD56589	LCSD56589
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.736	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.957	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.812	
Numerical Performance Indicator:	0.53	
Percent Recovery:	104.66%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment		
Sample I.D.:	92497118006	Enter Duplicate
Duplicate Sample I.D.:	92497118006DUP	sample IDs if
Sample Result (pCi/L, g, F):	0.280	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.271	LCS/LCSD in
Sample Duplicate Result (pCi/L, g, F):	0.399	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.250	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.631	92497118006
Duplicate RPD:	34.99%	92497118006DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision. N/A UAM 10/14/2020

LAM 10/14/2020

On 10.15.20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56591
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016817	
MB concentration:	0.280	
M/B Counting Uncertainty:	0.235	
MB MDC:	0.418	
MB Numerical Performance Indicator:	2.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56591	LCSD56591
Count Date:	10/14/2020	10/14/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.512	0.510
Target Conc. (pCi/L, g, F):	4.697	4.711
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.666	4.350
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.761	0.758
Numerical Performance Indicator:	-0.08	-0.93
Percent Recovery:	99.33%	92.35%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSD (Y or N)?	Y
Sample I.D.:	LCS56591	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56591	
Sample Result (pCi/L, g, F):	4.666	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.761	
Sample Duplicate Result (pCi/L, g, F):	4.350	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.758	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.577	92496904020
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	7.29%	92496904020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

am 10/14/2020

am 10/14/2020



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56591
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016617	
MB concentration:	0.280	
M/B Counting Uncertainty:	0.235	
MB MDC:	0.418	
MB Numerical Performance Indicator:	2.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD56591	LCSD56591
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.512	
Target Conc. (pCi/L, g, F):	4.697	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.666	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.761	
Numerical Performance Indicator:	-0.08	
Percent Recovery:	99.33%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment		
Sample I.D.:	92496904020	Enter Duplicate
Duplicate Sample I.D.:	92496904020DUP	sample IDs if
Sample Result (pCi/L, g, F):	0.317	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.241	LCS/LCSD in
Sample Duplicate Result (pCi/L, g, F):	0.374	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.240	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.331	92496904020
Duplicate RPD:	16.61%	92496904020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Quinn 10/14/2020

LAM 10/14/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/6/2020
Worklist: 56440
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2010985	
MB concentration:	0.197	
M/B 2 Sigma CSU:	0.376	
MB MDC:	0.826	
MB Numerical Performance Indicator:	1.03	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56440	LCSD56440
Count Date:	10/12/2020	10/12/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.054	38.054
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.803	0.803
Target Conc. (pCi/L, g, F):	4.741	4.737
Uncertainty (Calculated):	0.232	0.232
Result (pCi/L, g, F):	3.863	4.161
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.965	1.023
Numerical Performance Indicator:	-1.73	-1.08
Percent Recovery:	81.48%	87.84%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56440	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56440	
Sample Result (pCi/L, g, F):	3.863	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.965	
Sample Duplicate Result (pCi/L, g, F):	4.161	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.023	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.416	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	7.51%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

KUB
10-13-2020

10-13-20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56590
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2018815	
MB concentration:	-0.010	
M/B 2 Sigma CSU:	0.301	
MB MDC:	0.708	
MB Numerical Performance Indicator:	-0.06	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS56590	LCSD56590
Count Date:	10/15/2020	
Spike I.D.:	20-030	
Decay Corrected Spike Concentration (pCi/mL):	38.016	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.815	
Target Conc. (pCi/L, g, F):	4.665	
Uncertainty (Calculated):	0.229	
Result (pCi/L, g, F):	3.340	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.875	
Numerical Performance Indicator:	-2.87	
Percent Recovery:	71.58%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSD (Y or N)?	N
Sample I.D.:	92497118006	
Duplicate Sample I.D.:	92497118006DUP	
Sample Result (pCi/L, g, F):	0.746	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.424	
Sample Duplicate Result (pCi/L, g, F):	0.204	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.426	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	1.767	
Duplicate RPD:	114.06%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Fail	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten signature/initials

Handwritten date: 10/16/2020



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/16/2020
Worklist: 56592
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	
MB concentration:	
M/B 2 Sigma CSU:	
MB MDC:	
MB Numerical Performance Indicator:	
MB Status vs Numerical Indicator:	
MB Status vs. MDC:	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56592	LCSD56592
Count Date:	10/19/2020	10/19/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.968	37.968
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.836
Target Conc. (pCi/L, g, F):	4.670	4.542
Uncertainty (Calculated):	0.229	0.223
Result (pCi/L, g, F):	4.645	4.409
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.050	1.018
Numerical Performance Indicator:	-0.04	-0.25
Percent Recovery:	99.48%	97.06%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56592	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56592	
Sample Result (pCi/L, g, F):	4.645	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.050	
Sample Duplicate Result (pCi/L, g, F):	4.409	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.018	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.317	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	2.46%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

10/16/2020

10-20-20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56592
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2016818	
MB concentration:	0.274	
M/B 2 Sigma CSU:	0.291	
MB MDC:	0.602	
MB Numerical Performance Indicator:	1.85	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56592	LCSD56592
Count Date:	10/15/2020	10/15/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.018	38.018
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.836
Target Conc. (pCi/L, g, F):	4.676	4.548
Uncertainty (Calculated):	0.229	0.223
Result (pCi/L, g, F):	2.226	2.963
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.629	0.764
Numerical Performance Indicator:	-7.18	-3.91
Percent Recovery:	47.60%	65.14%
Status vs Numerical Indicator:	Fail**	N/A
Status vs Recovery:	Fail Low**	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS56592	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD56592	
Sample Result (pCi/L, g, F):	2.226	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.629	
Sample Duplicate Result (pCi/L, g, F):	2.963	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.764	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.460	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	31.10%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

**Batch must be re-prepped due to LCS failure.

Handwritten initials and date: VAL 10-13-20

Handwritten date: 10/13/2020

APPENDIX A

Surface Water Laboratory Analytical Data November 2020 & February 2021

November 16, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Dear Kelley Sharpe:

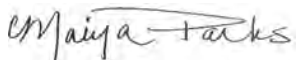
Enclosed are the analytical results for sample(s) received by the laboratory on November 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Joju Abraham, Georgia Power-CCR
Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505233

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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SAMPLE SUMMARY

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505233

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92505233001	CR+0.4	Water	11/10/20 11:40	11/10/20 17:57
92505233002	CR+0.2	Water	11/10/20 11:50	11/10/20 17:57
92505233003	Dewatering Upstream	Water	11/10/20 11:55	11/10/20 17:57
92505233004	Dewatering Downstream	Water	11/10/20 12:25	11/10/20 17:57
92505233005	CR-0.2	Water	11/10/20 12:47	11/10/20 17:57
92505233006	CR-0.5	Water	11/10/20 12:55	11/10/20 17:57
92505233007	CR-0.8	Water	11/10/20 13:15	11/10/20 17:57

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92505233001	CR+0.4	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505233002	CR+0.2	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505233003	Dewatering Upstream	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505233004	Dewatering Downstream	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505233005	CR-0.2	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505233006	CR-0.5	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505233007	CR-0.8	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	2	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505233

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
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PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: CR+0.4		Lab ID: 92505233001		Collected: 11/10/20 11:40	Received: 11/10/20 17:57	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 11:40		
pH	7.35	Std. Units		1		11/10/20 11:40		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.4	mg/L	0.20	1	11/11/20 12:44	11/15/20 15:48	7440-09-7	
Sodium	5.4	mg/L	1.0	1	11/11/20 12:44	11/11/20 19:42	7440-23-5	M1
Calcium	4.2	mg/L	1.0	1	11/11/20 12:44	11/11/20 19:42	7440-70-2	M1
Magnesium	2.0	mg/L	0.050	1	11/11/20 12:44	11/11/20 19:42	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/11/20 16:04	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 16:04	7440-48-4	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	43.0	mg/L	10.0	1		11/11/20 15:48		D6
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.3	mg/L	5.0	1		11/12/20 17:22		
Alkalinity, Total as CaCO ₃	17.3	mg/L	5.0	1		11/12/20 17:22		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	4.8	mg/L	1.0	1		11/12/20 18:09	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 18:09	16984-48-8	
Sulfate	3.0	mg/L	1.0	1		11/12/20 18:09	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: CR+0.2	Lab ID: 92505233002	Collected: 11/10/20 11:50	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 11:50		
pH	7.42	Std. Units		1		11/10/20 11:50		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	5.5	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:03	7440-23-5	
Calcium	4.1	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:03	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:03	7439-95-4	
Potassium	2.5	mg/L	0.20	1	11/11/20 12:44	11/15/20 15:53	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/11/20 16:10	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 16:10	7440-48-4	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	45.0	mg/L	10.0	1		11/11/20 15:48		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.2	mg/L	5.0	1		11/12/20 17:43		
Alkalinity, Total as CaCO ₃	20.2	mg/L	5.0	1		11/12/20 17:43		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	4.8	mg/L	1.0	1		11/12/20 18:52	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 18:52	16984-48-8	
Sulfate	3.0	mg/L	1.0	1		11/12/20 18:52	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: Dewatering Upstream		Lab ID: 92505233003	Collected: 11/10/20 11:55	Received: 11/10/20 17:57	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method: Pace Analytical Services - Charlotte						
Performed by	Client			1		11/10/20 11:55		
pH	6.90	Std. Units		1		11/10/20 11:55		
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Sodium	5.5	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:08	7440-23-5	
Calcium	4.2	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:08	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:08	7439-95-4	
Potassium	2.6	mg/L	0.20	1	11/11/20 12:44	11/15/20 15:58	7440-09-7	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/11/20 16:44	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 16:44	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	43.0	mg/L	10.0	1		11/11/20 15:48		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	20.3	mg/L	5.0	1		11/12/20 17:49		
Alkalinity, Total as CaCO ₃	20.3	mg/L	5.0	1		11/12/20 17:49		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville						
Chloride	4.9	mg/L	1.0	1		11/12/20 19:06	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 19:06	16984-48-8	
Sulfate	3.1	mg/L	1.0	1		11/12/20 19:06	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: Dewatering Downstream	Lab ID: 92505233004	Collected: 11/10/20 12:25	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 12:25		
pH	7.03	Std. Units		1		11/10/20 12:25		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	5.6	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:14	7440-23-5	
Calcium	4.3	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:14	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:14	7439-95-4	
Potassium	2.5	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:03	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/12/20 09:41	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 16:50	7440-48-4	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	38.0	mg/L	10.0	1		11/11/20 15:49		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.7	mg/L	5.0	1		11/12/20 17:54		
Alkalinity, Total as CaCO ₃	17.7	mg/L	5.0	1		11/12/20 17:54		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	4.8	mg/L	1.0	1		11/12/20 19:21	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 19:21	16984-48-8	
Sulfate	3.0	mg/L	1.0	1		11/12/20 19:21	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: CR-0.2	Lab ID: 92505233005	Collected: 11/10/20 12:47	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 12:47		
pH	7.82	Std. Units		1		11/10/20 12:47		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	5.9	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:19	7440-23-5	
Calcium	4.3	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:19	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:19	7439-95-4	
Potassium	2.6	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:09	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/11/20 16:55	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 16:55	7440-48-4	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	48.0	mg/L	10.0	1		11/11/20 15:49		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.7	mg/L	5.0	1		11/12/20 18:00		
Alkalinity, Total as CaCO ₃	20.7	mg/L	5.0	1		11/12/20 18:00		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	11.2	mg/L	1.0	1		11/12/20 19:35	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 19:35	16984-48-8	
Sulfate	3.2	mg/L	1.0	1		11/12/20 19:35	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: CR-0.5	Lab ID: 92505233006	Collected: 11/10/20 12:55	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 12:55		
pH	7.40	Std. Units		1		11/10/20 12:55		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	5.7	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:24	7440-23-5	
Calcium	4.3	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:24	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:24	7439-95-4	
Potassium	2.5	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:14	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/11/20 17:29	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 17:29	7440-48-4	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	47.0	mg/L	10.0	1		11/11/20 15:49		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.2	mg/L	5.0	1		11/12/20 18:06		
Alkalinity, Total as CaCO ₃	20.2	mg/L	5.0	1		11/12/20 18:06		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	4.9	mg/L	1.0	1		11/12/20 19:50	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 19:50	16984-48-8	
Sulfate	3.0	mg/L	1.0	1		11/12/20 19:50	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Sample: CR-0.8	Lab ID: 92505233007	Collected: 11/10/20 13:15	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 13:15		
pH	7.62	Std. Units		1		11/10/20 13:15		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	5.6	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:40	7440-23-5	
Calcium	4.4	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:40	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:40	7439-95-4	
Potassium	2.5	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:19	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.00050	1	11/11/20 12:31	11/11/20 17:35	7440-41-7	
Cobalt	ND	mg/L	0.0050	1	11/11/20 12:31	11/11/20 17:35	7440-48-4	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	50.0	mg/L	10.0	1		11/11/20 15:49		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.0	mg/L	5.0	1		11/12/20 18:22		
Alkalinity, Total as CaCO ₃	20.0	mg/L	5.0	1		11/12/20 18:22		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	5.1	mg/L	1.0	1		11/12/20 20:33	16887-00-6	
Fluoride	ND	mg/L	0.10	1		11/12/20 20:33	16984-48-8	
Sulfate	3.2	mg/L	1.0	1		11/12/20 20:33	14808-79-8	

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

QC Batch: 579547 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

METHOD BLANK: 3065899 Matrix: Water
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	11/11/20 19:22	
Magnesium	mg/L	ND	0.050	11/11/20 19:22	
Potassium	mg/L	ND	0.20	11/11/20 19:22	
Sodium	mg/L	ND	1.0	11/11/20 19:22	

LABORATORY CONTROL SAMPLE: 3065900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	105	80-120	
Magnesium	mg/L	1	1.1	106	80-120	
Potassium	mg/L	1	0.98	98	80-120	
Sodium	mg/L	1	1.2	119	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3065901 3065902

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505233001 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	4.2	1	1	5.4	5.5	120	129	75-125	2	20 M1
Magnesium	mg/L	2.0	1	1	3.1	3.1	111	110	75-125	0	20
Potassium	mg/L	2.4	1	1	3.9	3.7	143	125	75-125	5	20
Sodium	mg/L	5.4	1	1	6.6	6.8	120	133	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

QC Batch: 579551 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

METHOD BLANK: 3065931 Matrix: Water
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Beryllium	mg/L	ND	0.00050	11/11/20 15:52	
Cobalt	mg/L	ND	0.0050	11/11/20 15:52	

LABORATORY CONTROL SAMPLE: 3065932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Beryllium	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3065933 3065934

Parameter	Units	92505233002		3065934		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Beryllium	mg/L	ND	0.1	0.1	0.10	0.095	100	94	75-125	5	20
Cobalt	mg/L	ND	0.1	0.1	0.098	0.098	98	97	75-125	1	20

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505233

QC Batch:	579634	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

METHOD BLANK: 3066400 Matrix: Water

Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/11/20 15:42	

LABORATORY CONTROL SAMPLE: 3066401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	397	99	84-108	

SAMPLE DUPLICATE: 3066402

Parameter	Units	92505233001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	43.0	49.0	13	10	D6

SAMPLE DUPLICATE: 3066403

Parameter	Units	92505230001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	684	670	2	10	

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

QC Batch: 580018 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

METHOD BLANK: 3068228 Matrix: Water
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	11/12/20 16:26	
Alkalinity, Bicarbonate (CaCO ₃)	mg/L	ND	5.0	11/12/20 16:26	

LABORATORY CONTROL SAMPLE: 3068229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	53.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068230 3068231

Parameter	Units	92505233001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	17.3	50	50	70.0	70.7	105	107	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068232 3068233

Parameter	Units	92504167001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	452	50	50	482	482	61	60	80-120	0	25 M1	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

QC Batch: 579993 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

METHOD BLANK: 3068011 Matrix: Water
Associated Lab Samples: 92505233001, 92505233002, 92505233003, 92505233004, 92505233005, 92505233006, 92505233007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	11/12/20 17:40	
Fluoride	mg/L	ND	0.10	11/12/20 17:40	
Sulfate	mg/L	ND	1.0	11/12/20 17:40	

LABORATORY CONTROL SAMPLE: 3068012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.5	95	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	50	47.9	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068013 3068014

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505233001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	4.8	50	50	56.6	55.1	103	100	90-110	3	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.5	103	99	90-110	3	10		
Sulfate	mg/L	3.0	50	50	55.0	52.8	104	100	90-110	4	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068378 3068379

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505059003	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	18.2	50	50	68.7	68.7	101	101	90-110	0	10		
Fluoride	mg/L	0.23	2.5	2.5	3.0	2.9	111	107	90-110	3	10	M1	
Sulfate	mg/L	426	50	50	497	511	142	170	90-110	3	10	M6	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505233

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505233

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92505233001	CR+0.4				
92505233002	CR+0.2				
92505233003	Dewatering Upstream				
92505233004	Dewatering Downstream				
92505233005	CR-0.2				
92505233006	CR-0.5				
92505233007	CR-0.8				
92505233001	CR+0.4	EPA 3010A	579547	EPA 6010D	579657
92505233002	CR+0.2	EPA 3010A	579547	EPA 6010D	579657
92505233003	Dewatering Upstream	EPA 3010A	579547	EPA 6010D	579657
92505233004	Dewatering Downstream	EPA 3010A	579547	EPA 6010D	579657
92505233005	CR-0.2	EPA 3010A	579547	EPA 6010D	579657
92505233006	CR-0.5	EPA 3010A	579547	EPA 6010D	579657
92505233007	CR-0.8	EPA 3010A	579547	EPA 6010D	579657
92505233001	CR+0.4	EPA 3005A	579551	EPA 6020B	579656
92505233002	CR+0.2	EPA 3005A	579551	EPA 6020B	579656
92505233003	Dewatering Upstream	EPA 3005A	579551	EPA 6020B	579656
92505233004	Dewatering Downstream	EPA 3005A	579551	EPA 6020B	579656
92505233005	CR-0.2	EPA 3005A	579551	EPA 6020B	579656
92505233006	CR-0.5	EPA 3005A	579551	EPA 6020B	579656
92505233007	CR-0.8	EPA 3005A	579551	EPA 6020B	579656
92505233001	CR+0.4	SM 2450C-2011	579634		
92505233002	CR+0.2	SM 2450C-2011	579634		
92505233003	Dewatering Upstream	SM 2450C-2011	579634		
92505233004	Dewatering Downstream	SM 2450C-2011	579634		
92505233005	CR-0.2	SM 2450C-2011	579634		
92505233006	CR-0.5	SM 2450C-2011	579634		
92505233007	CR-0.8	SM 2450C-2011	579634		
92505233001	CR+0.4	SM 2320B-2011	580018		
92505233002	CR+0.2	SM 2320B-2011	580018		
92505233003	Dewatering Upstream	SM 2320B-2011	580018		
92505233004	Dewatering Downstream	SM 2320B-2011	580018		
92505233005	CR-0.2	SM 2320B-2011	580018		
92505233006	CR-0.5	SM 2320B-2011	580018		
92505233007	CR-0.8	SM 2320B-2011	580018		
92505233001	CR+0.4	EPA 300.0 Rev 2.1 1993	579993		
92505233002	CR+0.2	EPA 300.0 Rev 2.1 1993	579993		
92505233003	Dewatering Upstream	EPA 300.0 Rev 2.1 1993	579993		
92505233004	Dewatering Downstream	EPA 300.0 Rev 2.1 1993	579993		
92505233005	CR-0.2	EPA 300.0 Rev 2.1 1993	579993		
92505233006	CR-0.5	EPA 300.0 Rev 2.1 1993	579993		
92505233007	CR-0.8	EPA 300.0 Rev 2.1 1993	579993		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)

Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
Page 1 of 2

Issuing Authority:
Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:
Arcadis Atlanta

Project #: **WO#: 92505233**

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

PM: MP Due Date: 11/13/20
CLIENT: GA-ArcadAt1

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *11/11/20 [Signature]*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: IR Gun ID: *2114* Type of Ice: Wet Blue None

Cooler Temp: *2.1°C* Correction Factor: Add/Subtract (°C) *0*

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *2.1°C*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.
-Includes Date/Time/ID/Analysis Matrix: <i>W</i>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

November 16, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

Dear Kelley Sharpe:

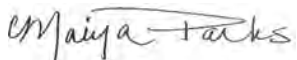
Enclosed are the analytical results for sample(s) received by the laboratory on November 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Joju Abraham, Georgia Power-CCR
Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505235

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92505235001	UT01_US	Water	11/10/20 14:05	11/10/20 17:57
92505235002	UT02	Water	11/10/20 14:20	11/10/20 17:57
92505235003	UT01_DS	Water	11/10/20 14:35	11/10/20 17:57

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505235

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92505235001	UT01_US	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	1	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505235002	UT02	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	1	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92505235003	UT01_DS	EPA 6010D	DRB, KH	4	PASI-GA
		EPA 6020B	CW1	1	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	KDF1	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505235

Sample: UT01_US	Lab ID: 92505235001	Collected: 11/10/20 14:05	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 14:05		
pH	7.30	Std. Units		1		11/10/20 14:05		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Potassium	3.6	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:35	7440-09-7	
Sodium	14.2	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:45	7440-23-5	
Calcium	21.3	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:45	7440-70-2	
Magnesium	4.2	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:45	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Molybdenum	ND	mg/L	0.010	1	11/11/20 12:31	11/11/20 17:41	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	132	mg/L	10.0	1		11/11/20 15:49		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	68.8	mg/L	5.0	1		11/12/20 18:27		
Alkalinity, Total as CaCO ₃	68.8	mg/L	5.0	1		11/12/20 18:27		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	12.0	mg/L	1.0	1		11/12/20 20:48	16887-00-6	
Fluoride	0.18	mg/L	0.10	1		11/12/20 20:48	16984-48-8	
Sulfate	16.1	mg/L	1.0	1		11/12/20 20:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

Sample: UT02		Lab ID: 92505235002		Collected: 11/10/20 14:20	Received: 11/10/20 17:57	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 14:20		
pH	7.31	Std. Units		1		11/10/20 14:20		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	14.4	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:50	7440-23-5	
Calcium	21.9	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:50	7440-70-2	
Magnesium	4.4	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:50	7439-95-4	
Potassium	3.8	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:40	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Molybdenum	ND	mg/L	0.010	1	11/11/20 12:31	11/11/20 17:46	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	127	mg/L	10.0	1		11/11/20 15:49		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	67.9	mg/L	5.0	1		11/12/20 18:34		
Alkalinity, Total as CaCO ₃	67.9	mg/L	5.0	1		11/12/20 18:34		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	11.7	mg/L	1.0	1		11/12/20 21:02	16887-00-6	
Fluoride	0.18	mg/L	0.10	1		11/12/20 21:02	16984-48-8	
Sulfate	16.5	mg/L	1.0	1		11/12/20 21:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

Sample: UT01_DS	Lab ID: 92505235003	Collected: 11/10/20 14:35	Received: 11/10/20 17:57	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Field Data								
Analytical Method: Pace Analytical Services - Charlotte								
Performed by	Client			1		11/10/20 14:35		
pH	7.18	Std. Units		1		11/10/20 14:35		
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Sodium	13.9	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:55	7440-23-5	
Calcium	22.3	mg/L	1.0	1	11/11/20 12:44	11/11/20 20:55	7440-70-2	
Magnesium	4.8	mg/L	0.050	1	11/11/20 12:44	11/11/20 20:55	7439-95-4	
Potassium	3.9	mg/L	0.20	1	11/11/20 12:44	11/15/20 16:45	7440-09-7	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Molybdenum	ND	mg/L	0.010	1	11/11/20 12:31	11/11/20 17:52	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	145	mg/L	10.0	1		11/11/20 15:50		
2320B Alkalinity								
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	68.8	mg/L	5.0	1		11/12/20 18:42		
Alkalinity, Total as CaCO ₃	68.8	mg/L	5.0	1		11/12/20 18:42		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	11.5	mg/L	1.0	1		11/12/20 21:17	16887-00-6	
Fluoride	0.18	mg/L	0.10	1		11/12/20 21:17	16984-48-8	
Sulfate	20.5	mg/L	1.0	1		11/12/20 21:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

QC Batch: 579547 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505235001, 92505235002, 92505235003

METHOD BLANK: 3065899 Matrix: Water

Associated Lab Samples: 92505235001, 92505235002, 92505235003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	11/11/20 19:22	
Magnesium	mg/L	ND	0.050	11/11/20 19:22	
Potassium	mg/L	ND	0.20	11/11/20 19:22	
Sodium	mg/L	ND	1.0	11/11/20 19:22	

LABORATORY CONTROL SAMPLE: 3065900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	105	80-120	
Magnesium	mg/L	1	1.1	106	80-120	
Potassium	mg/L	1	0.98	98	80-120	
Sodium	mg/L	1	1.2	119	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3065901 3065902

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505233001 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	4.2	1	1	5.4	5.5	120	129	75-125	2	20 M1
Magnesium	mg/L	2.0	1	1	3.1	3.1	111	110	75-125	0	20
Potassium	mg/L	2.4	1	1	3.9	3.7	143	125	75-125	5	20
Sodium	mg/L	5.4	1	1	6.6	6.8	120	133	75-125	2	20 M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505235

QC Batch:	579551	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505235001, 92505235002, 92505235003

METHOD BLANK: 3065931 Matrix: Water

Associated Lab Samples: 92505235001, 92505235002, 92505235003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Molybdenum	mg/L	ND	0.010	11/11/20 15:52	

LABORATORY CONTROL SAMPLE: 3065932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3065933 3065934

Parameter	Units	3065933		3065934		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Molybdenum	mg/L	ND	0.1	0.10	0.10	101	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

QC Batch: 579634 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505235001, 92505235002, 92505235003

METHOD BLANK: 3066400 Matrix: Water
Associated Lab Samples: 92505235001, 92505235002, 92505235003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/11/20 15:42	

LABORATORY CONTROL SAMPLE: 3066401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	397	99	84-108	

SAMPLE DUPLICATE: 3066402

Parameter	Units	92505233001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	43.0	49.0	13	10	D6

SAMPLE DUPLICATE: 3066403

Parameter	Units	92505230001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	684	670	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

QC Batch: 580018 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92505235001, 92505235002, 92505235003

METHOD BLANK: 3068228 Matrix: Water

Associated Lab Samples: 92505235001, 92505235002, 92505235003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	11/12/20 16:26	
Alkalinity, Bicarbonate (CaCO ₃)	mg/L	ND	5.0	11/12/20 16:26	

LABORATORY CONTROL SAMPLE: 3068229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	53.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068230 3068231

Parameter	Units	92505233001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	17.3	50	50	70.0	70.7	105	107	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068232 3068233

Parameter	Units	92504167001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	452	50	50	482	482	61	60	80-120	0	25 M1	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

QC Batch: 579993 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92505235001, 92505235002, 92505235003

METHOD BLANK: 3068011 Matrix: Water
Associated Lab Samples: 92505235001, 92505235002, 92505235003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	11/12/20 17:40	
Fluoride	mg/L	ND	0.10	11/12/20 17:40	
Sulfate	mg/L	ND	1.0	11/12/20 17:40	

LABORATORY CONTROL SAMPLE: 3068012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.5	95	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	50	47.9	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068013 3068014

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505233001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	4.8	50	50	56.6	55.1	103	100	90-110	3	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.5	103	99	90-110	3	10		
Sulfate	mg/L	3.0	50	50	55.0	52.8	104	100	90-110	4	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068378 3068379

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505059003	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	18.2	50	50	68.7	68.7	101	101	90-110	0	10		
Fluoride	mg/L	0.23	2.5	2.5	3.0	2.9	111	107	90-110	3	10 M1		
Sulfate	mg/L	426	50	50	497	511	142	170	90-110	3	10 M6		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92505235

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92505235

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92505235001	UT01_US				
92505235002	UT02				
92505235003	UT01_DS				
92505235001	UT01_US	EPA 3010A	579547	EPA 6010D	579657
92505235002	UT02	EPA 3010A	579547	EPA 6010D	579657
92505235003	UT01_DS	EPA 3010A	579547	EPA 6010D	579657
92505235001	UT01_US	EPA 3005A	579551	EPA 6020B	579656
92505235002	UT02	EPA 3005A	579551	EPA 6020B	579656
92505235003	UT01_DS	EPA 3005A	579551	EPA 6020B	579656
92505235001	UT01_US	SM 2450C-2011	579634		
92505235002	UT02	SM 2450C-2011	579634		
92505235003	UT01_DS	SM 2450C-2011	579634		
92505235001	UT01_US	SM 2320B-2011	580018		
92505235002	UT02	SM 2320B-2011	580018		
92505235003	UT01_DS	SM 2320B-2011	580018		
92505235001	UT01_US	EPA 300.0 Rev 2.1 1993	579993		
92505235002	UT02	EPA 300.0 Rev 2.1 1993	579993		
92505235003	UT01_DS	EPA 300.0 Rev 2.1 1993	579993		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
 Upon Receipt

Client Name:
Arcado's

Project #: **WO# : 92505235**
 PM: MP Due Date: 11/13/20
 CLIENT: GA-ArcadAtI

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *11/11/2020*

Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: IR Gun ID: *214* Type of Ice: Wet Blue None

Biological Tissue Frozen?
 Yes No N/A

Cooler Temp: *2.1°C* Correction Factor: Add/Subtract (°C) *0*

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *2.1°C*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <i>W</i>	9.
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY Field Data Required? Yes No

Lot ID of split containers: _____

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

February 10, 2021

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Dear Kelley Sharpe:

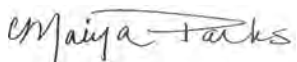
Enclosed are the analytical results for sample(s) received by the laboratory on February 03, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Joju Abraham, Georgia Power-CCR
Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92519959001	UT01_US	Water	02/02/21 15:00	02/03/21 08:50
92519959002	UT02	Water	02/02/21 14:40	02/03/21 08:50
92519959003	UT01_DS	Water	02/02/21 14:45	02/03/21 08:50
92519959004	UT03	Water	02/02/21 14:30	02/03/21 08:50

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92519959001	UT01_US	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519959002	UT02	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519959003	UT01_DS	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519959004	UT03	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Sample: UT01_US		Lab ID: 92519959001	Collected: 02/02/21 15:00	Received: 02/03/21 08:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Potassium	2.9	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:18	7440-09-7	
Sodium	12.7	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:18	7440-23-5	
Calcium	17.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:18	7440-70-2	
Magnesium	3.3	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:18	7439-95-4	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:38	7440-38-2	
Boron	0.046	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:38	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:38	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	97.0	mg/L	10.0	1		02/04/21 12:09		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	53.5	mg/L	5.0	1		02/05/21 23:42		
Alkalinity, Total as CaCO ₃	53.5	mg/L	5.0	1		02/05/21 23:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville						
Chloride	10.7	mg/L	1.0	1		02/05/21 11:50	16887-00-6	
Fluoride	0.22	mg/L	0.10	1		02/05/21 11:50	16984-48-8	
Sulfate	14.5	mg/L	1.0	1		02/05/21 11:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Sample: UT02	Lab ID: 92519959002	Collected: 02/02/21 14:40	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	3.0	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:22	7440-09-7	
Sodium	12.7	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:22	7440-23-5	
Calcium	17.4	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:22	7440-70-2	
Magnesium	3.3	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:22	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:43	7440-38-2	
Boron	0.063	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:43	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:43	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	99.0	mg/L	10.0	1		02/04/21 12:09		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	54.7	mg/L	5.0	1		02/09/21 13:52		
Alkalinity, Total as CaCO ₃	54.7	mg/L	5.0	1		02/09/21 13:52		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	10.4	mg/L	1.0	1		02/05/21 12:04	16887-00-6	
Fluoride	0.17	mg/L	0.10	1		02/05/21 12:04	16984-48-8	
Sulfate	15.5	mg/L	1.0	1		02/05/21 12:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Sample: UT01_DS	Lab ID: 92519959003	Collected: 02/02/21 14:45	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.9	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:27	7440-09-7	
Sodium	12.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:27	7440-23-5	
Calcium	17.4	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:27	7440-70-2	
Magnesium	3.6	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:27	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:49	7440-38-2	
Boron	0.11	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:49	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:49	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	100	mg/L	10.0	1		02/04/21 12:10		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	55.1	mg/L	5.0	1		02/09/21 14:00		
Alkalinity, Total as CaCO ₃	55.1	mg/L	5.0	1		02/09/21 14:00		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	9.9	mg/L	1.0	1		02/05/21 12:19	16887-00-6	
Fluoride	0.17	mg/L	0.10	1		02/05/21 12:19	16984-48-8	
Sulfate	16.5	mg/L	1.0	1		02/05/21 12:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Sample: UT03	Lab ID: 92519959004	Collected: 02/02/21 14:30	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.9	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:32	7440-09-7	
Sodium	12.6	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:32	7440-23-5	
Calcium	17.3	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:32	7440-70-2	
Magnesium	3.4	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:32	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 18:06	7440-38-2	
Boron	0.069	mg/L	0.040	1	02/04/21 10:04	02/07/21 18:06	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 18:06	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	98.0	mg/L	10.0	1		02/04/21 12:10		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	54.3	mg/L	5.0	1		02/09/21 14:08		
Alkalinity, Total as CaCO ₃	54.3	mg/L	5.0	1		02/09/21 14:08		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	10.2	mg/L	1.0	1		02/05/21 13:31	16887-00-6	
Fluoride	0.17	mg/L	0.10	1		02/05/21 13:31	16984-48-8	
Sulfate	15.4	mg/L	1.0	1		02/05/21 13:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597431 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3150491 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	02/05/21 18:05	
Magnesium	mg/L	ND	0.050	02/05/21 18:05	
Potassium	mg/L	ND	0.20	02/05/21 18:05	
Sodium	mg/L	ND	1.0	02/05/21 18:05	

LABORATORY CONTROL SAMPLE: 3150492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	0.95	95	80-120	
Potassium	mg/L	1	1.1	115	80-120	
Sodium	mg/L	1	1.1	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150493 3150494

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519942001 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	5.3	1	1	6.2	6.3	92	103	75-125	2	20
Magnesium	mg/L	2.1	1	1	3.0	3.1	95	97	75-125	1	20
Potassium	mg/L	2.8	1	1	3.9	3.9	107	109	75-125	0	20
Sodium	mg/L	7.0	1	1	8.0	8.1	99	112	75-125	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597433 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3150562 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	02/07/21 14:46	
Boron	mg/L	ND	0.040	02/07/21 14:46	
Molybdenum	mg/L	ND	0.010	02/07/21 14:46	

LABORATORY CONTROL SAMPLE: 3150563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	100	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150564 3150565

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519266022 Result	Spike Conc.	Spike Conc.	Result								
Arsenic	mg/L	1.4J ug/L	0.1	0.1	0.10	0.10	101	100	75-125	1	20		
Boron	mg/L	587 ug/L	1	1	1.6	1.5	97	96	75-125	1	20		
Molybdenum	mg/L	14.0 ug/L	0.1	0.1	0.12	0.12	103	101	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597549 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3150931 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	02/04/21 12:04	

LABORATORY CONTROL SAMPLE: 3150932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	387	97	84-108	

SAMPLE DUPLICATE: 3150933

Parameter	Units	92519931002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	45.0	43.0	5	10	

SAMPLE DUPLICATE: 3150934

Parameter	Units	92519942006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	31.0	33.0	6	10	

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 598016 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92519959001

METHOD BLANK: 3153367 Matrix: Water
Associated Lab Samples: 92519959001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	02/05/21 20:00	
Alkalinity, Bicarbonate (CaCO ₃)	mg/L	ND	5.0	02/05/21 20:00	

LABORATORY CONTROL SAMPLE: 3153368

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153369 3153370

Parameter	Units	92518671027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	160	50	50	207	213	95	107	80-120	3	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153371 3153372

Parameter	Units	92519484005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	21.3	50	50	73.0	73.4	103	104	80-120	0	25	

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 598355 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92519959002, 92519959003, 92519959004

METHOD BLANK: 3154778 Matrix: Water
Associated Lab Samples: 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	02/09/21 13:16	
Alkalinity, Bicarbonate (CaCO3)	mg/L	ND	5.0	02/09/21 13:16	

LABORATORY CONTROL SAMPLE: 3154779

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.7	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3154780 3154781

Parameter	Units	92518942011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	23.9	50	50	70.3	70.8	93	94	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3154782 3154783

Parameter	Units	92518942012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	35.3	50	50	85.2	85.5	100	100	80-120	0	25	

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597589 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3151020 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	02/05/21 08:05	
Fluoride	mg/L	ND	0.10	02/05/21 08:05	
Sulfate	mg/L	ND	1.0	02/05/21 08:05	

LABORATORY CONTROL SAMPLE: 3151021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.2	94	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.6	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151022 3151023

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519942001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	6.3	50	50	52.7	53.2	93	94	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	93	95	90-110	2	10		
Sulfate	mg/L	4.5	50	50	51.7	51.9	94	95	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151024 3151025

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519959003 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	9.9	50	50	57.4	57.2	95	95	90-110	0	10		
Fluoride	mg/L	0.17	2.5	2.5	2.5	2.5	94	94	90-110	0	10		
Sulfate	mg/L	16.5	50	50	64.4	64.3	96	96	90-110	0	10		

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QUALIFIERS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92519959001	UT01_US	EPA 3010A	597431	EPA 6010D	597695
92519959002	UT02	EPA 3010A	597431	EPA 6010D	597695
92519959003	UT01_DS	EPA 3010A	597431	EPA 6010D	597695
92519959004	UT03	EPA 3010A	597431	EPA 6010D	597695
92519959001	UT01_US	EPA 3005A	597433	EPA 6020B	597742
92519959002	UT02	EPA 3005A	597433	EPA 6020B	597742
92519959003	UT01_DS	EPA 3005A	597433	EPA 6020B	597742
92519959004	UT03	EPA 3005A	597433	EPA 6020B	597742
92519959001	UT01_US	SM 2450C-2011	597549		
92519959002	UT02	SM 2450C-2011	597549		
92519959003	UT01_DS	SM 2450C-2011	597549		
92519959004	UT03	SM 2450C-2011	597549		
92519959001	UT01_US	SM 2320B-2011	598016		
92519959002	UT02	SM 2320B-2011	598355		
92519959003	UT01_DS	SM 2320B-2011	598355		
92519959004	UT03	SM 2320B-2011	598355		
92519959001	UT01_US	EPA 300.0 Rev 2.1 1993	597589		
92519959002	UT02	EPA 300.0 Rev 2.1 1993	597589		
92519959003	UT01_DS	EPA 300.0 Rev 2.1 1993	597589		
92519959004	UT03	EPA 300.0 Rev 2.1 1993	597589		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

Arcadis - Atlanta

Project

WO#: 92519959

PM: MP

Due Date: 02/08/21

CLIENT: GA-ArcadAtl

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2/3/21 KRW

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: THR230

Type of Ice:

Wet Blue None

Cooler Temp:

1.9

Correction Factor:

Add/Subtract (°C)

0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C):

1.9

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>7 Day JAT</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix:	<u>WT</u>	
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____

Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

February 10, 2021

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Dear Kelley Sharpe:

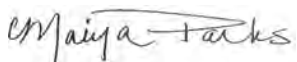
Enclosed are the analytical results for sample(s) received by the laboratory on February 03, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Joju Abraham, Georgia Power-CCR
Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

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SAMPLE SUMMARY

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92519942001	CR+0.4	Water	02/02/21 13:44	02/03/21 08:50
92519942002	CR+0.2	Water	02/02/21 13:51	02/03/21 08:50
92519942003	DW_US	Water	02/02/21 14:12	02/03/21 08:50
92519942004	DW_DS	Water	02/02/21 14:08	02/03/21 08:50
92519942005	CR-0.2	Water	02/02/21 14:21	02/03/21 08:50
92519942006	CR-0.5	Water	02/02/21 14:26	02/03/21 08:50
92519942007	CR-0.8	Water	02/02/21 14:30	02/03/21 08:50
92519942008	CR-0.1	Water	02/02/21 14:00	02/03/21 08:50

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92519942001	CR+0.4	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942002	CR+0.2	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942003	DW_US	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942004	DW_DS	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942005	CR-0.2	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942006	CR-0.5	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942007	CR-0.8	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942008	CR-0.1	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: CR+0.4 Lab ID: 92519942001 Collected: 02/02/21 13:44 Received: 02/03/21 08:50 Matrix: Water								
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:15	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:15	7440-23-5	
Calcium	5.3	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:15	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:15	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:40	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 16:40	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 16:40	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:40	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 16:40	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	27.0	mg/L	10.0	1		02/04/21 12:06		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.5	mg/L	5.0	1		02/05/21 22:32		
Alkalinity, Total as CaCO ₃	20.5	mg/L	5.0	1		02/05/21 22:32		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.3	mg/L	1.0	1		02/05/21 08:34	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 08:34	16984-48-8	
Sulfate	4.5	mg/L	1.0	1		02/05/21 08:34	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: CR+0.2 Lab ID: 92519942002 Collected: 02/02/21 13:51 Received: 02/03/21 08:50 Matrix: Water								
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.7	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:34	7440-09-7	
Sodium	6.8	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:34	7440-23-5	
Calcium	5.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:34	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:34	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:57	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 16:57	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 16:57	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:57	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 16:57	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	41.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.4	mg/L	5.0	1		02/05/21 22:39		
Alkalinity, Total as CaCO ₃	20.4	mg/L	5.0	1		02/05/21 22:39		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.2	mg/L	1.0	1		02/05/21 09:40	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 09:40	16984-48-8	
Sulfate	4.4	mg/L	1.0	1		02/05/21 09:40	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Sample: DW_US	Lab ID: 92519942003	Collected: 02/02/21 14:12	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.7	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:39	7440-09-7	
Sodium	6.8	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:39	7440-23-5	
Calcium	4.9	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:39	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:39	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:03	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:03	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:03	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:03	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:03	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	29.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.1	mg/L	5.0	1		02/05/21 22:47		
Alkalinity, Total as CaCO ₃	20.1	mg/L	5.0	1		02/05/21 22:47		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.1	mg/L	1.0	1		02/05/21 09:54	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 09:54	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 09:54	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Sample: DW_DS	Lab ID: 92519942004	Collected: 02/02/21 14:08	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.7	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:44	7440-09-7	
Sodium	6.9	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:44	7440-23-5	
Calcium	5.1	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:44	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:44	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:09	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:09	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:09	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:09	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:09	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	30.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	16.7	mg/L	5.0	1		02/05/21 23:01		
Alkalinity, Total as CaCO ₃	16.7	mg/L	5.0	1		02/05/21 23:01		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.1	mg/L	1.0	1		02/05/21 10:38	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 10:38	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 10:38	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.2	Lab ID: 92519942005	Collected: 02/02/21 14:21	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:58	7440-09-7	
Sodium	6.8	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:58	7440-23-5	
Calcium	5.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:58	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:58	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:15	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:15	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:15	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:15	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:15	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	38.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.2	mg/L	5.0	1		02/05/21 23:10		
Alkalinity, Total as CaCO ₃	17.2	mg/L	5.0	1		02/05/21 23:10		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.2	mg/L	1.0	1		02/05/21 10:52	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 10:52	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 10:52	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.5	Lab ID: 92519942006	Collected: 02/02/21 14:26	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:03	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:03	7440-23-5	
Calcium	5.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:03	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:03	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:20	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:20	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:20	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:20	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:20	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	31.0	mg/L	10.0	1		02/04/21 12:08		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.0	mg/L	5.0	1		02/05/21 23:19		
Alkalinity, Total as CaCO ₃	17.0	mg/L	5.0	1		02/05/21 23:19		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.2	mg/L	1.0	1		02/05/21 11:06	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 11:06	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 11:06	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.8	Lab ID: 92519942007	Collected: 02/02/21 14:30	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:08	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:08	7440-23-5	
Calcium	4.9	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:08	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:08	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:26	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:26	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:26	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:26	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:26	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	30.0	mg/L	10.0	1		02/04/21 12:08		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.0	mg/L	5.0	1		02/05/21 23:27		
Alkalinity, Total as CaCO ₃	17.0	mg/L	5.0	1		02/05/21 23:27		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.4	mg/L	1.0	1		02/05/21 11:21	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 11:21	16984-48-8	
Sulfate	4.5	mg/L	1.0	1		02/05/21 11:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.1	Lab ID: 92519942008	Collected: 02/02/21 14:00	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:13	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:13	7440-23-5	
Calcium	5.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:13	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:13	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:32	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:32	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:32	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:32	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:32	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	25.0	mg/L	10.0	1		02/04/21 12:09		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.7	mg/L	5.0	1		02/05/21 23:34		
Alkalinity, Total as CaCO ₃	20.7	mg/L	5.0	1		02/05/21 23:34		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.6	mg/L	1.0	1		02/05/21 11:35	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 11:35	16984-48-8	
Sulfate	4.8	mg/L	1.0	1		02/05/21 11:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

QC Batch: 597431 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3150491 Matrix: Water
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	02/05/21 18:05	
Magnesium	mg/L	ND	0.050	02/05/21 18:05	
Potassium	mg/L	ND	0.20	02/05/21 18:05	
Sodium	mg/L	ND	1.0	02/05/21 18:05	

LABORATORY CONTROL SAMPLE: 3150492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	0.95	95	80-120	
Potassium	mg/L	1	1.1	115	80-120	
Sodium	mg/L	1	1.1	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150493 3150494

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92519942001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Calcium	mg/L	5.3	1	1	6.2	6.3	92	103	75-125	2	20		
Magnesium	mg/L	2.1	1	1	3.0	3.1	95	97	75-125	1	20		
Potassium	mg/L	2.8	1	1	3.9	3.9	107	109	75-125	0	20		
Sodium	mg/L	7.0	1	1	8.0	8.1	99	112	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

QC Batch:	597433	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3150562 Matrix: Water

Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	02/07/21 14:46	
Beryllium	mg/L	ND	0.00050	02/07/21 14:46	
Boron	mg/L	ND	0.040	02/07/21 14:46	
Cobalt	mg/L	ND	0.0050	02/07/21 14:46	
Molybdenum	mg/L	ND	0.010	02/07/21 14:46	

LABORATORY CONTROL SAMPLE: 3150563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	100	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150564 3150565

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519266022	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	1.4J ug/L	0.1	0.1	0.10	0.10	101	100	75-125	1	20
Beryllium	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	3	20
Boron	mg/L	587 ug/L	1	1	1.6	1.5	97	96	75-125	1	20
Cobalt	mg/L	1.4J ug/L	0.1	0.1	0.10	0.096	99	95	75-125	5	20
Molybdenum	mg/L	14.0 ug/L	0.1	0.1	0.12	0.12	103	101	75-125	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

QC Batch: 597549 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3150931 Matrix: Water
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	02/04/21 12:04	

LABORATORY CONTROL SAMPLE: 3150932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	387	97	84-108	

SAMPLE DUPLICATE: 3150933

Parameter	Units	92519931002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	45.0	43.0	5	10	

SAMPLE DUPLICATE: 3150934

Parameter	Units	92519942006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	31.0	33.0	6	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

QC Batch: 598016 Analysis Method: SM 2320B-2011
 QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3153367 Matrix: Water
 Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	02/05/21 20:00	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	02/05/21 20:00	

LABORATORY CONTROL SAMPLE: 3153368

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153369 3153370

Parameter	Units	92518671027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	160	50	50	207	213	95	107	80-120	3	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153371 3153372

Parameter	Units	92519484005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	21.3	50	50	73.0	73.4	103	104	80-120	0	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

QC Batch:	597589	Analysis Method:	EPA 300.0 Rev 2.1 1993
QC Batch Method:	EPA 300.0 Rev 2.1 1993	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008		

METHOD BLANK:	3151020	Matrix:	Water
Associated Lab Samples:	92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	02/05/21 08:05	
Fluoride	mg/L	ND	0.10	02/05/21 08:05	
Sulfate	mg/L	ND	1.0	02/05/21 08:05	

LABORATORY CONTROL SAMPLE: 3151021						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.2	94	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.6	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151022												3151023	
Parameter	Units	92519942001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Chloride	mg/L	6.3	50	50	52.7	53.2	93	94	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	93	95	90-110	2	10		
Sulfate	mg/L	4.5	50	50	51.7	51.9	94	95	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151024												3151025	
Parameter	Units	92519959003 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Chloride	mg/L	9.9	50	50	57.4	57.2	95	95	90-110	0	10		
Fluoride	mg/L	0.17	2.5	2.5	2.5	2.5	94	94	90-110	0	10		
Sulfate	mg/L	16.5	50	50	64.4	64.3	96	96	90-110	0	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92519942001	CR+0.4	EPA 3010A	597431	EPA 6010D	597695
92519942002	CR+0.2	EPA 3010A	597431	EPA 6010D	597695
92519942003	DW_US	EPA 3010A	597431	EPA 6010D	597695
92519942004	DW_DS	EPA 3010A	597431	EPA 6010D	597695
92519942005	CR-0.2	EPA 3010A	597431	EPA 6010D	597695
92519942006	CR-0.5	EPA 3010A	597431	EPA 6010D	597695
92519942007	CR-0.8	EPA 3010A	597431	EPA 6010D	597695
92519942008	CR-0.1	EPA 3010A	597431	EPA 6010D	597695
92519942001	CR+0.4	EPA 3005A	597433	EPA 6020B	597742
92519942002	CR+0.2	EPA 3005A	597433	EPA 6020B	597742
92519942003	DW_US	EPA 3005A	597433	EPA 6020B	597742
92519942004	DW_DS	EPA 3005A	597433	EPA 6020B	597742
92519942005	CR-0.2	EPA 3005A	597433	EPA 6020B	597742
92519942006	CR-0.5	EPA 3005A	597433	EPA 6020B	597742
92519942007	CR-0.8	EPA 3005A	597433	EPA 6020B	597742
92519942008	CR-0.1	EPA 3005A	597433	EPA 6020B	597742
92519942001	CR+0.4	SM 2450C-2011	597549		
92519942002	CR+0.2	SM 2450C-2011	597549		
92519942003	DW_US	SM 2450C-2011	597549		
92519942004	DW_DS	SM 2450C-2011	597549		
92519942005	CR-0.2	SM 2450C-2011	597549		
92519942006	CR-0.5	SM 2450C-2011	597549		
92519942007	CR-0.8	SM 2450C-2011	597549		
92519942008	CR-0.1	SM 2450C-2011	597549		
92519942001	CR+0.4	SM 2320B-2011	598016		
92519942002	CR+0.2	SM 2320B-2011	598016		
92519942003	DW_US	SM 2320B-2011	598016		
92519942004	DW_DS	SM 2320B-2011	598016		
92519942005	CR-0.2	SM 2320B-2011	598016		
92519942006	CR-0.5	SM 2320B-2011	598016		
92519942007	CR-0.8	SM 2320B-2011	598016		
92519942008	CR-0.1	SM 2320B-2011	598016		
92519942001	CR+0.4	EPA 300.0 Rev 2.1 1993	597589		
92519942002	CR+0.2	EPA 300.0 Rev 2.1 1993	597589		
92519942003	DW_US	EPA 300.0 Rev 2.1 1993	597589		
92519942004	DW_DS	EPA 300.0 Rev 2.1 1993	597589		
92519942005	CR-0.2	EPA 300.0 Rev 2.1 1993	597589		
92519942006	CR-0.5	EPA 300.0 Rev 2.1 1993	597589		
92519942007	CR-0.8	EPA 300.0 Rev 2.1 1993	597589		
92519942008	CR-0.1	EPA 300.0 Rev 2.1 1993	597589		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:

Arcadis - Atlanta

Project #

WO# : 92519942

PM: MP

Due Date: 02/08/21

CLIENT: GA-ArcadAtl1

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2/3/21 KRW

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: THR230

Type of Ice:

Wet Blue None

Cooler Temp: 1.6 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.6

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

APPENDIX A

**FIELD DATA FORMS
AUGUST 2020**

Product Name: Low-Flow System

Date: 2020-08-13 13:10:54

Project Information:

Operator Name K. Minkara
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 32 ft

Pump placement from TOC 32 ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.89 ft
Screen Length 10 ft
Depth to Water 15.04 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.2328295 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 77.76 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:48:16	1799.96	23.34	6.15	148.70	4.84	20.79	3.12	169.64
Last 5	12:53:16	2099.96	23.88	6.16	147.57	4.62	21.03	2.95	164.41
Last 5	12:58:16	2399.99	23.79	6.15	149.01	4.25	21.25	2.96	167.90
Last 5	13:03:16	2699.96	24.61	6.16	147.76	4.24	21.39	2.89	166.74
Last 5	13:08:16	2999.93	24.69	6.17	149.94	4.11	21.52	2.84	161.59
Variance 0			-0.09	-0.01	1.44			0.01	3.50
Variance 1			0.81	0.01	-1.25			-0.06	-1.16
Variance 2			0.09	0.01	2.18			-0.05	-5.15

Notes

Purge attempt #3
Sampled at 1307

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-11 11:39:34

Project Information:

Operator Name C. Tidwell
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type samplepro
Tubing Type polyethelene
Tubing Diameter .170 in
Tubing Length 57.5 ft

Pump placement from TOC 57.5 ft

Well Information:

Well ID DGWA-70A
Well diameter 2 in
Well Total Depth 62.40 ft
Screen Length 10 ft
Depth to Water 39.57 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4716468 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.72 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:17:31	600.02	18.29	6.13	65.78	30.30	39.87	8.01	142.62
Last 5	11:22:31	900.02	18.24	6.01	63.34	13.00	39.87	8.32	141.82
Last 5	11:27:31	1200.02	18.23	5.94	62.25	9.21	39.87	8.35	142.37
Last 5	11:32:31	1500.88	18.32	5.88	61.39	5.18	39.88	8.25	143.28
Last 5	11:37:31	1800.88	18.32	5.86	61.18	3.94	39.88	8.28	143.48
Variance 0			-0.00	-0.07	-1.09			0.03	0.54
Variance 1			0.09	-0.06	-0.86			-0.10	0.91
Variance 2			0.00	-0.02	-0.21			0.02	0.21

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-11 14:55:24

Project Information:

Operator Name C. Tidwell
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type samplepro
Tubing Type polyethelene
Tubing Diameter .170 in
Tubing Length 42.75 ft

Pump placement from TOC 42.75 ft

Well Information:

Well ID DGWA-71
Well diameter 2 in
Well Total Depth 47.73 ft
Screen Length 10 ft
Depth to Water 28.10 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4058113 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 11 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:38:17	300.07	18.77	6.01	80.73	20.50	29.00	1.33	100.96
Last 5	14:43:17	600.02	18.68	5.97	78.88	6.22	29.01	1.04	104.22
Last 5	14:48:17	900.02	18.64	5.97	78.46	2.43	29.01	0.94	107.29
Last 5	14:53:18	1201.02	18.68	5.96	78.45	2.22	29.02	0.87	109.46
Last 5									
Variance 0			-0.08	-0.04	-1.85			-0.29	3.26
Variance 1			-0.04	-0.00	-0.42			-0.11	3.06
Variance 2			0.04	-0.01	-0.02			-0.07	2.17

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 11:03:26

Project Information:

Operator Name K. Minkara
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 38 ft

Pump placement from TOC 38 ft

Well Information:

Well ID DGWC-37
Well diameter 2 in
Well Total Depth 43.08 ft
Screen Length 10 ft
Depth to Water 14.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.25 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:50:47	600.01	22.63	6.35	424.44	6.71	14.33	0.95	224.88
Last 5	10:55:47	900.00	22.58	6.35	421.21	5.57	14.35	1.07	225.21
Last 5	11:00:47	1199.99	22.44	6.34	411.91	4.63	14.35	1.06	226.27
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.04	-0.00	-3.23			0.11	0.34
Variance 2			-0.14	-0.01	-9.30			-0.00	1.06

Notes

Smartroll skipped first reading (1045)

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 10:01:38

Project Information:

Operator Name K. Minkara
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 23 ft

Pump placement from TOC 23 ft

Well Information:

Well ID DGWC-38
Well diameter 2 in
Well Total Depth 28.08 ft
Screen Length 10 ft
Depth to Water 6.45 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1926587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5.28 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:50:02	300.05	24.29	6.08	660.02	2.61	6.82	0.33	188.27
Last 5	09:55:02	600.01	23.30	6.03	670.20	0.90	6.87	0.18	226.80
Last 5	10:00:02	900.00	23.22	6.05	672.42	1.56	6.89	0.13	286.78
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.99	-0.05	10.18			-0.15	38.52
Variance 2			-0.08	0.02	2.22			-0.06	59.99

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 15:34:02

Project Information:

Operator Name J. Waguespack
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter .170 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-39
Well diameter 2 in
Well Total Depth 24.65 ft
Screen Length 10 ft
Depth to Water 8.80 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.299805 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 20.28 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:45:01	900.02	20.34	6.34	773.14	1.64	10.40	0.17	43.98
Last 5	14:50:01	1200.02	20.35	6.36	768.43	3.33	10.44	0.18	38.09
Last 5	14:55:01	1500.02	20.11	6.37	773.32	3.97	10.46	0.18	32.34
Last 5	15:00:01	1800.02	19.99	6.38	773.23	3.64	10.49	0.17	27.11
Last 5	15:05:10	2108.71	20.22	6.39	768.76	3.12	10.49	0.17	21.96
Variance 0			-0.24	0.01	4.90			0.00	-5.74
Variance 1			-0.12	0.01	-0.09			-0.01	-5.23
Variance 2			0.22	0.01	-4.47			-0.00	-5.15

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 11:31:43

Project Information:

Operator Name J. Waguespack
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter .170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWC-40
Well diameter 2 in
Well Total Depth 38.40 ft
Screen Length 10 ft
Depth to Water 19.28 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.362293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.4 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:02:07	300.03	21.64	4.68	531.94	0.42	19.40	2.87	101.67
Last 5	11:07:07	600.02	21.38	4.67	537.39	0.32	19.40	2.85	102.63
Last 5	11:12:07	900.02	21.09	4.66	537.09	0.45	19.40	2.82	104.14
Last 5	11:17:07	1200.02	21.15	4.65	537.66	1.16	19.40	2.79	104.85
Last 5	11:22:07	1500.02	21.20	4.65	535.10	1.16	19.40	2.79	106.01
Variance 0			-0.29	-0.01	-0.29			-0.04	1.52
Variance 1			0.07	-0.00	0.56			-0.02	0.70
Variance 2			0.04	-0.00	-2.56			-0.01	1.17

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 16:27:27

Project Information:

Operator Name K. Minkara
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 50 ft

Pump placement from TOC 50 ft

Well Information:

Well ID DGWC-67
Well diameter 2 in
Well Total Depth 55.5 ft
Screen Length 10 ft
Depth to Water 10.34 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.3131711 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 7.08 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:10:57	300.02	24.91	6.45	412.74	2.77	10.80	0.41	205.87
Last 5	16:15:57	600.01	22.11	6.31	418.42	1.44	10.90	0.17	228.78
Last 5	16:20:57	900.00	21.91	6.29	418.09	1.88	10.93	0.13	238.78
Last 5	16:26:02	1204.99	22.42	6.28	419.94	1.94	10.93	0.10	244.98
Last 5									
Variance 0			-2.79	-0.14	5.68			-0.23	22.91
Variance 1			-0.20	-0.03	-0.33			-0.05	10.01
Variance 2			0.51	-0.01	1.85			-0.02	6.20

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 15:28:11

Project Information:

Operator Name K. Minkara
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 25 ft

Pump placement from TOC 25 ft

Well Information:

Well ID DGWC-68A
Well diameter 2 in
Well Total Depth 29.79 ft
Screen Length 10 ft
Depth to Water 10.45 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2015856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.2 in
Total Volume Pumped 3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:16:04	300.03	22.90	6.63	417.98	1.91	10.79	0.14	240.66
Last 5	15:21:05	601.01	21.51	6.64	426.80	1.05	10.79	0.09	244.29
Last 5	15:26:05	901.00	21.07	6.63	429.46	0.98	10.80	0.09	238.69
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-1.39	0.01	8.83			-0.05	3.63
Variance 2			-0.44	-0.00	2.66			-0.00	-5.60

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 14:37:28

Project Information:

Operator Name K. Minkara
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-69
Well diameter 2 in
Well Total Depth 24.06 ft
Screen Length 10 ft
Depth to Water 6.20 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1748051 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 14.4 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:25:03	300.06	23.81	6.29	232.14	5.74	7.18	0.56	276.32
Last 5	14:30:03	600.01	22.72	6.27	230.57	3.86	7.37	0.50	296.44
Last 5	14:35:03	900.00	22.46	6.26	225.97	3.78	7.40	0.60	296.83
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-1.10	-0.02	-1.57			-0.06	20.12
Variance 2			-0.26	-0.01	-4.59			0.10	0.39

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-13 17:40:32

Project Information:

Operator Name J. Waguespack
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter .170 in
Tubing Length 34 ft

Pump placement from TOC 34 ft

Well Information:

Well ID B-62
Well diameter 2 in
Well Total Depth 39.62 ft
Screen Length 10 ft
Depth to Water 16.65 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.3667564 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 6.6 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:46:30	1201.02	19.68	6.45	310.07	9.11	17.16	0.30	-1.19
Last 5	16:51:32	1503.02	19.57	6.43	296.42	6.91	17.16	0.28	-3.04
Last 5	16:56:33	1804.02	19.62	6.41	285.06	4.80	17.18	0.27	-4.28
Last 5	17:01:33	2104.02	19.51	6.40	280.42	3.54	17.18	0.26	-5.01
Last 5	17:06:35	2406.02	19.59	6.40	279.74	3.30	17.20	0.25	-5.76
Variance 0			0.05	-0.02	-11.35			-0.01	-1.25
Variance 1			-0.10	-0.01	-4.64			-0.01	-0.73
Variance 2			0.07	0.01	-0.68			-0.01	-0.75

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-08-17 10:56:28

Project Information:

Operator Name J. Waguespack
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter .170 in
Tubing Length 42 ft

Pump placement from TOC 42 ft

Well Information:

Well ID B-100
Well diameter 2 in
Well Total Depth 47.50 ft
Screen Length 10 ft
Depth to Water 34.80 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4024638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.44 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:29:47	1200.02	22.31	4.98	864.70	6.60	34.92	0.93	88.48
Last 5	10:34:47	1500.02	22.30	4.99	866.12	4.67	34.92	0.87	88.78
Last 5	10:39:52	1805.02	22.31	5.00	868.43	3.17	34.92	0.79	89.48
Last 5	10:44:53	2106.02	22.38	5.01	872.06	2.85	34.92	0.74	90.27
Last 5	10:50:00	2413.02	22.32	5.02	874.41	2.79	34.92	0.72	90.87
Variance 0			0.01	0.01	2.31			-0.08	0.70
Variance 1			0.07	0.02	3.63			-0.05	0.79
Variance 2			-0.06	0.01	2.35			-0.02	0.60

Notes

Grab Samples

Low-Flow Test Report:

Test Date / Time: 9/22/2020 12:18:45 PM

Project: Plant McDonough (3)

Operator Name: Chris Tidwell

Location Name: DGWA-53 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 26.84 ft Total Depth: 36.84 ft Initial Depth to Water: 14.1 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 32 ft Estimated Total Volume Pumped: 3000 ml Flow Cell Volume: 90 ml Final Flow Rate: 150 ml/min Final Draw Down: 1.61 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/22/2020 12:18 PM	00:00	5.51 pH	30.03 °C	0.00 µS/cm	6.88 mg/L		130.3 mV	14.10 ft	150.00 ml/min
9/22/2020 12:23 PM	05:00	6.29 pH	21.90 °C	207.42 µS/cm	1.18 mg/L	2.63 NTU	5.0 mV	14.59 ft	150.00 ml/min
9/22/2020 12:28 PM	10:00	6.38 pH	20.69 °C	213.28 µS/cm	0.62 mg/L	2.79 NTU	-12.1 mV	15.05 ft	150.00 ml/min
9/22/2020 12:33 PM	15:00	6.41 pH	21.03 °C	212.81 µS/cm	0.46 mg/L	4.11 NTU	-8.8 mV	15.49 ft	150.00 ml/min
9/22/2020 12:38 PM	20:00	6.43 pH	20.64 °C	210.82 µS/cm	0.42 mg/L	4.05 NTU	-21.2 mV	15.71 ft	150.00 ml/min

Samples

Sample ID:	Description:
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APPENDIX A

**FIELD DATA FORMS
SEPTEMBER 2020**

Product Name: Low-Flow System

Date: 2020-09-22 10:35:20

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type
Tubing Type
Tubing Diameter .170 in
Tubing Length 57.5 ft

Pump placement from TOC 57.5 ft

Well Information:

Well ID DGWA-70A
Well diameter 2 in
Well Total Depth 62.40 ft
Screen Length 10 ft
Depth to Water 40.35 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4716468 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 9.48 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:05:41	300.07	17.65	6.30	59.17	17.00	41.00	4.74	96.04
Last 5	10:10:41	600.02	17.36	6.10	59.66	10.11	41.05	4.50	95.80
Last 5	10:15:41	900.02	17.36	6.04	59.26	5.91	41.09	4.43	96.88
Last 5	10:20:41	1200.02	17.36	6.01	59.57	3.67	41.14	4.43	97.45
Last 5									
Variance 0			-0.29	-0.20	0.49			-0.25	-0.23
Variance 1			0.00	-0.06	-0.40			-0.07	1.08
Variance 2			-0.00	-0.03	0.30			-0.00	0.57

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-22 11:52:45

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type
Tubing Type poly
Tubing Diameter .170 in
Tubing Length 42 ft

Pump placement from TOC 42 ft

Well Information:

Well ID DGWA-71
Well diameter 2 in
Well Total Depth 47.79 ft
Screen Length 10 ft
Depth to Water 28.55 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4024638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 8.04 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:30:48	300.05	18.12	6.11	72.01	11.76	29.09	0.83	102.15
Last 5	11:35:48	600.02	17.90	6.07	72.11	6.02	29.19	0.73	99.15
Last 5	11:40:48	900.02	17.86	6.07	72.40	2.49	29.22	0.70	98.05
Last 5	11:45:48	1200.02	17.83	6.06	72.16	1.21	29.22	0.71	97.71
Last 5									
Variance 0			-0.22	-0.03	0.10			-0.10	-3.00
Variance 1			-0.04	-0.01	0.30			-0.03	-1.10
Variance 2			-0.03	-0.01	-0.24			0.01	-0.34

Notes

Grab Samples

Low-Flow Test Report:

Test Date / Time: 9/24/2020 9:26:58 AM

Project: Plant McDonough (8)

Operator Name: Chris Tidwell

Location Name: DGWC-37 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 33.08 ft Total Depth: 43.08 ft Initial Depth to Water: 13.55 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 38 ft Estimated Total Volume Pumped: 6286.667 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.18 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/24/2020 9:26 AM	00:00	6.91 pH	19.15 °C	610.69 µS/cm	5.72 mg/L		130.8 mV	13.55 ft	200.00 ml/min
9/24/2020 9:31 AM	05:00	6.28 pH	18.93 °C	462.02 µS/cm	0.83 mg/L	3.46 NTU	74.0 mV	13.72 ft	200.00 ml/min
9/24/2020 9:36 AM	10:00	6.29 pH	18.88 °C	447.43 µS/cm	0.85 mg/L	2.42 NTU	68.9 mV	13.72 ft	200.00 ml/min
9/24/2020 9:41 AM	15:00	6.29 pH	18.93 °C	438.55 µS/cm	0.88 mg/L	0.98 NTU	87.9 mV	13.73 ft	200.00 ml/min
9/24/2020 9:46 AM	20:00	6.30 pH	18.94 °C	428.36 µS/cm	1.01 mg/L	1.43 NTU	67.4 mV	13.73 ft	200.00 ml/min
9/24/2020 9:51 AM	25:00	6.30 pH	18.97 °C	412.88 µS/cm	1.08 mg/L	1.19 NTU	86.3 mV	13.73 ft	200.00 ml/min
9/24/2020 9:53 AM	26:26	6.30 pH	18.97 °C	421.86 µS/cm	1.07 mg/L	1.19 NTU	85.9 mV	13.73 ft	200.00 ml/min
9/24/2020 9:58 AM	31:26	6.30 pH	19.01 °C	425.40 µS/cm	0.99 mg/L		85.6 mV	13.73 ft	200.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 9/24/2020 1:44:28 PM

Project: Plant McDonough (10)

Operator Name: Chris Tidwell

Location Name: DGWC-38 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.08 ft Total Depth: 28.08 ft Initial Depth to Water: 5.94 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 23 ft Estimated Total Volume Pumped: 6000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.4 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/24/2020 1:44 PM	00:00	6.32 pH	19.80 °C	183.16 µS/cm	3.27 mg/L		71.9 mV	5.94 ft	200.00 ml/min
9/24/2020 1:49 PM	05:00	6.25 pH	20.04 °C	189.55 µS/cm	2.77 mg/L	9.42 NTU	70.1 mV	6.29 ft	200.00 ml/min
9/24/2020 1:54 PM	10:00	6.26 pH	19.94 °C	201.17 µS/cm	2.63 mg/L	6.79 NTU	87.2 mV	6.30 ft	200.00 ml/min
9/24/2020 1:59 PM	15:00	6.10 pH	19.77 °C	307.13 µS/cm	2.19 mg/L	5.18 NTU	72.3 mV	6.31 ft	200.00 ml/min
9/24/2020 2:04 PM	20:00	6.03 pH	19.73 °C	641.83 µS/cm	0.36 mg/L	2.89 NTU	70.6 mV	6.32 ft	200.00 ml/min
9/24/2020 2:09 PM	25:00	6.03 pH	19.68 °C	654.82 µS/cm	0.23 mg/L	2.55 NTU	85.6 mV	6.33 ft	200.00 ml/min
9/24/2020 2:14 PM	30:00	6.05 pH	19.73 °C	658.75 µS/cm	0.19 mg/L	2.12 NTU	70.6 mV	6.34 ft	200.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 9/25/2020 10:48:42 AM

Project: Plant McDonough (12)

Operator Name: Chris Tidwell

Location Name: DGWC-39 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 14.65 ft Total Depth: 24.65 ft Initial Depth to Water: 6.73 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 20 ft Estimated Total Volume Pumped: 3000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.82 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/25/2020 10:48 AM	00:00	6.20 pH	22.05 °C	698.27 µS/cm	1.36 mg/L		47.6 mV	6.73 ft	200.00 ml/min
9/25/2020 10:53 AM	05:00	6.30 pH	21.51 °C	752.60 µS/cm	0.30 mg/L	7.33 NTU	29.9 mV	7.45 ft	200.00 ml/min
9/25/2020 10:58 AM	10:00	6.35 pH	21.31 °C	754.58 µS/cm	0.24 mg/L	6.00 NTU	19.6 mV	7.51 ft	200.00 ml/min
9/25/2020 11:03 AM	15:00	6.38 pH	21.11 °C	754.07 µS/cm	0.21 mg/L	3.65 NTU	13.6 mV	7.55 ft	200.00 ml/min

Samples

Sample ID:	Description:
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Product Name: Low-Flow System

Date: 2020-09-23 14:29:49

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type poly
Tubing Diameter .170 in
Tubing Length 33.5 ft

Pump placement from TOC 33.5 ft

Well Information:

Well ID DGWC-40
Well diameter 2 in
Well Total Depth 38.40 ft
Screen Length 10 ft
Depth to Water 17.45 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.2395247 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.56 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:05:07	300.05	21.99	4.81	538.67	3.33	17.58	2.10	166.38
Last 5	14:10:07	600.02	21.24	4.78	545.82	2.54	17.58	2.25	166.03
Last 5	14:15:07	900.02	21.03	4.78	546.09	1.80	17.58	2.28	165.46
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.76	-0.03	7.15			0.14	-0.35
Variance 2			-0.21	-0.00	0.26			0.03	-0.57

Notes

Grab Samples

Low-Flow Test Report:

Test Date / Time: 9/23/2020 2:50:51 PM

Project: Plant McDonough (7)

Operator Name: Chris Tidwell

Location Name: DGWC-67 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 45.5 ft Total Depth: 55.5 ft Initial Depth to Water: 9.38 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 50.5 ft Estimated Total Volume Pumped: 4000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.52 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/23/2020 2:50 PM	00:00	6.32 pH	23.21 °C	405.49 µS/cm	1.66 mg/L		61.9 mV	9.38 ft	200.00 ml/min
9/23/2020 2:55 PM	05:00	6.23 pH	20.48 °C	419.40 µS/cm	0.46 mg/L	5.45 NTU	57.5 mV	9.81 ft	200.00 ml/min
9/23/2020 3:00 PM	10:00	6.23 pH	20.20 °C	420.35 µS/cm	0.35 mg/L	3.69 NTU	66.6 mV	9.89 ft	200.00 ml/min
9/23/2020 3:05 PM	15:00	6.23 pH	20.16 °C	421.78 µS/cm	0.31 mg/L	4.01 NTU	52.9 mV	9.89 ft	200.00 ml/min
9/23/2020 3:10 PM	20:00	6.23 pH	20.32 °C	419.94 µS/cm	0.29 mg/L	3.22 NTU	52.2 mV	9.90 ft	200.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 9/23/2020 1:44:28 PM

Project: Plant McDonough (6)

Operator Name: Chris Tidwell

Location Name: DGWC-68A Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 19.79 ft Total Depth: 29.79 ft Initial Depth to Water: 9.95 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 25 ft Estimated Total Volume Pumped: 3000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.18 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/23/2020 1:44 PM	00:00	6.58 pH	23.21 °C	417.67 µS/cm	1.11 mg/L		43.0 mV	9.95 ft	200.00 ml/min
9/23/2020 1:49 PM	05:00	6.60 pH	21.78 °C	426.43 µS/cm	0.39 mg/L	1.83 NTU	40.5 mV	10.13 ft	200.00 ml/min
9/23/2020 1:54 PM	10:00	6.60 pH	21.25 °C	429.16 µS/cm	0.29 mg/L	1.34 NTU	49.9 mV	10.13 ft	200.00 ml/min
9/23/2020 1:59 PM	15:00	6.60 pH	21.24 °C	429.65 µS/cm	0.25 mg/L	1.12 NTU	46.4 mV	10.13 ft	200.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 9/23/2020 11:19:25 AM

Project: Plant McDonough (5)

Operator Name: Chris Tidwell

Location Name: DGWC-69 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 14.06 ft Total Depth: 24.06 ft Initial Depth to Water: 5.71 ft	Pump Type: Alexis Peristaltic Tubing Type: Polyethylene Pump Intake From TOC: 19 ft Estimated Total Volume Pumped: 5903.333 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.71 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
9/23/2020 11:19 AM	00:00	6.88 pH	28.13 °C	201.94 µS/cm	5.01 mg/L		84.1 mV	5.71 ft	200.00 ml/min
9/23/2020 11:24 AM	05:00	6.06 pH	21.90 °C	130.48 µS/cm	3.18 mg/L	38.60 NTU	56.5 mV	6.37 ft	200.00 ml/min
9/23/2020 11:29 AM	10:00	6.08 pH	21.22 °C	119.70 µS/cm	3.16 mg/L	26.70 NTU	55.1 mV	6.42 ft	200.00 ml/min
9/23/2020 11:34 AM	15:00	6.09 pH	20.93 °C	116.71 µS/cm	3.19 mg/L	18.50 NTU	56.0 mV	6.42 ft	200.00 ml/min
9/23/2020 11:39 AM	20:00	6.08 pH	20.80 °C	115.47 µS/cm	3.21 mg/L	12.80 NTU	57.0 mV	6.42 ft	200.00 ml/min
9/23/2020 11:44 AM	25:00	6.08 pH	20.69 °C	113.65 µS/cm	3.23 mg/L	6.72 NTU	58.1 mV	6.42 ft	200.00 ml/min
9/23/2020 11:48 AM	29:31	6.08 pH	20.84 °C	113.04 µS/cm	3.25 mg/L	4.77 NTU	56.3 mV	6.42 ft	200.00 ml/min

Samples

Sample ID:	Description:
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Product Name: Low-Flow System

Date: 2020-09-24 10:30:28

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type poly
Tubing Diameter .170 in
Tubing Length 34.5 ft

Pump placement from TOC 34.5 ft

Well Information:

Well ID B-62
Well diameter 2 in
Well Total Depth 39.62 ft
Screen Length 10 ft
Depth to Water 15.43 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.2439881 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.04 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:58:48	300.06	18.59	6.90	499.59	53.90	15.71	0.45	85.09
Last 5	10:03:48	600.02	18.32	6.60	319.76	23.30	15.70	0.30	71.39
Last 5	10:08:48	900.02	18.25	6.57	306.97	13.80	15.70	0.26	65.58
Last 5	10:13:48	1200.02	18.21	6.57	299.63	11.10	15.70	0.28	60.66
Last 5	10:18:54	1506.02	18.16	6.55	295.98	4.35	15.60	0.23	56.95
Variance 0			-0.07	-0.03	-12.79			-0.03	-5.81
Variance 1			-0.04	-0.00	-7.34			0.02	-4.92
Variance 2			-0.05	-0.01	-3.65			-0.06	-3.71

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-25 10:58:59

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type
Tubing Type poly
Tubing Diameter .170 in
Tubing Length 43 ft

Pump placement from TOC 43 ft

Well Information:

Well ID B-100
Well diameter 2 in
Well Total Depth 47.93 ft
Screen Length 10 ft
Depth to Water 32.10 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4069272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.8 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:35:17	300.05	21.66	5.55	937.26	29.40	32.30	0.24	110.91
Last 5	10:40:17	600.02	21.46	5.55	930.94	18.90	32.30	0.16	107.96
Last 5	10:45:17	900.02	21.43	5.55	929.94	11.79	32.20	0.13	106.95
Last 5	10:50:17	1200.02	21.46	5.53	929.93	4.79	32.25	0.11	106.40
Last 5									
Variance 0			-0.20	0.01	-6.32			-0.08	-2.95
Variance 1			-0.03	-0.01	-1.00			-0.03	-1.02
Variance 2			0.03	-0.01	-0.00			-0.02	-0.55

Notes

Grab Samples

APPENDIX A

Instrument Calibration Forms

Project Plant McDonough
 Field Staff Karim Minkara, Chris Tidwell, Jude Waguespack

Instrument Calibration

Date: _____ Time: 8/11 8/12 8/13 8/14

Parameter	Units	Standard	SmarTROLL SN <u>597519</u> iPad # <u>94</u>	SmarTROLL SN <u>597519</u> iPad # <u>88</u>	SmarTROLL SN <u>597519</u> iPad # <u>94</u>	SmarTROLL SN <u>597519</u> iPad # <u>94</u>
DO	% saturation	100	<u>91.3</u>	<u>92.7</u>	<u>92.9</u>	<u>91.2</u>
Conductivity	us/cm	4490	<u>4566</u>	<u>4313</u>	<u>4420</u>	<u>4397</u>
pH	S.U.	4.00	<u>4.31</u>	<u>4.36</u>	<u>4.39</u>	<u>4.41</u>
pH	S.U.	7.00	<u>7.21</u>	<u>7.23</u>	<u>7.24</u>	<u>7.27</u>
pH	S.U.	10.00	<u>10.13</u>	<u>10.14</u>	<u>10.06</u>	<u>10.11</u>
ORP	mV	228.00	<u>209.6</u>	<u>207.5</u>	<u>210.1</u>	<u>207.6</u>

Turbidity	Units	Standard	LaMotte SN <u>2953092</u>	LaMotte SN <u>2953092</u>	LaMotte SN <u>2953091</u>	LaMotte SN <u>2953093</u>
	NTU	0.0	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
	NTU	1.0	<u>1.02</u>	<u>1.13</u>	<u>1.01</u>	<u>0.98</u>
	NTU	10.0	<u>10.11</u>	<u>10.12</u>	<u>10.09</u>	<u>9.92</u>

Date: _____ Time: _____

Parameter	Units	Standard	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____
DO	% saturation	100				
Conductivity	us/cm	4490				
pH	S.U.	4.00				
pH	S.U.	7.00				
pH	S.U.	10.00				
ORP	mV	228.00				

Turbidity	Units	Standard	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0				
	NTU	1.0				
	NTU	10.0				

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff Karim Minkara, Chris Tidwell, Jude Waguespack

Instrument Calibration

Date: 8/11/20 Time: 8/11/20 8/12/20 8/13/20

Parameter	Units	Standard	SmarTROLL SN 647057 iPad # 91	SmarTROLL SN 647057 iPad # 91	SmarTROLL SN 647057 iPad # 91	SmarTROLL SN 647057 iPad # 91
DO	% saturation	100	101.8	or 99.0	100.4	104.8
Conductivity	us/cm	4490	4463	4516	4495	4484
pH	S.U.	4.00	4.83	4.82	4.88	4.92
pH	S.U.	7.00	7.51	7.68	7.55	7.57
pH	S.U.	10.00	10.13	10.31	10.22	10.20
ORP	mV	228.00	183.7	182.7	184.0	178.2

Turbidity	Units	Standard	LaMotte SN 1479-4011	LaMotte SN 1479-4011	LaMotte SN 1479-4011	LaMotte SN 1479-4011
	NTU	0.0	0.02	0.10	0.01	0.05
	NTU	1.0	1.05	1.27	1.01	1.29
	NTU	10.0	10.00	10.00	10.00	9.55

Date: Time:

Parameter	Units	Standard	SmarTROLL SN 647057 iPad # 91	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____
DO	% saturation	100	97.9			
Conductivity	us/cm	4490	4536			
pH	S.U.	4.00	4.92			
pH	S.U.	7.00	7.47			
pH	S.U.	10.00	10.09			
ORP	mV	228.00	190.2			

Turbidity	Units	Standard	LaMotte SN 1479-4011	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.00			
	NTU	1.0	0.92			
	NTU	10.0	9.55			

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff Karim Minkara, Chris Tidwell, Jude Waguespack

Instrument Calibration

Date: 8/11/20 Time: 0700 ⁰⁶⁵⁵ 08/12/20 ⁰⁷⁰⁰ 08/13/20 ⁰⁷⁰² 08/14/20

Parameter	Units	Standard	SmarTROLL SN <u>643819</u> iPad # <u>92</u>	SmarTROLL SN <u>643819</u> iPad # <u>92</u>	SmarTROLL SN <u>643819</u> iPad # <u>92</u>	SmarTROLL SN <u>643819</u> iPad # <u>92</u>
DO	% saturation	100	97.1	99.8	101.5	100.8
Conductivity	us/cm	4490	4534	4441	4460	4577
pH	S.U.	4.00	4.31	4.32	4.34	4.36
pH	S.U.	7.00	7.11	7.13	7.10	7.09
pH	S.U.	10.00	10.06	10.07	10.00	10.01
ORP	mV	228.00	210.4	208.2	209.6	207.7

Turbidity	Units	Standard	LaMotte SN <u>1859-0412</u>	LaMotte SN <u>1859-0412</u>	LaMotte SN <u>1859-0412</u>	LaMotte SN <u>1859-0412</u>
	NTU	0.0	-0.03	0.0	0.0	0.0
	NTU	1.0	0.93	1.09	1.10	1.00
	NTU	10.0	10.98	9.10	9.64	9.91

Date: 08/17/20 Time: 0800 ⁰⁸¹⁵ 08/19/20

Parameter	Units	Standard	SmarTROLL SN <u>643819</u> iPad # <u>92</u>	SmarTROLL SN <u>643819</u> iPad # <u>92</u>	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____
DO	% saturation	100	99.0	96.3		
Conductivity	us/cm	4490	4604	4608		
pH	S.U.	4.00	4.44	4.43		
pH	S.U.	7.00	7.09	7.08		
pH	S.U.	10.00	10.04	10.01		
ORP	mV	228.00	206.6	208.0		

Turbidity	Units	Standard	LaMotte SN <u>1859-0412</u>	LaMotte SN <u>1859-0412</u>	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.03	0.03		
	NTU	1.0	0.99	0.93		
	NTU	10.0	9.89	9.92		

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration

Date: 9-22-20 Time: 0746

Parameter	Units	Standard	SmarTROLL SN <u>465016</u>	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	90.3			
Conductivity	us/cm	4490	4512			
pH	S.U.	4.00	4.21			
pH	S.U.	7.00	7.02			
pH	S.U.	10.00	9.85			
ORP	mV	228.00	235.9			

Turbidity	Units	Standard	LaMotte SN <u>1601-4411</u>	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Date: 9-23-20 Time: 0749

Parameter	Units	Standard	SmarTROLL SN <u>465016</u>	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	91.2			
Conductivity	us/cm	4490	4571			
pH	S.U.	4.00	4.17			
pH	S.U.	7.00	7.01			
pH	S.U.	10.00	9.86			
ORP	mV	228.00	234.0			

Turbidity	Units	Standard	LaMotte SN <u>1601-4411</u>	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nephelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration

Date: 9/24/20 Time: 0754

Parameter	Units	Standard	SmarTROLL SN <u>465016</u>	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	90.4			
Conductivity	us/cm	4490	4583			
pH	S.U.	4.00	4.16			
pH	S.U.	7.00	7.00			
pH	S.U.	10.00	9.87			
ORP	mV	228.00	228			

Turbidity	Units	Standard	LaMotte SN <u>1601-4411</u>	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Date: 9/25/20 Time: 0800

Parameter	Units	Standard	SmarTROLL SN 1601-4411	SmarTROLL SN <u>465016</u>	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100		90.7		
Conductivity	us/cm	4490		4655		
pH	S.U.	4.00		4.18 4.24		
pH	S.U.	7.00		6.97		
pH	S.U.	10.00		9.82		
ORP	mV	228.00		231.8		

Turbidity	Units	Standard	LaMotte SN <u>1601-4411</u>	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration

Date: 9/28/20 Time: 0808

Parameter	Units	Standard	SmarTROLL SN <u>465016</u>	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	97.5			
Conductivity	us/cm	4490	4719			
pH	S.U.	4.00	4.18			
pH	S.U.	7.00	6.99			
pH	S.U.	10.00	9.84			
ORP	mV	228.00	224.9			

Turbidity	Units	Standard	LaMotte SN <u>464-4411</u>	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Date: Time:

Parameter	Units	Standard	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100				
Conductivity	us/cm	4490				
pH	S.U.	4.00				
pH	S.U.	7.00				
pH	S.U.	10.00				
ORP	mV	228.00				

Turbidity	Units	Standard	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0				
	NTU	1.0				
	NTU	10.0				

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration *SmartTroll 400 / LaMotte 2020WE*

Date: *9-27-20* Time: *9/22 9/23 9/24 9/25*

Parameter	Units	Standard	SmartTROLL SN <u>728550</u>	SmartTROLL SN <u>728550</u>	SmartTROLL SN <u>728550</u>	SmartTROLL SN <u>728550</u>
DO	% saturation	100	<i>107.9</i>	<i>100.99</i>	<i>96.74</i>	<i>102.49</i>
Conductivity	us/cm	4490	<i>4173.6</i>	<i>4528.2</i>	<i>4568.2</i>	<i>4499.0</i> <i>4502.7</i>
pH	S.U.	4.00	<i>4.09</i>	<i>4.04</i>	<i>3.99</i>	<i>4.02</i>
pH	S.U.	7.00	<i>7.11</i>	<i>7.00</i>	<i>7.02</i>	<i>7.01</i>
pH	S.U.	10.00	<i>10.11</i>	<i>10.06</i>	<i>10.01</i>	<i>10.02</i>
ORP	mV	228.00	<i>235.2</i>	<i>236.4</i>	<i>226.2</i>	<i>225.7</i>

Turbidity	Units	Standard	LaMotte SN <u>6405-1416</u>	LaMotte SN <u>6405-1416</u>	LaMotte SN <u>6405-1416</u>	LaMotte SN <u>6405-1416</u>
	NTU	0.0	<i>0.01</i>	<i>0.00</i>	<i>0.13</i>	<i>0.02</i>
	NTU	1.0	<i>0.99</i>	<i>10.17⁹³</i>	<i>0.93</i>	<i>0.93</i>
	NTU	10.0	<i>10.00</i>	<i>10.17</i>	<i>10.00</i>	<i>10.00</i>

Date: Time:

Parameter	Units	Standard	SmartTROLL SN _____	SmartTROLL SN _____	SmartTROLL SN _____	SmartTROLL SN _____
DO	% saturation	100				
Conductivity	us/cm	4490				
pH	S.U.	4.00				
pH	S.U.	7.00				
pH	S.U.	10.00				
ORP	mV	228.00				

Turbidity	Units	Standard	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0				
	NTU	1.0				
	NTU	10.0				

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration

Date: 09.22.20 Time: 08:03

Parameter	Units	Standard	SmarTROLL SN 642531			
			07:57 09/23/20	07:58 09/24/20	08:02 09/25/20	
DO	% saturation	100	93.2	91.1	90.8	92.0
Conductivity	us/cm	4490	4603	4379	4054	4318
pH	S.U.	4.00	4.55	4.49	4.48	4.50
pH	S.U.	7.00	6.99	7.01	7.01	6.97
pH	S.U.	10.00	9.47	9.53	9.54	9.43
ORP	mV	228.00	225.5	222.8	218.6	218.5

Turbidity	Units	Standard	LaMotte SN 2491-3312	LaMotte SN 2491-3312	LaMotte SN 2491-3312	LaMotte SN 2491-3312
	NTU	0.0	0.02	0.0	0.0	0.0
	NTU	1.0	1.02	1.10	1.05	0.99
	NTU	10.0	10.22	9.46	9.22	9.84

Date: 09.28.20 Time: 08:03

Parameter	Units	Standard	SmarTROLL SN 642531	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	91.9			
Conductivity	us/cm	4490	5163			
pH	S.U.	4.00	4.56			
pH	S.U.	7.00	7.05			
pH	S.U.	10.00	9.29			
ORP	mV	228.00	213.2			

Turbidity	Units	Standard	LaMotte SN 2491-3312	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	0.96			
	NTU	10.0	10.09			

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

APPENDIX A

**Well Inspection Form
August 2020**

**WELL INSPECTION FORM
PLANT MCDONOUGH
AUGUST 2020**

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Is the well visible and accessible? b. Is the well property identified/Correct Well ID? c. Is the well in high traffic area require traffic Protection? d. Is the drainage around the well acceptable (No standing water)? (Y / N / NA)	a. Is protective casing free from damage? b. Is casing free of degradation or deterioration? c. Does casing have functioning weep hole? d. Is the annual space clear of debris and water, or filled with pea gravel? e. Is the well locked and in good condition? (Y / N / NA)	a. Pad in Good Condition b. Pad Sloped away from Well? c. In contact with Protective Casing? d. In Contact with Ground Surface and Stable? e. Free of Debris? (Y / N / NA)	a. Does the cap prevent entry of foreign material? b. Is the casing free of kinks or bends or any obstruction from foreign objects? c. Is the well property vented for equilibrium of air pressure? d. Is the survey point clearly marked on the inner casing? e. Is the depth of the well consistent with the well log? f. Is the casing stable? (Y / N / NA)	a. Does well recharge adequately when purged? b. If dedicated sampling equipment installed, is it in good condition and specified in the approved groundater plan for the facility? c. Does the well require redevelopment? (Y / N / NA)
DGWA-53	↑	Y (a, b, c ["man on the ground"-Haul Road], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWA-70A	↑	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWA-71	↑	Y (a, b, d) ; N (c)	Y (b, c, d, e) ; N (a [cracked lid])	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-2	↓	Y (a, b, c ["man on the ground"-Haul Road], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-4	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-5	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-8	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-9	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	NA (b) ; N (a [may need 3 well vol. purge], c)
DGWC-10	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-11	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-12	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-13	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-14	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-15	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-17	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-19	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-20	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-21	↓	Y (b, d) ; N (a [area overgrown], c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, c, d, e, f) ; N (b [kink])	Y (a) ; NA (b) ; N (c)
DGWC-22	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-23	↓	Y (a, b, c ["man on the ground"-Haul Road], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-37	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-38	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-39	↓	Y (a [stream crossing], b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-40	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-42	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c [historic NTU issues])
DGWC-47	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	NA (b) ; N (a, c)
DGWC-48	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-67	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-68A	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
DGWC-69	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)

**WELL INSPECTION FORM
PLANT MCDONOUGH
AUGUST 2020**

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Is the well visible and accessible? b. Is the well property identified/Correct Well ID? c. Is the well in high traffic area require traffic Protection? d. Is the drainage around the well acceptable (No standing water)? (Y / N / NA)	a. Is protective casing free from damage? b. Is casing free of degradation or deterioration? c. Does casing have functioning weep hole? d. Is the annual space clear of debris and water, or filled with pea gravel? e. Is the well locked and in good condition? (Y / N / NA)	a. Pad in Good Condition b. Pad Sloped away from Well? c. In contact with Protective Casing? d. In Contact with Ground Surface and Stable? e. Free of Debris? (Y / N / NA)	a. Does the cap prevent entry of foreign material? b. Is the casing free of kinks or bends or any obstruction from foreign objects? c. Is the well property vented for equilibrium of air pressure? d. Is the survey point clearly marked on the inner casing? e. Is the depth of the well consistent with the well log? f. Is the casing stable? (Y / N / NA)	a. Does well recharge adequately when purged? b. If dedicated sampling equipment installed, is it in good condition and specified in the approved groundater plan for the facility? c. Does the well require redevelopment? (Y / N / NA)
B-3	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-6	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-7	↓	Y (b, d) ; N (a [sampling from truck blocks road], c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-16	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-18	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-24	↓	Y (a, b, c ["man on the ground"-Haul Road], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-25	↓	Y (a, b, c ["man on the ground"-Haul Road], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-26	↓	Y (a, b, c ["man on the ground"-Haul Road], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-28	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-29	↓	Y (a [Southern Co Lab, check in at gate buzzer], b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-31	↓	Y (a [Southern Co Lab, check in at gate buzzer], b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-41	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-50	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-51	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-52	↓	Y (a [Southern Co Lab, check in at gate buzzer], b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-54	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-55	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-56	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-57	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-58	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-59	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-60	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-61	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-62	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-63	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-64	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (b, c, d, e) ; N (a [rings disconnected from pad])	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-65	↓	Y (a [parking lot of concrete plant, walk upstairs to check-in], b, d) ; N (c)	Y (a, b, c, d) ; N (e [missing catcher for one screw])	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-66	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-68	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-76	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)

**WELL INSPECTION FORM
PLANT MCDONOUGH
AUGUST 2020**

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Is the well visible and accessible? b. Is the well property identified/Correct Well ID? c. Is the well in high traffic area require traffic Protection? d. Is the drainage around the well acceptable (No standing water)? (Y / N / NA)	a. Is protective casing free from damage? b. Is casing free of degradation or deterioration? c. Does casing have functioning weep hole? d. Is the annual space clear of debris and water, or filled with pea gravel? e. Is the well locked and in good condition? (Y / N / NA)	a. Pad in Good Condition b. Pad Sloped away from Well? c. In contact with Protective Casing? d. In Contact with Ground Surface and Stable? e. Free of Debris? (Y / N / NA)	a. Does the cap prevent entry of foreign material? b. Is the casing free of kinks or bends or any obstruction from foreign objects? c. Is the well property vented for equilibrium of air pressure? d. Is the survey point clearly marked on the inner casing? e. Is the depth of the well consistent with the well log? f. Is the casing stable? (Y / N / NA)	a. Does well recharge adequately when purged? b. If dedicated sampling equipment installed, is it in good condition and specified in the approved groundater plan for the facility? c. Does the well require redevelopment? (Y / N / NA)
B-77	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-78	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-79	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-80	↓	Y (b, d) ; N (a [sampling from truck blocks road], c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-81	↓	Y (b, d) ; N (a [sampling from truck blocks road], c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-82	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-83	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	NA (b) ; N (a, c)
B-84	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	NA (b) ; N (a, c)
B-85	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-86	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-87	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-88	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-89	↓	Y (a [parking lot of concrete plant, walk upstairs to check-in], b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-90	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-91	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-92	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-93	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-94	↓	Y (a, b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-95	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-96	↓	Y (a, b, c [traffic control required], d)	Y (a, b, d, e) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-97	↓	Y (a, c [traffic control required], d) ; N (b [missing label])	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-98	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-99	↓	Y (a, b, c [traffic control required], d)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
B-100	↓	Y (a [contractor parking lot], b, d) ; N (c)	Y (a, b, c, d, e)	Y (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
AP-1-B-3	IW	Y (a [walk up access only], b, d) ; N (c)	Y (a, b, c, d, e)	NA (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
AP-1-B-7	IW	Y (a [walk up access only], b, d) ; N (c)	Y (a, b, c, d, e)	NA (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)
AP-1-B-8	IW	Y (a [walk up access only], b, d) ; N (c)	Y (a, b, c, d, e)	NA (a, b, c, d, e)	Y (a, b, c, d, e, f)	Y (a) ; NA (b) ; N (c)

NOTES:
IW = Interstitial Well

APPENDIX A

**Well Inspection Form
September 2020**

**WELL INSPECTION FORM
PLANT MCDONOUGH
SEPTEMBER 2020**

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Visible and accessible b. Properly identified with correct ID c. Not in a high traffic area that requires traffic protection d. No standing water nearby, adequate surrounding drainage	a. Free from damage, degradation, or deterioration b. Functioning weep hole c. Annular space free of debris and water, and has enough pea gravel d. Functioning lock and in good condition	a. Pad & bollards in good condition b. Sloped away from the well c. In contact with protective casing d. Stable and in contact with ground surface e. Free of debris f. Survey pin clearly identified	a. Cap prevents entry of foreign material b. Free of kinks or bends or any obstruction from foreign objects c. Weep hole present and cap not too tight to allow equilibrium for air pressure d. Survey point clearly marked on the inner casing e. Sounded depth consistent with well log f. Stable/immobile	a. Well recharges adequately when purged b. If dedicated sampling equipment installed, it is in good condition and specified in the approved groundwater plan for the facility c. Does not require redevelopment
		(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below
DGWA-53	↑	S	S	S	S	Poor recharge, requires purge dry and returning to sample
DGWA-70A	↑	S	S	S	S	S
DGWA-71	↑	S	S	S	S	S
DGWC-2	↓	S	S	S	S	S
DGWC-4	↓	S	S	S	S	S
DGWC-5	↓	S	S	S	S	S
DGWC-8	↓	S	S	S	S	S
DGWC-9	↓	S	S	S	S	S
DGWC-10	↓	S	S	S	S	S
DGWC-11	↓	S	S	S	S	S
DGWC-12	↓	S	S	S	S	S
DGWC-13	↓	S	S	S	S	S
DGWC-14	↓	S	S	S	S	S
DGWC-15	↓	S	S	S	S	S
DGWC-17	↓	S	S	S	S	S
DGWC-19	↓	S	S	S	S	S
DGWC-20	↓	S	S	S	S	S
DGWC-21	↓	S	S	S	S	S
DGWC-22	↓	S	S	S	S	S
DGWC-23	↓	S	S	S	S	S
DGWC-37	↓	S	S	S	S	S
DGWC-38	↓	S	S	Bollard knocked down	S	S
DGWC-39	↓	Overgrown	S	S	S	S
DGWC-40	↓	S	S	S	S	S
DGWC-42	↓	S	S	S	S	S
DGWC-47	↓	S	S	S	S	S
DGWC-48	↓	S	S	S	S	S
DGWC-67	↓	S	S	S	S	S
DGWC-68A	↓	S	S	S	S	S
DGWC-69	↓	S	S	S	S	S

**WELL INSPECTION FORM
PLANT MCDONOUGH
SEPTEMBER 2020**

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Visible and accessible b. Properly identified with correct ID c. Not in a high traffic area that requires traffic protection d. No standing water nearby, adequate surrounding drainage	a. Free from damage, degradation, or deterioration b. Functioning weep hole c. Annular space free of debris and water, and has enough pea gravel d. Functioning lock and in good condition	a. Pad & bollards in good condition b. Sloped away from the well c. In contact with protective casing d. Stable and in contact with ground surface e. Free of debris f. Survey pin clearly identified	a. Cap prevents entry of foreign material b. Free of kinks or bends or any obstruction from foreign objects c. Weep hole present and cap not too tight to allow equilibrium for air pressure d. Survey point clearly marked on the inner casing e. Sounded depth consistent with well log f. Stable/immobile	a. Well recharges adequately when purged b. If dedicated sampling equipment installed, it is in good condition and specified in the approved groundwater plan for the facility c. Does not require redevelopment
		(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below
B-3	↓	S	S	S	S	S
B-6	↓	S	S	S	S	S
B-7	↓	S	S	S	S	S
B-16	↓	S	S	S	S	S
B-18	↓	S	S	S	S	S
B-24	↓	S	S	S	S	S
B-25	↓	S	S	S	S	S
B-26	↓	S	S	S	S	S
B-28	↓	S	S	S	S	S
B-29	↓	S	S	S	S	S
B-31	↓	S	S	S	S	S
B-41	↓	S	S	S	S	S
B-50	↓	S	S	S	S	S
B-51	↓	S	S	S	S	S
B-52	↓	S	S	S	S	S
B-54	↓	S	S	S	S	S
B-55	↓	S	S	S	S	S
B-56	↓	S	S	S	S	S
B-57	↓	S	S	S	S	S
B-58	↓	S	S	S	S	S
B-59	↓	S	S	S	S	S
B-60	↓	S	S	S	S	S
B-61	↓	S	S	S	S	S
B-62	↓	S	S	S	S	S
B-63	↓	S	Needs washers	S	S	S
B-64	↓	Requires traffic control	S	S	S	S
B-65	↓	Not labeled	S	S	S	S
B-66	↓	S	S	S	S	S
B-68	↓	S	S	S	S	S
B-76	↓	S	S	S	S	S

**WELL INSPECTION FORM
PLANT MCDONOUGH
SEPTEMBER 2020**

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Visible and accessible b. Properly identified with correct ID c. Not in a high traffic area that requires traffic protection d. No standing water nearby, adequate surrounding drainage	a. Free from damage, degradation, or deterioration b. Functioning weep hole c. Annular space free of debris and water, and has enough pea gravel d. Functioning lock and in good condition	a. Pad & bollards in good condition b. Sloped away from the well c. In contact with protective casing d. Stable and in contact with ground surface e. Free of debris f. Survey pin clearly identified	a. Cap prevents entry of foreign material b. Free of kinks or bends or any obstruction from foreign objects c. Weep hole present and cap not too tight to allow equilibrium for air pressure d. Survey point clearly marked on the inner casing e. Sounded depth consistent with well log f. Stable/immobile	a. Well recharges adequately when purged b. If dedicated sampling equipment installed, it is in good condition and specified in the approved groundwater plan for the facility c. Does not require redevelopment
		(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below	(S) for Satisfactory Discrepancies identified below
B-77	↓	S	S	S	S	S
B-78	↓	S	S	S	S	S
B-79	↓	S	S	S	S	S
B-80	↓	S	S	S	S	S
B-81	↓	S	S	S	S	S
B-82	↓	S	S	S	S	S
B-83	↓	S	S	S	S	S
B-84	↓	Not labeled	S	S	S	S
B-85	↓	S	S	S	S	S
B-86	↓	S	S	S	S	S
B-87	↓	S	S	S	S	S
B-88	↓	S	S	S	S	S
B-89	↓	S	S	S	S	S
B-90	↓	Requires traffic control	S	S	S	S
B-91	↓	Requires traffic control	Annulus flooded, needs washers	S	S	S
B-92	↓	Requires traffic control	S	S	S	S
B-93	↓	Requires traffic control	S	S	S	S
B-94	↓	Requires traffic control	S	S	S	S
B-95	↓	Requires traffic control	S	S	S	S
B-96	↓	Requires traffic control	S	S	S	S
B-97	↓	Requires traffic control	S	S	S	S
B-98	↓	Requires traffic control	S	S	S	S
B-99	↓	S	S	S	S	S
B-100	↓	S	S	S	S	S
AP-1-B-3	IW	S	S	S	S	S
AP-1-B-7	IW	S	S	S	S	S
AP-1-B-8	IW	S	S	S	S	S

NOTES:
IW = Interstitial Well

APPENDIX A

DATA VALIDATION SUMMARIES AUGUST & SEPTEMBER 2020

Quality Control Review of Analytical Data- Ash Pond AP-1 Submitted by Pace Analytical Services, LLC August & September 2020

This narrative presents results of the quality control (QC) data review performed on analytical data submitted by Pace Analytical Services, LLC. for groundwater samples collected at Plant McDonough CCR Ash Pond AP-1 between August 11, 2020 and September 25, 2020. The chemical data were reviewed to identify quality issues which could affect the use of the data for decision making purposes.

Information regarding the primary sample locations, analytical parameters, QC samples, sampling dates, and laboratory sample delivery group (SDG) designations is summarized in Table 1. In accordance with groundwater monitoring and corrective action procedures discussed in Title 40 CFR, Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, the samples were analyzed for detection monitoring constituents listed in 40 CFR, Part 257, Appendix III and assessment monitoring constituents listed in 40 CFR, Part 257, Appendix IV. Test methods included Inductively Coupled Plasma- Mass Spectrometry (USEPA Method 6020B), Mercury in Liquid Wastes (USEPA Method 7470A), Inductively Coupled Plasma (6010D), Determination of Inorganic Anions By Ion Chromatography (USEPA Method 300.0), Total Dissolved Solids (Standard Methods 2540C), Radium-226 (USEPA Method 9315) and Radium-228 (USEPA Method 9320).

Data were reviewed in accordance with the US EPA Region IV Data Validation Standard Operating Procedures for Contract Laboratory Program (CLP) Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy (September 2011, Rev. 2.0), US EPA Region IV Data Validation Standard Operating Procedures for CLP Mercury Data by Cold Vapor Atomic Absorption (September 2011, Rev. 2.0), the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017), and US Department of Energy, Evaluation of Radiochemical Data Usability (April 1997). The review included an assessment of the results for completeness, precision (laboratory duplicates, matrix spike/matrix spike duplicates), accuracy (laboratory control samples and matrix spike samples), and blank contamination (including field, equipment and laboratory blanks). Additionally, sample procedures, holding times and chains-of-custody were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytic methodology, method-specific criteria or professional judgment was used.

DATA QUALITY OBJECTIVES

Laboratory Precision:	Laboratory goals for precision were met.
Field Precision:	Field goals for precision were met.
Accuracy:	Laboratory goals for accuracy were met with the exception of barium, chloride, fluoride and sulfate as described in the qualification sections below.
Detection Limits:	Project goals for detection limits were met. Certain samples were diluted due to elevated concentrations of target analytes. Dilutions do not require qualifications based on USEPA guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of site-wide characterization.
Completeness:	There were no rejected analytical results for this event, resulting in a completion of 100%.

Holding Times: All holding time requirements were met in accordance with specific analytical methods.

QUALIFICATIONS

In general, chemical results for the samples collected at the Site were qualified on the basis of low precision or accuracy, or on the basis of professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data by the laboratory during the data validation process.

- U** The analyte was not detected above the method detection limit.
- J** The analyte was reported above the method detection limit and below the reporting limit. The concentration reported is an estimated value.

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines except as specified below. Although these qualifications were applied to some data from samples collected at the site and reported in sample delivery groups (SDGs) 92490488, 92490942, 92490963, 92496940, 92496907, 92497118, 92497117, 92497129, and 92497125, qualifications may not have been required or applied to all samples collected. A summary of sample qualifications can be found in Table 2.

- Certain mercury results in SDG 92490963, and certain chromium and antimony results in SDG 92490488 were qualified as non-detect (U) when the analyte was detected at a similar level in an associated blank sample. As shown in Table 2, if the original sample results were below the reporting limit (RL), the results were qualified as non-detect (U) and the results were raised to the RL.
- Certain barium results in SDG 92490942 and certain chloride, fluoride and sulfate results in SDG 92496940 were qualified as estimated biased high (J+) as the associated matrix spike and or matrix spike duplicate (MS/MSD) recoveries were above the QC criteria.

Golder reviewed the data from samples collected at Plant McDonough CCR Ash Pond AP-1 from August 11, 2020 through September 25, 2020 in accordance with the analytical methods, the laboratory specific QC criteria, and the guidelines. As described above, 100% of the results were acceptable for project use.

REFERENCE

Paar, J.G. & Porterfield, D.R. *Evaluation of Radiochemical Data Usability*. United States Department of Energy, Office of Environmental Restoration and Waste Management, Oak Ridge National Laboratory, April 1997.

USEPA, January 2017, National, Office of Superfund Remediation and Technology Innovation, *National Functional Guidelines for Inorganic Superfund Methods Data Review*, Revision 0.0.

USEPA, September 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.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Mercury Data By Cold Vapor Atomic Absorption*, Revision 2.0.

TABLE 1
Sample Summary Table
SCS Plant McDonough AP-1

SDGs	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Analyses						
						Field pH	Total Metals (EPA 6020B)	Calcium (EPA 6010D)	Mercury (EPA 7470A)	Anions (EPA 300.0)	TDS (SM 2540C)	Radium-226, Radium-228 (9315, 9320)
92490488	DGWA-70A	8/11/2020	92490488001	GW	-	X	X	-	X	X	-	X
92490488	DGWA-71	8/11/2020	92490488002	GW	-	X	X	-	X	X	-	X
92490488	DGWA-53	8/13/2020	92490488004	GW	-	X	X	-	X	X	-	X
92490488	EB-1	8/11/2020	92490488003	WQ	EB (DGWA-70A)	X	X	-	X	X	-	X
92490942	DGWC-37	8/13/2020	92490942001	GW	-	X	X	-	X	X	-	X
92490942	DGWC-38	8/13/2020	92490942002	GW	-	X	X	-	X	X	-	X
92490942	DGWC-39	8/13/2020	92490942003	GW	-	X	X	-	X	X	-	X
92490942	DGWC-40	8/13/2020	92490942004	GW	-	X	X	-	X	X	-	X
92490942	DGWC-67	8/13/2020	92490942005	GW	-	X	X	-	X	X	-	X
92490942	DGWC-68A	8/13/2020	92490942006	GW	-	X	X	-	X	X	-	X
92490942	EB-2	8/13/2020	92490942008	WQ	EB (DGWC-67)	X	X	-	X	X	-	X
92490942	DGWC-69	8/13/2020	92490942007	GW	-	X	X	-	X	X	-	X
92490963	B-62	8/13/2020	92490963001	GW	-	X	X	-	X	X	-	X
92490963	B-100	8/17/2020	92490963008	GW	-	X	X	-	X	X	-	X
92496940	DGWA-53	9/22/2020	92496940001	GW	-	X	X	X	X	X	X	-
92496940	DGWA-70A	9/22/2020	92496940002	GW	-	X	X	X	X	X	X	-
92496940	DGWA-71	9/22/2020	92496940003	GW	-	X	X	X	X	X	X	-
92496940	EB-1	9/22/2020	92496940004	WQ	EB (DGWA-70A)	X	X	X	X	X	X	-
92496907	EB-1	9/22/2020	92496907004	WQ	EB (DGWA-70A)	-	-	-	-	-	-	X
92496907	DGWA-53	9/22/2020	92496907001	GW	-	-	-	-	-	-	-	X
92496907	DGWA-70A	9/22/2020	92496907002	GW	-	-	-	-	-	-	-	X
92496907	DGWA-71	9/22/2020	92496907003	GW	-	-	-	-	-	-	-	X
92497118	DGWC-40	9/23/2020	92497118001	GW	-	-	-	-	-	-	-	X
92497118	DGWC-67	9/23/2020	92497118002	GW	-	-	-	-	-	-	-	X
92497118	DGWC-68A	9/23/2020	92497118003	GW	-	-	-	-	-	-	-	X
92497118	DGWC-69	9/23/2020	92497118004	GW	-	-	-	-	-	-	-	X
92497118	FD-2	9/23/2020	92497118005	GW	FD (DGWC-68A)	-	-	-	-	-	-	X
92497129	DGWC-40	9/23/2020	92497129001	GW	-	X	X	X	X	X	X	-
92497129	DGWC-67	9/23/2020	92497129002	GW	-	X	X	X	X	X	X	-
92497129	DGWC-68A	9/23/2020	92497129003	GW	-	X	X	X	X	X	X	-
92497129	DGWC-69	9/23/2020	92497129004	GW	-	X	X	X	X	X	X	-
92497129	FD-2	9/23/2020	92497129005	GW	FD (DGWC-68A)	X	X	X	X	X	X	-
92497118	DGWC-37	9/24/2020	92497118006	GW	-	-	-	-	-	-	-	X
92497118	DGWC-38	9/24/2020	92497118007	GW	-	-	-	-	-	-	-	X
92497129	DGWC-37	9/24/2020	92497129006	GW	-	X	X	X	X	X	X	-
92497129	DGWC-38	9/24/2020	92497129007	GW	-	X	X	X	X	X	X	-
92497117	B-62	9/24/2020	92497117002	GW	-	-	-	-	-	-	-	X
92497125	B-62	9/24/2020	92497125002	GW	-	X	X	X	X	X	X	-
92497118	DGWC-39	9/25/2020	92497118008	GW	-	-	-	-	-	-	-	X
92497129	DGWC-39	9/25/2020	92497129008	GW	-	X	X	X	X	X	X	-
92497117	B-100	9/25/2020	92497117008	GW	-	-	-	-	-	-	-	X
92497117	FB-3	9/24/2020	92497117004	WQ	FB (B-62)	-	-	-	-	-	-	X
92497125	FB-3	9/24/2020	92497125004	WQ	FB (B-62)	X	X	X	X	X	X	-
92497125	B-100	9/25/2020	92497125008	GW	-	X	X	X	X	X	X	-

Abbreviations:

EB - Equipment blank; FB- Field Blank; FD - Field Duplicate

GW - Groundwater

TDS - Total dissolved solids

WQ - Water quality control

TABLE 2
Qualifier Summary Table
Plant McDonough AP-1

SDG	Sample Name	Constituent	New Result	New RL or MDC	Qualifier	Reason
92490963	B-100	Mercury	0.0002	-	U	Method blank contamination
92490488	DGWA-70A	Chromium	0.01	-	U	Method blank contamination
92490488	DGWA-71	Chromium	0.01	-	U	Method blank contamination
92490488	DGWA-70A	Antimony	0.003	-	U	Equipment blank contamination
92490942	DGWC-68A	Barium	-	-	J+	MS recovered above acceptance criteria
92496940	DGWA-53	Chloride	-	-	J+	MS/MSD recovered above acceptance criteria
92496940	DGWA-53	Fluoride	-	-	J+	MS/MSD recovered above acceptance criteria
92496940	DGWA-53	Sulfate	-	-	J+	MS/MSD recovered above acceptance criteria

Abbreviations:

RL : Reporting limit

MDC : Minimum detectable concentration

SDG : Sample delivery group

MS/MSD: Matrix spike/matrix spike duplicate

Qualifiers:

J+ : Estimated value, bias high

U : Non-detect result

APPENDIX A

LABORATORY ACCREDITATION



COMMONWEALTH of VIRGINIA

Department of General Services

Division of Consolidated Laboratory Services

*600 North 5th Street
Richmond, Virginia 23219-3691
(804) 648-4480
FAX (804) 692-0416*

06/10/2020

Craig Tronzo
Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville NC 28804

VELAP ID: 460222

Dear Craig Tronzo:

The Division of Consolidated Laboratory Services (DCLS) has accredited Pace Analytical Services, LLC - Asheville NC pursuant to the provisions of 1VAC30-46 and The NELAC Institute (TNI) 2009 Standard. Certificate number 10807 and the corresponding Scope of Accreditation are enclosed. This certificate expires 06/14/2021. The certificate must be conspicuously displayed in the laboratory along with the associated Scope of Accreditation.

Please note that your laboratory is required to notify the Virginia Environmental Laboratory Accreditation Program (VELAP) in writing of any changes in key accreditation criteria within 30 calendar days of the change per 1VAC30-46-90 A. This requirement includes changes in ownership, location, key personnel, and major instrumentation.

To maintain accreditation, the laboratory must continue to comply with 1VAC30-46. This includes ongoing satisfactory proficiency testing. The method checklists used by VELAP in the on-site assessment process are available upon request as a supplement to internal audits.

Please direct all correspondences and questions regarding accreditation to your laboratory's lead assessor, Ila Meyer-Fritzsche, at ila.meyer-fritzsche@dgs.virginia.gov or (804) 648-4480 x306.

Sincerely yours,

Cathy Westerman
Manager, Laboratory Certification Program

Enclosures
cc: Felicia Grogan



**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES**



Certifies that

**VA Laboratory ID#: 460222
Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville, NC 28804**

**Owner: PAS PARENT, LLC
Operator: PACE ANALYTICAL SERVICES, LLC
Responsible Official: FELICIA GROGAN**

Having met the requirements of 1 VAC 30-46 and
having been found compliant with the 2009 TNI Standard approved by The NELAC Institute
is hereby approved as an
Accredited Environmental Laboratory

As more fully described in the attached Scope of Accreditation

**Effective Date: June 15, 2020
Expiration Date: June 14, 2021
Certificate # 10807**

A handwritten signature in black ink that reads 'Denise M. Toney'.

**Denise M. Toney, Ph.D., HCLD
DGS Deputy Director for Laboratories**

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP)
Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.

Certificate Not Transferable

Surrender Upon Revocation



Commonwealth of Virginia
 Department of General Services
 Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10807

Pace Analytical Services, LLC - Asheville NC
 2225 Riverside Drive
 Asheville, NC 28804

Virginia Laboratory ID: 460222
 Effective Date: June 15, 2020
 Expiration Date: June 14, 2021

DRINKING WATER

METHOD	ANALYTE	PRIMARY
EPA 200.8 REV 5.4	COPPER	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1 A + C)	NITRATE AS N	VA
SM 2320 B-2011	ALKALINITY AS CaCO3	VA
SM 9223 COLISURE®	TOTAL COLIFORMS	VA

METHOD	ANALYTE	PRIMARY
EPA 200.8 REV 5.4	LEAD	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRITE AS N	VA
SM 9223 COLISURE®	ESCHERICHIA COLI	VA

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 1010	FLASHPOINT	VA
EPA 160.4	RESIDUE-VOLATILE	VA
EPA 180.1 REV 2	TURBIDITY	VA
EPA 200.7 REV 4.4	ANTIMONY	VA
EPA 200.7 REV 4.4	BARIUM	VA
EPA 200.7 REV 4.4	BORON	VA
EPA 200.7 REV 4.4	CALCIUM	VA
EPA 200.7 REV 4.4	COBALT	VA
EPA 200.7 REV 4.4	IRON	VA
EPA 200.7 REV 4.4	MAGNESIUM	VA
EPA 200.7 REV 4.4	MOLYBDENUM	VA
EPA 200.7 REV 4.4	POTASSIUM	VA
EPA 200.7 REV 4.4	SILICA AS SiO2	VA
EPA 200.7 REV 4.4	SODIUM	VA
EPA 200.7 REV 4.4	TIN	VA
EPA 200.7 REV 4.4	VANADIUM	VA
EPA 200.8 REV 5.4	ALUMINUM	VA
EPA 200.8 REV 5.4	ARSENIC	VA
EPA 200.8 REV 5.4	BERYLLIUM	VA
EPA 200.8 REV 5.4	CHROMIUM	VA
EPA 200.8 REV 5.4	COPPER	VA
EPA 200.8 REV 5.4	MANGANESE	VA
EPA 200.8 REV 5.4	NICKEL	VA
EPA 200.8 REV 5.4	SILVER	VA
EPA 200.8 REV 5.4	VANADIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	BORON	VA
EPA 200.8 REV 5.4 - EXTENDED	IRON	VA
EPA 200.8 REV 5.4 - EXTENDED	POTASSIUM	VA

METHOD	ANALYTE	PRIMARY
EPA 120.1	CONDUCTIVITY	VA
EPA 1631 E	MERCURY	VA
EPA 200.7 REV 4.4	ALUMINUM	VA
EPA 200.7 REV 4.4	ARSENIC	VA
EPA 200.7 REV 4.4	BERYLLIUM	VA
EPA 200.7 REV 4.4	CADMIUM	VA
EPA 200.7 REV 4.4	CHROMIUM	VA
EPA 200.7 REV 4.4	COPPER	VA
EPA 200.7 REV 4.4	LEAD	VA
EPA 200.7 REV 4.4	MANGANESE	VA
EPA 200.7 REV 4.4	NICKEL	VA
EPA 200.7 REV 4.4	SELENIUM	VA
EPA 200.7 REV 4.4	SILVER	VA
EPA 200.7 REV 4.4	THALLIUM	VA
EPA 200.7 REV 4.4	TITANIUM	VA
EPA 200.7 REV 4.4	ZINC	VA
EPA 200.8 REV 5.4	ANTIMONY	VA
EPA 200.8 REV 5.4	BARIUM	VA
EPA 200.8 REV 5.4	CADMIUM	VA
EPA 200.8 REV 5.4	COBALT	VA
EPA 200.8 REV 5.4	LEAD	VA
EPA 200.8 REV 5.4	MOLYBDENUM	VA
EPA 200.8 REV 5.4	SELENIUM	VA
EPA 200.8 REV 5.4	THALLIUM	VA
EPA 200.8 REV 5.4	ZINC	VA
EPA 200.8 REV 5.4 - EXTENDED	CALCIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	MAGNESIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	SODIUM	VA

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.



Commonwealth of Virginia
 Department of General Services
 Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10807

Pace Analytical Services, LLC - Asheville NC
 2225 Riverside Drive
 Asheville, NC 28804

Virginia Laboratory ID: 460222
 Effective Date: June 15, 2020
 Expiration Date: June 14, 2021

NON-POTABLE WATER

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 200.8 REV 5.4 - EXTENDED	TIN	VA
EPA 218.6 REV 3.3	CHROMIUM VI	VA
EPA 300.0 REV 2.1	BROMIDE	VA
EPA 300.0 REV 2.1	FLUORIDE	VA
EPA 300.0 REV 2.1	NITRATE/NITRITE	VA
EPA 300.0 REV 2.1	ORTHOPHOSPHATE AS P	VA
EPA 3005 A	PREP: ACID DIGESTION OF WATERS FOR TOTAL RECOVERABLE OR DISSOLVED METALS	VA
EPA 350.1 REV 2	AMMONIA AS N	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1 A + C)	NITRATE AS N	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRITE AS N	VA
EPA 420.4 REV 1 (AS LACHAT 10-210-00-1-X)	TOTAL PHENOLICS	VA
EPA 6010 D	ANTIMONY	VA
EPA 6010 D	BARIUM	VA
EPA 6010 D	BORON	VA
EPA 6010 D	CALCIUM	VA
EPA 6010 D	COBALT	VA
EPA 6010 D	IRON	VA
EPA 6010 D	LITHIUM	VA
EPA 6010 D	MANGANESE	VA
EPA 6010 D	NICKEL	VA
EPA 6010 D	SELENIUM	VA
EPA 6010 D	SILVER	VA
EPA 6010 D	STRONTIUM	VA
EPA 6010 D	TIN	VA
EPA 6010 D	VANADIUM	VA
EPA 6010 D - EXTENDED	SILICON	VA
EPA 6020 B	ANTIMONY	VA
EPA 6020 B	BARIUM	VA
EPA 6020 B	CADMIUM	VA
EPA 6020 B	CHROMIUM	VA
EPA 6020 B	COPPER	VA
EPA 6020 B	LEAD	VA
EPA 6020 B	MANGANESE	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 200.8 REV 5.4 - EXTENDED	TITANIUM	VA
EPA 245.1 REV 3	MERCURY	VA
EPA 300.0 REV 2.1	CHLORIDE	VA
EPA 300.0 REV 2.1	NITRATE AS N	VA
EPA 300.0 REV 2.1	NITRITE AS N	VA
EPA 300.0 REV 2.1	SULFATE	VA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	VA
EPA 351.2 REV 2 (AS LACHAT 10-107-06-2-D)	KJELDAHL NITROGEN - TOTAL (TKN)	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRATE/NITRITE	VA
EPA 365.1 REV 2 (AS LACHAT 10-115-01-1-E)	PHOSPHORUS, TOTAL	VA
EPA 6010 D	ALUMINUM	VA
EPA 6010 D	ARSENIC	VA
EPA 6010 D	BERYLLIUM	VA
EPA 6010 D	CADMIUM	VA
EPA 6010 D	CHROMIUM	VA
EPA 6010 D	COPPER	VA
EPA 6010 D	LEAD	VA
EPA 6010 D	MAGNESIUM	VA
EPA 6010 D	MOLYBDENUM	VA
EPA 6010 D	POTASSIUM	VA
EPA 6010 D	SILICA AS SIO2	VA
EPA 6010 D	SODIUM	VA
EPA 6010 D	THALLIUM	VA
EPA 6010 D	TITANIUM	VA
EPA 6010 D	ZINC	VA
EPA 6020 B	ALUMINUM	VA
EPA 6020 B	ARSENIC	VA
EPA 6020 B	BERYLLIUM	VA
EPA 6020 B	CALCIUM	VA
EPA 6020 B	COBALT	VA
EPA 6020 B	IRON	VA
EPA 6020 B	MAGNESIUM	VA
EPA 6020 B	MOLYBDENUM	VA

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 Expiration Date: June 14, 2021

NON-POTABLE WATER

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6020 B	NICKEL	VA
EPA 6020 B	SELENIUM	VA
EPA 6020 B	SODIUM	VA
EPA 6020 B	TIN	VA
EPA 6020 B	ZINC	VA
EPA 6020 B - EXTENDED	BORON	VA
EPA 6020 B - EXTENDED	STRONTIUM	VA
EPA 6020 B - EXTENDED	URANIUM	VA
EPA 7470 A	MERCURY	VA
EPA 9012 B	TOTAL CYANIDE	VA
EPA 9056 A	BROMIDE	VA
EPA 9056 A	FLUORIDE	VA
EPA 9056 A	NITRITE AS N	VA
EPA 9056 A	SULFATE	VA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	VA
LACHAT QUIKCHEM 10-204-00-1-X	CYANIDE	VA
SM 2340 B-2011	TOTAL HARDNESS AS CaCO3	VA
SM 2540 C-2011	RESIDUE-FILTERABLE (TDS)	VA
SM 2540 F-2011	RESIDUE-SETTLABLE	VA
SM 4500-CL ⁻ E-2011	CHLORIDE	VA
SM 4500-P E-2011	ORTHOPHOSPHATE AS P	VA
SM 5210 B-2011	BIOCHEMICAL OXYGEN DEMAND (BOD)	VA
SM 5220 D-2011	CHEMICAL OXYGEN DEMAND (COD)	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6020 B	POTASSIUM	VA
EPA 6020 B	SILVER	VA
EPA 6020 B	THALLIUM	VA
EPA 6020 B	VANADIUM	VA
EPA 6020 B - EXTENDED	BISMUTH	VA
EPA 6020 B - EXTENDED	LITHIUM	VA
EPA 6020 B - EXTENDED	TITANIUM	VA
EPA 7196 A	CHROMIUM VI	VA
EPA 9010 C	PREP: CYANIDE DISTILLATION	VA
EPA 9040 C	PH	VA
EPA 9056 A	CHLORIDE	VA
EPA 9056 A	NITRATE AS N	VA
EPA 9056 A	ORTHOPHOSPHATE AS P	VA
EPA 9056 A - EXTENDED	NITRATE/NITRITE	VA
EPA 9095 B	FREE LIQUID	VA
SM 2320 B-2011	ALKALINITY AS CaCO3	VA
SM 2540 B-2011	RESIDUE-TOTAL (TS)	VA
SM 2540 D-2011	RESIDUE-NONFILTERABLE (TSS)	VA
SM 3500-CR B-2011	CHROMIUM VI	VA
SM 4500-CN ⁻ E-2011	CYANIDE	VA
SM 4500-S2 ⁻ D-2011	SULFIDE	VA
SM 5210 B-2011	CARBONACEOUS BOD (CBOD)	VA
SM 5310 B-2011	TOTAL ORGANIC CARBON (TOC)	VA

SOLID AND CHEMICAL MATERIALS

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 1010 A	FLASHPOINT	VA
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	VA
EPA 3050 B	PREP: ACID DIGESTION OF SEDIMENTS, SLUDGES, AND SOILS	VA
EPA 6010 D	ANTIMONY	VA
EPA 6010 D	BARIUM	VA
EPA 6010 D	BORON	VA
EPA 6010 D	CALCIUM	VA
EPA 6010 D	COBALT	VA
EPA 6010 D	IRON	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	VA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	VA
EPA 6010 D	ALUMINUM	VA
EPA 6010 D	ARSENIC	VA
EPA 6010 D	BERYLLIUM	VA
EPA 6010 D	CADMIUM	VA
EPA 6010 D	CHROMIUM	VA
EPA 6010 D	COPPER	VA
EPA 6010 D	LEAD	VA

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SOLID AND CHEMICAL MATERIALS

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6010 D	MAGNESIUM	VA
EPA 6010 D	MOLYBDENUM	VA
EPA 6010 D	POTASSIUM	VA
EPA 6010 D	SILVER	VA
EPA 6010 D	STRONTIUM	VA
EPA 6010 D	TITANIUM	VA
EPA 6010 D	ZINC	VA
EPA 7471 B	MERCURY	VA
EPA 9060	TOTAL ORGANIC CARBON (TOC)	VA
EPA 9065	TOTAL PHENOLICS	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6010 D	MANGANESE	VA
EPA 6010 D	NICKEL	VA
EPA 6010 D	SELENIUM	VA
EPA 6010 D	SODIUM	VA
EPA 6010 D	THALLIUM	VA
EPA 6010 D	VANADIUM	VA
EPA 6010 D - EXTENDED	SILICON	VA
EPA 9045 D	PH	VA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	VA
EPA 9095 B	FREE LIQUID	VA



State of Florida
Department of Health, Bureau of Public Health Laboratories
This is to certify that



E87315

PACE ANALYTICAL SERVICES, LLC- ATLANTA GA
110 TECHNOLOGY PARKWAY
PEACHTREE CORNERS, GA 30092

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories

DRINKING WATER - MICROBIOLOGY, DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS, DRINKING WATER - SECONDARY INORGANIC CONTAMINANTS, NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - METALS, NON-POTABLE WATER - MICROBIOLOGY, SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY, SOLID AND CHEMICAL MATERIALS - METALS, SOLID AND CHEMICAL MATERIALS - MICROBIOLOGY

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: October 06, 2020 Expiration Date: June 30, 2021



A handwritten signature in blue ink, appearing to read "P. Lewandowski".

Patty A. Lewandowski, MBA, MT(ASCP)
Chief Bureau of Public Health Laboratories
DH Form 1697, 7/04

NON-TRANSFERABLE E87315-49-10/06/2020
Supersedes all previously issued certificates



Laboratory Scope of Accreditation

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State Laboratory ID: **E87315**

EPA Lab Code: **GA00051**

(770) 734-4200

E87315

Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Drinking Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Color	SM 2120 B	Secondary Inorganic Contaminants	NELAP	4/10/2002
Escherichia coli	SM 9223 B	Microbiology	NELAP	4/10/2002
Escherichia coli	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Heterotrophic plate count	SIMPLATE	Microbiology	NELAP	5/29/2012
Nitrate	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Orthophosphate as P	SM 4500-P E	Primary Inorganic Contaminants	NELAP	4/10/2002
pH	SM 4500-H+-B	Primary Inorganic Contaminants,Secondary Inorganic Contaminants	NELAP	4/10/2002
Residual free chlorine	SM 4500-Cl G	Primary Inorganic Contaminants	NELAP	11/4/2010
Total coliforms	SM 9223 B	Microbiology	NELAP	4/10/2002
Total coliforms	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Total nitrate-nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Total residual chlorine	SM 4500-Cl G	Primary Inorganic Contaminants	NELAP	11/4/2010
Turbidity	EPA 180.1	Secondary Inorganic Contaminants	NELAP	4/10/2002



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Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 200.7	Metals	NELAP	4/10/2002
Aluminum	EPA 200.8	Metals	NELAP	8/30/2004
Aluminum	EPA 6010	Metals	NELAP	7/1/2003
Aluminum	EPA 6020	Metals	NELAP	8/30/2004
Amenable cyanide	EPA 9010/9014	General Chemistry	NELAP	7/1/2003
Amenable cyanide	SM 4500-CN- G	General Chemistry	NELAP	10/15/2007
Antimony	EPA 200.7	Metals	NELAP	4/10/2002
Antimony	EPA 200.8	Metals	NELAP	8/30/2004
Antimony	EPA 6010	Metals	NELAP	7/1/2003
Antimony	EPA 6020	Metals	NELAP	8/30/2004
Arsenic	EPA 200.7	Metals	NELAP	4/10/2002
Arsenic	EPA 200.8	Metals	NELAP	8/30/2004
Arsenic	EPA 6010	Metals	NELAP	4/10/2002
Arsenic	EPA 6020	Metals	NELAP	8/30/2004
Barium	EPA 200.7	Metals	NELAP	4/10/2002
Barium	EPA 200.8	Metals	NELAP	8/30/2004
Barium	EPA 6010	Metals	NELAP	7/1/2003
Barium	EPA 6020	Metals	NELAP	8/30/2004
Beryllium	EPA 200.7	Metals	NELAP	4/10/2002
Beryllium	EPA 200.8	Metals	NELAP	8/30/2004
Beryllium	EPA 6010	Metals	NELAP	7/1/2003
Beryllium	EPA 6020	Metals	NELAP	8/30/2004
Biochemical oxygen demand	SM 5210 B	General Chemistry	NELAP	4/10/2002
Boron	EPA 200.7	Metals	NELAP	4/10/2002
Boron	EPA 200.8	Metals	NELAP	11/6/2014
Boron	EPA 6010	Metals	NELAP	7/1/2003
Boron	EPA 6020	Metals	NELAP	8/30/2004
Cadmium	EPA 200.7	Metals	NELAP	4/10/2002
Cadmium	EPA 200.8	Metals	NELAP	8/30/2004
Cadmium	EPA 6010	Metals	NELAP	4/10/2002
Cadmium	EPA 6020	Metals	NELAP	8/30/2004
Calcium	EPA 200.7	Metals	NELAP	4/10/2002
Calcium	EPA 200.8	Metals	NELAP	11/6/2014
Calcium	EPA 6010	Metals	NELAP	7/1/2003
Calcium	EPA 6020	Metals	NELAP	8/30/2004
Carbonaceous BOD (CBOD)	SM 5210 B	General Chemistry	NELAP	4/10/2002

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Issue Date: 10/6/2020

Expiration Date: 6/30/2021



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E87315

Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chromium	EPA 200.7	Metals	NELAP	4/10/2002
Chromium	EPA 200.8	Metals	NELAP	8/30/2004
Chromium	EPA 6010	Metals	NELAP	7/1/2003
Chromium	EPA 6020	Metals	NELAP	8/30/2004
Chromium VI	SM 3500-Cr B (20th/21st/22nd Ed.)/UV-VIS	General Chemistry	NELAP	7/28/2009
Cobalt	EPA 200.7	Metals	NELAP	4/10/2002
Cobalt	EPA 200.8	Metals	NELAP	8/30/2004
Cobalt	EPA 6010	Metals	NELAP	7/1/2003
Cobalt	EPA 6020	Metals	NELAP	8/30/2004
Color	SM 2120 B	General Chemistry	NELAP	4/10/2002
Copper	EPA 200.7	Metals	NELAP	4/10/2002
Copper	EPA 200.8	Metals	NELAP	8/30/2004
Copper	EPA 6010	Metals	NELAP	4/10/2002
Copper	EPA 6020	Metals	NELAP	8/30/2004
Corrosivity (pH)	EPA 9040	General Chemistry	NELAP	7/1/2003
Cyanide	SM 4500-CN E	General Chemistry	NELAP	10/15/2007
Escherichia coli	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Fecal coliforms	COLILERT®-18 (Fecal Coliforms)	Microbiology	NELAP	11/6/2014
Fecal coliforms	SM 9222 D	Microbiology	NELAP	2/21/2002
Hardness	SM 2340 B	General Chemistry	NELAP	7/28/2009
Hardness (calc.)	EPA 200.7	Metals	NELAP	6/6/2002
Heterotrophic plate count	SIMPLATE	Microbiology	NELAP	5/29/2012
Iron	EPA 200.7	Metals	NELAP	4/10/2002
Iron	EPA 200.8	Metals	NELAP	11/6/2014
Iron	EPA 6010	Metals	NELAP	7/1/2003
Iron	EPA 6020	Metals	NELAP	8/30/2004
Iron	SM 3500-Fe D (18th/19th Ed.)/UV-VIS	General Chemistry	NELAP	2/5/2002
Iron-(II) (Ferrous Iron)	SM 3500-Fe B (20th/21st Ed.)/UV-VIS	General Chemistry	NELAP	7/28/2009
Lead	EPA 200.7	Metals	NELAP	4/10/2002
Lead	EPA 200.8	Metals	NELAP	8/30/2004
Lead	EPA 6010	Metals	NELAP	4/10/2002
Lead	EPA 6020	Metals	NELAP	8/30/2004
Lithium	EPA 200.8	Metals	NELAP	10/6/2016

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(770) 734-4200

E87315

Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Lithium	EPA 6020	Metals	NELAP	10/6/2016
Magnesium	EPA 200.7	Metals	NELAP	4/10/2002
Magnesium	EPA 200.8	Metals	NELAP	11/6/2014
Magnesium	EPA 6010	Metals	NELAP	7/1/2003
Magnesium	EPA 6020	Metals	NELAP	8/30/2004
Manganese	EPA 200.7	Metals	NELAP	4/10/2002
Manganese	EPA 200.8	Metals	NELAP	8/30/2004
Manganese	EPA 6010	Metals	NELAP	7/1/2003
Manganese	EPA 6020	Metals	NELAP	8/30/2004
Mercury	EPA 245.1	Metals	NELAP	4/10/2002
Mercury	EPA 7470	Metals	NELAP	4/10/2002
Molybdenum	EPA 200.7	Metals	NELAP	4/10/2002
Molybdenum	EPA 200.8	Metals	NELAP	8/30/2004
Molybdenum	EPA 6010	Metals	NELAP	4/10/2002
Molybdenum	EPA 6020	Metals	NELAP	8/30/2004
Nickel	EPA 200.7	Metals	NELAP	4/10/2002
Nickel	EPA 200.8	Metals	NELAP	8/30/2004
Nickel	EPA 6010	Metals	NELAP	4/10/2002
Nickel	EPA 6020	Metals	NELAP	8/30/2004
Nitrate as N	EPA 353.2	General Chemistry	NELAP	4/17/2020
Nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	4/17/2020
Nitrite as N	EPA 353.2	General Chemistry	NELAP	4/17/2020
Orthophosphate as P	SM 4500-P E	General Chemistry	NELAP	4/10/2002
Oxygen, dissolved	ASTM D888-09C	General Chemistry	NELAP	11/6/2014
Oxygen, dissolved	SM 4500-O G	General Chemistry	NELAP	4/10/2002
pH	EPA 9040	General Chemistry	NELAP	7/1/2003
pH	SM 4500-H+-B	General Chemistry	NELAP	10/15/2007
Phosphorus, total	EPA 200.7	Metals	NELAP	9/27/2002
Phosphorus, total	EPA 6010	Metals	NELAP	7/1/2003
Potassium	EPA 200.7	Metals	NELAP	4/10/2002
Potassium	EPA 200.8	Metals	NELAP	11/6/2014
Potassium	EPA 6010	Metals	NELAP	4/10/2002
Potassium	EPA 6020	Metals	NELAP	8/30/2004
Residual free chlorine	SM 4500-Cl G	General Chemistry	NELAP	11/4/2010
Residue-filterable (TDS)	SM 2540 C	General Chemistry	NELAP	10/15/2007
Residue-nonfilterable (TSS)	SM 2540 D	General Chemistry	NELAP	10/15/2007

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Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Residue-settleable	SM 2540 F	General Chemistry	NELAP	10/15/2007
Residue-total	SM 2540 B	General Chemistry	NELAP	10/15/2007
Residue-volatile	SM 2540 E	General Chemistry	NELAP	10/6/2016
Selenium	EPA 200.7	Metals	NELAP	4/10/2002
Selenium	EPA 200.8	Metals	NELAP	8/30/2004
Selenium	EPA 6010	Metals	NELAP	4/10/2002
Selenium	EPA 6020	Metals	NELAP	8/30/2004
Silicon	EPA 200.7	Metals	NELAP	4/10/2002
Silicon	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 200.7	Metals	NELAP	4/10/2002
Silver	EPA 200.8	Metals	NELAP	8/30/2004
Silver	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 6020	Metals	NELAP	8/30/2004
Sodium	EPA 200.7	Metals	NELAP	4/10/2002
Sodium	EPA 200.8	Metals	NELAP	11/6/2014
Sodium	EPA 6010	Metals	NELAP	7/1/2003
Sodium	EPA 6020	Metals	NELAP	8/30/2004
Strontium	EPA 200.7	Metals	NELAP	9/27/2002
Strontium	EPA 6010	Metals	NELAP	7/1/2003
Strontium	EPA 6020	Metals	NELAP	8/30/2004
Thallium	EPA 200.7	Metals	NELAP	4/10/2002
Thallium	EPA 200.8	Metals	NELAP	8/30/2004
Thallium	EPA 6010	Metals	NELAP	7/1/2003
Thallium	EPA 6020	Metals	NELAP	8/30/2004
Tin	EPA 200.7	Metals	NELAP	4/10/2002
Tin	EPA 200.8	Metals	NELAP	11/6/2014
Tin	EPA 6010	Metals	NELAP	7/1/2003
Tin	EPA 6020	Metals	NELAP	8/30/2004
Titanium	EPA 200.7	Metals	NELAP	4/10/2002
Titanium	EPA 200.8	Metals	NELAP	11/6/2014
Titanium	EPA 6010	Metals	NELAP	7/1/2003
Titanium	EPA 6020	Metals	NELAP	8/30/2004
Total coliforms	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Total cyanide	EPA 9010/9014	General Chemistry	NELAP	7/1/2003
Total residual chlorine	SM 4500-Cl G	General Chemistry	NELAP	11/4/2010
Total, fixed, and volatile residue	SM 2540 G	General Chemistry	NELAP	9/27/2002

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E87315

Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Turbidity	EPA 180.1	General Chemistry	NELAP	4/10/2002
Vanadium	EPA 200.7	Metals	NELAP	4/10/2002
Vanadium	EPA 200.8	Metals	NELAP	8/30/2004
Vanadium	EPA 6010	Metals	NELAP	7/1/2003
Vanadium	EPA 6020	Metals	NELAP	8/30/2004
Zinc	EPA 200.7	Metals	NELAP	4/10/2002
Zinc	EPA 200.8	Metals	NELAP	8/30/2004
Zinc	EPA 6010	Metals	NELAP	4/10/2002
Zinc	EPA 6020	Metals	NELAP	8/30/2004



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Peachtree Corners, GA 30092

Matrix: **Solid and Chemical Materials**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 6010	Metals	NELAP	4/10/2002
Antimony	EPA 6010	Metals	NELAP	4/10/2002
Arsenic	EPA 6010	Metals	NELAP	4/10/2002
Barium	EPA 6010	Metals	NELAP	4/10/2002
Beryllium	EPA 6010	Metals	NELAP	4/10/2002
Boron	EPA 6010	Metals	NELAP	4/10/2002
Cadmium	EPA 6010	Metals	NELAP	4/10/2002
Calcium	EPA 6010	Metals	NELAP	4/10/2002
Chromium	EPA 6010	Metals	NELAP	4/10/2002
Cobalt	EPA 6010	Metals	NELAP	4/10/2002
Copper	EPA 6010	Metals	NELAP	4/10/2002
Fecal coliforms	SM 9222 D	Microbiology	NELAP	7/28/2009
Fixed Residue	SM 2540 G-2011	General Chemistry	NELAP	10/1/2020
Iron	EPA 6010	Metals	NELAP	4/10/2002
Lead	EPA 6010	Metals	NELAP	4/10/2002
Magnesium	EPA 6010	Metals	NELAP	4/10/2002
Manganese	EPA 6010	Metals	NELAP	4/10/2002
Mercury	EPA 7471	Metals	NELAP	4/10/2002
Molybdenum	EPA 6010	Metals	NELAP	4/10/2002
Nickel	EPA 6010	Metals	NELAP	4/10/2002
pH	EPA 9045	General Chemistry	NELAP	4/10/2002
Phosphorus, total	EPA 6010	Metals	NELAP	4/10/2002
Potassium	EPA 6010	Metals	NELAP	4/10/2002
Residue-total	SM 2540 G-2011	General Chemistry	NELAP	10/1/2020
Residue-volatile	SM 2540 G-2011	General Chemistry	NELAP	10/1/2020
Selenium	EPA 6010	Metals	NELAP	4/10/2002
Silicon	EPA 6010	Metals	NELAP	4/10/2002
Silver	EPA 6010	Metals	NELAP	4/10/2002
Sodium	EPA 6010	Metals	NELAP	7/9/2002
Strontium	EPA 6010	Metals	NELAP	4/10/2002
Thallium	EPA 6010	Metals	NELAP	4/10/2002
Tin	EPA 6010	Metals	NELAP	4/10/2002
Titanium	EPA 6010	Metals	NELAP	9/27/2002
Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311	General Chemistry	NELAP	4/10/2002
Vanadium	EPA 6010	Metals	NELAP	4/10/2002
Zinc	EPA 6010	Metals	NELAP	4/10/2002

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Issue Date: 10/6/2020

Expiration Date: 6/30/2021



APPENDIX B

WELL INSTALLATION REPORTS

November 23, 2020

Project No. 166849618

Mr. Joju Abraham, PG

Southern Company Services
241 Ralph McGill Blvd NE
Atlanta, GA 30308
jabraham@southernco.com

**PIEZOMETER INSTALLATION REPORT (B-99 THROUGH B-100)
GEORGIA POWER COMPANY – PLANT MCDONOUGH, SMYRNA, GEORGIA**

Dear Mr. Abraham,

Golder Associates Inc. (Golder) is submitting this *Piezometer Installation Report* to Southern Company Services, Inc. (SCS) and Georgia Power Company (GPC), which documents the construction of piezometers at Plant McDonough in Smyrna, Georgia (Site). Piezometer construction activities were performed in general accordance with the standards described in the Resource Conservation and Recovery Act (RCRA) Technical Enforcement Guidance Document (1986) and the Georgia Water Wells Standards Act of 1985. The installation of the piezometers was conducted under the oversight and direction of Timothy I. Richards, a Georgia Registered Professional Geologist (PG).

The field activities for this investigation were performed in July 2020. The field work consisted of the installation and development of two (2) piezometers. Metro conducted a survey of the installed piezometers between June and July 2020. A summary of the activities is presented below. Figure 1, Site Plan and Piezometer Location Map, presents the location of each of the newly installed piezometers.

Piezometer Drilling and Construction Activities

Piezometers B-99 and B-100 were drilled and installed by SCS at the Site in July 2020. SCS had a current and valid bond with the Water Wells Standards Advisory Council for the state of Georgia at the time of drilling and well installation. A copy of SCS's bond is included in Appendix A and the driller's name is provided on the boring/construction diagrams presented in Appendix B.

An experienced Golder geologist was present on site to oversee and record the drilling and piezometer construction under the supervision of a professional geologist registered to practice in Georgia (Timothy I. Richards). Drilling methods employed for borehole advancement were 4.25' Hollow Stem auger drilling techniques with split-spoon sampling for soil borings where applicable. The drilling equipment consisted of a full-sized CME 550 ATV-mounted drilling rig and 4.25-inch hollow stem augers (HSAs). Prior to use, and between boreholes, downhole equipment was steam cleaned.

As both piezometers were installed above bedrock, rock cores were not collected. Due to the shallow depth of the water table, B-99 was advanced to depth using only 4.25-inch HSAs. B-100 was advanced by 4.25-inch HSA, with

2-foot split spoon samples collected on 5-foot centers. Boring logs and piezometer construction records for the newly installed piezometers are included in Appendix B. The construction data are summarized in Table 1 and the locations of the piezometers are provided on Figure 1.

Piezometers were constructed within the boreholes using factory-cleaned and sealed Schedule 40 poly-vinyl chloride (PVC) products with flush-threaded fittings. Specifically, piezometer B-99 was constructed with a 5-foot section of 3-inch outer diameter (OD) and 2-inch inner diameter (ID), flush-threaded, 0.010-inch factory-slotted PVC U-Pack screens. Piezometer B-100 was constructed with a 10-foot section of 3-inch outer diameter (OD) and 2-inch inner diameter (ID), flush-threaded, 0.010-inch factory-slotted PVC U-Pack screens. The drillers filled the annulus of each U-Pack screen section with No. 1 filter sand. In each case, the screen was placed near the bottom of the borehole, with the remainder of the piezometer constructed from 10-foot sections of 2-inch ID, flush-threaded, PVC casing riser. A flush-threaded PVC end cap was placed on the bottom of each piezometer to provide a 0.4-foot sump/sediment trap. Piezometers B-99 was installed as a flush-mounted wells and extends approximately 2.52 inches above grade; B-100 was completed as a “stick-up” and extends approximately 31.44 inches above grade. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF)-rated.

Following placement of the screen and casing, the annular space in each borehole adjacent to the screen was filled with U.S. Standard Sieve size No. 1 filter pack sand as appropriate for the formation. The filter pack sand was placed into each borehole and extends approximately 2 feet above the depth of the top of the screen. Immediately following placement of the filter pack, each piezometer was pumped using a portable submersible pump until visibly clear water was discharged. If settling occurred during pumping, additional sand was placed so that the filter sand thickness was no less than 2 feet above the screen. A filter pack seal, composed of 2 to 3 feet of hydrated time-release 3/8” coated bentonite pellets, was then placed on top of the filter pack by slowly pouring the material down the boreholes tamping it into place. The bentonite was hydrated using potable water and allowed to cure for at least two hours prior to grouting the piezometers.

Following hydration of the bentonite, the remaining annular space was grouted with an AquaGuard® bentonite grout mixture to approximately 2 feet below ground surface using a tremie method. Based on information provided by the product manufacturer, AquaGuard® is a bentonite grout consisting of bentonite and additives that allow for a mixture of 30% solids by weight to facilitate grouting via tremie pipe, with additives that slow the bentonite curing so that proper placement can be achieved. B-99 surface piezometer surface completion consists of an 8-inch round flush mount with a 2-foot by 2-foot concrete pad. B-100 piezometer surface completion consists of a locked, aluminum protective casing and a 4-foot by 4-foot by 4-inch concrete pad with bollards. The annular space of the aluminum protective casing was filled with gravel to approximately 2 inches from top of PVC.

Piezometer Development Activities

The newly installed piezometers were developed in July 2020 in accordance with the Monitoring Well Development Procedures, dated March 2016, prepared by SCS. The piezometer screen intervals were surged and then pumped using a Reclaimer pump system. During development, water quality measurements of pH, temperature, specific conductance, and turbidity were periodically collected using field-calibrated water quality equipment after the piezometer responded to improving conditions. Development activities were conducted utilizing a SmarTroll® multimeter and a Lamotte 2020 turbidimeter, and for monitoring water quality measurements. Equipment calibration forms and development forms are included in Appendix B with development details summarized in Table 2.

As presented in Table 2, between approximately 290 gallons were removed from B-99 and approximately 600 gallons were removed from B-100 during development. During development, attempts were made for each piezometer to achieve a turbidity value below approximately 10 nephelometric turbidity units (NTUs). Water level measurements were collected using a decontaminated electronic water level indicator, referenced to a notch (or permanent marking) at the top of the casing and recorded to within 0.01 foot.

Piezometer Survey

The newly installed piezometers were surveyed in July 2020 by Metro Engineering & Surveying Co., Inc. (James R. Green). Surveyed locations and elevations are presented on the boring/construction diagrams and a site map showing the locations of the newly installed piezometers is presented on Figure 1. The certified well survey is attached as Appendix C.

We appreciate the opportunity to assist SCS and GPC with this project. Should you have any questions or require additional information, please contact the undersigned at (770) 496-1893.

Sincerely,

Golder Associates Inc.



Brian A. Steele, PG
Senior Project Geologist



Timothy I. Richards, PG
Associate, Senior Consultant



BAS/TIR

CC: Georgia Power Company - Plant McDonough
Ben Hodges, Geologist, Georgia Power Company
Dawn L. Prell - Golder
Rachel P. Kirkman, PG - Golder

Attachments: Figure 1 - Site Plan and Piezometer Location Map
Table 1 - Summary of Piezometer Construction Details
Table 2 - Summary of Piezometer Development Data
Appendix A - SCS Drilling Bond
Appendix B - Boring Logs/Construction Diagrams, Development Forms, and Calibration Logs
Appendix C – Survey Data




https://golderassociates.sharepoint.com/sites/11950g/Shared Documents/200_Reports_Technical Work/Well Installation Reports/B99-B100 Piezometer Installation 7.2020/Plant McDonough Piezometer_B-99-B-100_Install Report - Final.docx

FIGURE 1

**SITE PLAN AND PIEZOMETER
LOCATION MAP**



LEGEND

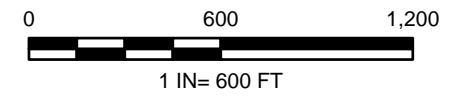
-  PIEZOMETER
-  PROPERTY BOUNDARY
-  PERMIT BOUNDARY

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE

REFERENCE

1. SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS SURVEYED BY METRO ENGINEERING



CLIENT
 GEORGIA POWER COMPANY
 PLANT MCDONOUGH
 PROJECT
 B-99 THROUGH B-100 PIEZOMETER INSTALLATION

TITLE
SITE PLAN AND PIEZOMETER LOCATION MAP

CONSULTANT	YYYY-MM-DD	2020-09-22
	PREPARED	BAS
	DESIGN	BAS
	REVIEW	DP/RK
	APPROVED	

Path: C:\Users\steele\Desktop\McDonough_GIS - Other\Well Reports\B-99 to B-100.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANSIB

TABLE 1

**SUMMARY OF PIEZOMETER
CONSTRUCTION DETAILS**

TABLE 1
SUMMARY OF PIEZOMETER CONSTRUCTION DETAILS
 Georgia Power Company - Plant McDonough
 Smyrna, Georgia

Borehole ID	LATITUDE	LONGITUDE	NAD 83 NORTHING	NAD 83 EASTING	ELEVATION TOP OF PVC (feet NAVD88)	ELEVATION GROUND SURFACE (feet NAVD88)	Rock Type	Total Depth (feet bgs)	Depth to Bedrock (feet bgs)	Screened Interval (feet bgs)	Core Available	Water Level (feet bTOC)	Date Installed
B-99	33.833247	-84.474573	1394524.2	2203084.5	782.39	782.6	NA	12.30	NA	7.3-12.3	NA	5.93	7/7/2020
B-100	33.821507	-84.477304	1390254.8	2202242.1	777.95	775.3	NA	45.00	NA	34.8-44.8	NA	34.78	7/8/2020

Notes:

- NAD - North American Datum
- NAVD88 - North American Vertical Datum 1988
- NA - Not Available
- bgs - Below ground surface
- bTOC - Below Top of Casing

TABLE 2

**SUMMARY OF PIEZOMETER
DEVELOPMENT DATA**

Table 2
Summary of Piezometer Development
Georgia Power Company - Plant McDonough
Smyrna, Georgia

Piezometer ID	Date Started	Time Started (hr:min)	Development Method	Measured Total Depth of Well (ft bTOC)	Initial Water level (ft bTOC)	Final Water Level (ft bTOC)	Volume of Casing (gal)	Total Volume Removed (gal)	pH (SU)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)
B-99	7/16/2020	17:45	Reclaimer Pump	11.93	3.55	6.40	1.4	291.6	6.06	1.052	21.71	2.11	65.28	4.53
B-100	7/14/2020	13:50	Reclaimer Pump	47.58	34.65	36.40	2.1	603.3	5.42	0.968	23.41	5.78	89.19	1.88

Notes:

hr:min - hours:minutes
ft bTOC - feet below Top of Casing
gal - gallons
SU - Standard Units
mS/cm - millisiemens per centimeter
°C - degrees Celcius
NTU - nephelometric turbidity units
mV - millivolts
mg/L - milligrams per liter
ORP - oxygen reduction potential
DO - dissolved oxygen

APPENDIX A

SCS DRILLING BONDS

CONTINUATION
CERTIFICATE

SAFECO Insurance Company of America

, Surety upon

a certain Bond No. **4993104**

dated effective June 30, 1987
(MONTH-DAY-YEAR)

on behalf of Southern Company Services, Inc.
(PRINCIPAL)

and in favor of Georgia Department of Natural Resources, Environmental Protection Division
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2019
(MONTH-DAY-YEAR)

and ending on June 30, 2020
(MONTH-DAY-YEAR)

Amount of bond Fifteen Thousand Dollars and 00/100 (\$15,000.00)

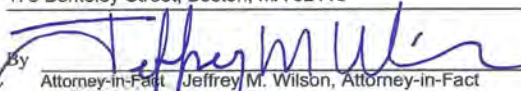
Description of bond Water Well Contractors & Drillers

Premium: \$100.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on 11/10/2020
(MONTH-DAY-YEAR)

SAFECO Insurance Company of America
175 Berkeley Street, Boston, MA 02116

By 
Attorney-in-Fact Jeffrey M. Wilson, Attorney-in-Fact

McGriff, Seibels & Williams, Inc.
Agent

2211 7th Avenue South, Birmingham, AL 35233
Address of Agent

(205) 252-9871

Telephone Number of Agent



This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

Certificate No: 8201221-016032

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American States Insurance Company is a corporation duly organized under the laws of the State of Indiana, that First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America are corporations duly organized under the laws of the State of New Hampshire (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Anna Childress; Richard H. Mitchell; Sam Audia; Mark W. Edwards, II; Alisa B. Ferris; Robert R. Freel; William M. Smith; Jeffrey M. Wilson

all of the city of Birmingham state of AL each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 8th day of May, 2019.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America



By: David M. Carey
David M. Carey, Assistant Secretary

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 8th day of May, 2019 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notaral Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-law and Authorizations of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, which are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorney-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 10th day of November, 2020.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

CONTINUATION
CERTIFICATE

SAFECO Insurance Company of America

, Surety upon

a certain Bond No. **4993104**

dated effective June 30, 1987
(MONTH-DAY-YEAR)

on behalf of Southern Company Services, Inc.
(PRINCIPAL)

and in favor of Georgia Department of Natural Resources, Environmental Protection Division
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2020
(MONTH-DAY-YEAR)

and ending on June 30, 2021
(MONTH-DAY-YEAR)


Amount of bond Fifteen Thousand Dollars and 00/100 (\$15,000.00)

Description of bond Water Well Contractors & Drillers

Premium: \$100.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on 11/10/2020
(MONTH-DAY-YEAR)
SAFECO Insurance Company of America
175 Berkeley Street, Boston, MA 02116

By 
Attorney-in-Fact Jeffrey M. Wilson, Attorney-in-Fact

McGriff, Seibels & Williams, Inc.
Agent
2211-7th Avenue South, Birmingham, AL 35233
Address of Agent
(205) 252-9871
Telephone Number of Agent



This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

Certificate No: 8201221-016032

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American States Insurance Company is a corporation duly organized under the laws of the State of Indiana, that First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America are corporations duly organized under the laws of the State of New Hampshire (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Anna Childress, Richard H. Mitchell, Sam Audia; Mark W. Edwards, II; Alisa B. Ferris; Robert R. Freel; William M. Smith; Jeffrey M. Wilson

all of the city of Birmingham state of AL each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 8th day of May, 2019.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

By: [Signature]
David M. Carey, Assistant Secretary



State of PENNSYLVANIA
County of MONTGOMERY ss

On this 8th day of May, 2019 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: [Signature]
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-law and Authorizations of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, which are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorney-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 10th day of November, 2020.



By: [Signature]
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

APPENDIX B

**BORING LOGS/CONSTRUCTION
DIAGRAMS, DEVELOPMENT
FORMS AND CALIBRATION LOGS**

RECORD OF BOREHOLE B-99

SHEET 1 of 1

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 12.30 ft
 LOCATION: Smyrna, GA

DRILL RIG: CME 550X
 DATE STARTED: 7/7/20
 DATE COMPLETED: 7/7/20

NORTHING: 1,394,524.2
 EASTING: 2,203,084.5
 GS ELEVATION: 782.6
 TOC ELEVATION: 782.39 ft

DEPTH W.L.: 5.93
 ELEVATION W.L.: 776.46
 DATE W.L.: 7/7/20
 TIME W.L.: 16:10

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE			REC
0	780	0.00 - 5.00 GRAVEL WITH SILT; non-native, brown to brown-tan with some red, silty, poorly graded gravel with some concrete fill, some organics, slightly weathered, non-cohesive, moist to wet, loose to compact (fill)	GW-GM		777.6	R1		1.03		<p>WELL CASING Interval: 0'-12'3" Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam</p> <p>WELL SCREEN Interval: 7'3"-12'3" Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC</p> <p>FILTER PACK Interval: 5'-12'3" Type: Filtersil std61 Quantity: 6 bags (50 lbs/bag)</p> <p>FILTER PACK SEAL Interval: 3'-5' Type: 3/8" Coated Pel-Plug Quantity: 1 bucket</p> <p>ANNULUS SEAL Interval: 0'-3' Type: Aquagaurd Bentonite Grout Quantity: 8 bags ~90 gal H2O</p> <p>WELL COMPLETION Pad: 4'x4'x4" Protective Casing: Aluminum</p> <p>DRILLING METHODS Soil Drill: 4.25-inch ID Hollow Stem Augers Rock Drill: N/A</p>
5	775	5.00 - 9.00 GRAVEL WITH SILT; non-native, brown to brown tan with red, silty, poorly graded gravel with some concrete fill, some organics, slightly weathered, non-cohesive, wet, loose to compact (fill)	GW-GM		5.00					
10	770	9.00 - 12.30 SILTY GRAVEL; brown, tan and red, non-cohesive, wet, loose to compact (mix of fill and saprolite)	GM		773.6					
12.30	770.3	Boring completed at 12.30 ft			770.3					

BOREHOLE RECORD_MCDONOUGH MASTER LIST_BACKUP_SURVEY UPDATED (5).GPJ_PIEDMONT.GDT_10/22/20

LOG SCALE: 1 in = 5 ft
 DRILLING COMPANY: SCS CFS
 DRILLER: S. Deuty

GA INSPECTOR: Chris Tidwell
 CHECKED BY: Brian Steele, PG
 DATE: 8/24/20



RECORD OF BOREHOLE B-100

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 45.00 ft
 LOCATION: Smyrna, GA

DRILL RIG: CME 550X
 DATE STARTED: 7/8/20
 DATE COMPLETED: 7/8/20

NORTHING: 1,390,254.8
 EASTING: 2,202,242.1
 GS ELEVATION: 775.3
 TOC ELEVATION: 777.95 ft

DEPTH W.L.: 34.78
 ELEVATION W.L.: 743.17
 DATE W.L.: 7/8/20
 TIME W.L.: 15:50

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES				MONITORING WELL DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS		
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in 140 lb hammer 30 inch drop			N-VALUE	REC
0	775	0.00 - 13.50 SILT-SILTY GRAVEL; mix of topsoil, residuum, fill, rip-rap boulders, soil; clayey silt, red-brown, micaceous, moist, moderately weathered, non-cohesive, moist, (backfilled cuttings)	ML-GM		761.8 13.50	R1	AUGER		0.00 11.00		Stick Up - Bentonite Grout Bentonite Pellets Sand Filter Pack 3" PVC 0.010 Slot	WELL CASING Interval: 0'-44'8" Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 34'8"-44'8" Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC FILTER PACK Interval: 32'2"-44'8" Type: Filtersil std61 Quantity: 6 bags (50 lbs/bag) FILTER PACK SEAL Interval: 30'-32'2" Type: 3/8" Coated Pel-Plug Quantity: 1 bucket ANNULUS SEAL Interval: 2'-30" Type: Aquagaurd Bentonite Grout Quantity: 8 bags ~90 gal H2O WELL COMPLETION Pad: 4'x4'x4" Protective Casing: Aluminum DRILLING METHODS Soil Drill: Auger Rock Drill: N/A
5	770											
10	765											
15	760	13.50 - 18.50 SILT; with sand, gravel and trace clay, red-brown, highly weathered, non-cohesive, dry to moist, loose to compact	ML		756.8 18.50	R2	SS	3-3-2	1.45 1.50			
20	755	18.50 - 23.50 SILTY SAND; heavy organic matter (wood), red-brown with black organic matter, moderately weathered, non-cohesive, dry, loose	SM		751.8 23.50	R3	SS	3-3-2	0.60 1.50			
25	750	23.50 - 28.50 CLAYEY SAND; some organic matter, brown, slightly weathered, cohesive, w<PL, soft	SC		746.8 28.50	R4	SS	2-1-2	1.60 1.50			
30	745	28.50 - 33.50 CLAYEY SAND WITH SILT; trace organic matter, brown with some red, micaceous, moderately weathered, cohesive, w>PL, firm to soft, moist to wet	SC-SM		741.8 33.50	R5	SS	1-2-1	1.50 1.50			
35	740	33.50 - 38.50 CLAYEY SAND; some silt, red with some brown, highly weathered trace mica, cohesive, w>PL, wet, soft to very soft, trace gravel	SC		736.8 38.50	R6	SS	WH-WH-2	1.40 1.50			
40		Log continued on next page	SC			R7	SS	2-6-22	1.30 1.50			

BOREHOLE RECORD: MCDONOUGH MASTER LIST_BACKUP_SURVEY_UPDATED (5).GPJ_PIEDMONT_GDT_10/28/20

LOG SCALE: 1 in = 5 ft
 DRILLING COMPANY: SCS CFS
 DRILLER: S. Deuty

GA INSPECTOR: Chris Tidwell
 CHECKED BY: Brian Steele, PG
 DATE: 8/24/20



Location resurveyed June - July 2020

RECORD OF BOREHOLE B-100

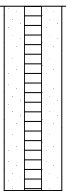
SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 45.00 ft
 LOCATION: Smyrna, GA

DRILL RIG: CME 550X
 DATE STARTED: 7/8/20
 DATE COMPLETED: 7/8/20

NORTHING: 1,390,254.8
 EASTING: 2,202,242.1
 GS ELEVATION: 775.3
 TOC ELEVATION: 777.95 ft

DEPTH W.L.: 34.78
 ELEVATION W.L.: 743.17
 DATE W.L.: 7/8/20
 TIME W.L.: 15:50

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES				MONITORING WELL DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in 140 lb hammer 30 inch drop	N-VALUE			REC
40	735	38.50 - 42.50 CLAYEY SAND; some gravel of gneiss (bottom 0.5'), black-brown with red, highly weathered, non-cohesive, wet, loose to compact <i>(Continued)</i>	SC	[Hatched]	732.8							<p>WELL CASING Interval: 0'-44'8" Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam</p> <p>WELL SCREEN Interval: 34'8"-44'8" Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC</p> <p>FILTER PACK Interval: 32'2"-44'8" Type: Filtersil std61 Quantity: 6 bags (50 lbs/bag)</p> <p>FILTER PACK SEAL Interval: 30'-32'2" Type: 3/8" Coated Pel-Plug Quantity: 1 bucket</p> <p>ANNULUS SEAL Interval: 2'-30' Type: Aquagaurd Bentonite Grout Quantity: 8 bags ~90 gal H2O</p> <p>WELL COMPLETION Pad: 4'x4'x4" Protective Casing: Aluminum</p> <p>DRILLING METHODS Soil Drill: Auger Rock Drill: N/A</p>
		42.50 - 45.00 CLAYEY SAND; some gravel, red with black and brown, highly weathered, cohesive, w~PL, firm to soft, micaceous schist gravel	SC	[Hatched]	42.50	R8	SS	4-5-12	0.00	1.50		
45	730	Boring completed at 45.00 ft		730.3								
50	725											
55	720											
60	715											
65	710											
70	705											
75	700											
80												

BOREHOLE RECORD_MCDONOUGH MASTER LIST_BACKUP_SURVEY UPDATED (5).GPJ_PIEDMONT.GDT_10/28/20

LOG SCALE: 1 in = 5 ft
 DRILLING COMPANY: SCS CFS
 DRILLER: S. Deuty

GA INSPECTOR: Chris Tidwell
 CHECKED BY: Brian Steele, PG
 DATE: 8/24/20



WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166849618
 WELL DIA (in) 2
 DEVELOPED BY J WAGUESPACK
 STARTED DEVEL 07/16/20 17:45
 DATE TIME
 WL BEFORE DEVEL 3.55 07/16/17:30
 WL DATE TIME
 WELL DEPTH BEFORE DEVEL 11.93
 STANDING WATER COLUMN (FT) 8.38
 SCREEN LENGTH 6.93-11.93

WELL ID: B-99
 WELL DIA (in) 2
 DATE OF INSTALL 07/21 17:20
 COMPLETED DEVEL 07/21 17:20
 DATE TIME
 WL AFTER DEVEL 6.40 07/21 17:13
 WL DATE TIME
 WELL DEPTH AFTER DEVEL 11.93
 STANDING WELL VOLUME 1.37 gal
 DRILLING WATER LOSS gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS							PUMP FROM BOTTOM REMARKS
				pH (S.U.)	Sp Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	
07/16/17:50	3.5		9.55	6.12	1100.3	21.80	>1000	GRAY	2.26	90.9	3" SURGING
17:55	5		TOP	6.16	1190.2	20.82	>1000	GRAY	3.82	77.1	RECHARGING
18:20	5		4.35								SURGING
18:25	7.5		9.1	6.23	1093.1	20.93	>1000	GRAY	5.54	78.4	
18:30	10		TOP	6.22	1099.5	20.68	>1000	GRAY	5.72	73.2	
07/17	-		3.75								
09:20	10		3.75	7.46	1051.6	22.33	>1000	GRAY	4.09	57.6	3" SURGING
09:25	15		TOP	6.40	1063.7	20.99	>1000	GRAY	5.08	77.0	RECHARGING
09:40	15		4.5	6.13	1040.5	22.51	>1000	GRAY	4.37	77.5	SURGING
09:47	20		TOP	6.13	1063.4	20.88	>1000	GRAY	5.64	73.0	RECHARGING
10:00	20		4.5	6.10	1062.4	20.90	>1000	GRAY	5.52	72.7	
10:07	25		TOP	6.08	1064.1	20.95	>1000	GRAY	5.33	72.6	RECHARGE
10:20			4.5	6.05	1056.4	22.46	>1000	GRAY	5.32	70.8	SURGING
10:27	30		TOP	6.09	1050.1	20.98	>1000	GRAY	5.25	75.2	RECHARGE
10:38			4.5	6.12	1048.4	21.89	>1000	GRAY	5.53	74.4	SURGING
10:45	35		TOP	6.08	1049.4	20.90	>1000	GRAY	5.39	75.2	RECHARGE
10:57			4.5	6.08	1042.7	21.44	>1000	GRAY	4.90	74.5	SURGING
11:05	40		TOP	6.08	1046.2	20.86	>1000	GRAY	5.30	75.2	RECHARGE
11:17			4.5	6.10	1044.5	21.36	>1000	GRAY	4.98	74.4	SURGING
11:26	45		TOP	6.09	1061.6	20.64	>1000	GRAY	5.31	70.1	RECHARGE
11:40			4.5	6.12	1051.5	21.18	>1000	GRAY	4.37	67.9	SURGING
11:48	50		TOP	6.13	1046.4	20.82	>1000	GRAY	5.31	72.1	R
11:57			4.5	6.14	1038.5	21.26	>1000	GRAY	4.98	72.4	S
12:06	55		TOP	6.11	1048.4	20.80	>1000	GRAY	5.50	72.6	R
12:17			4.5	6.12	1043.5	21.44	>1000	GRAY	5.37	73.0	S
12:24	60		TOP	6.18	1049.9	20.88	>1000	GRAY	6.10	69.5	R
12:37			4.5	6.22	1044.9	21.80	>1000	GRAY	5.03	62.6	S
12:47	65		TOP	6.18	1058.9	20.78	>1000	GRAY	5.41	63.1	R
13:01			4.5	6.13	1058.7	21.67	>1000	GRAY	5.12	64.5	S
13:09	70		TOP	6.22	1053.9	21.17	>1000	GRAY	6.20	62.1	R
13:20			4.5	6.27	1040.5	22.89	>1000	GRAY	4.36	66.9	S
13:29	75		TOP	6.17	1056.9	21.06	>1000	GRAY	5.90	63.0	R
13:41			4.5	6.21	1039.7	22.79	>1000	GRAY	4.98	69.7	S
13:50	80		TOP	6.16	1068.2	20.91	>1000	GRAY	5.79	62.1	R
= TOTAL VOLUME REMOVED (gal)											

DEVELOPMENT METHOD: RECLAIMER + SURGING

NOTES: TOP = TOP OF PUMP

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166849618
 WELL DIA (in) 2
 DEVELOPED BY J WAGUESPACK
 STARTED DEVEL _____
 DATE / TIME _____
 W.L. BEFORE DEVEL _____
 WL / DATE / TIME _____
 WELL DEPTH: BEFORE DEVEL _____
 STANDING WATER COLUMN (FT) _____
 SCREEN LENGTH _____

WELL ID: B-99
 WELL DIA (in) 2
 DATE OF INSTALL _____
 COMPLETED DEVEL _____
 DATE / TIME _____
 WL AFTER DEVEL _____
 WL / DATE / TIME _____
 WELL DEPTH: AFTER DEVEL _____
 STANDING WELL VOLUME _____ gal
 DRILLING WATER LOSS _____ gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS								PUMP FROM BOTTOM REMARKS
				pH (s.u.)	Sp Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
07/17 14:06	80		4.5	6.15	1059.5	21.40	71000	GRAY	4.95	59.7	3" SURGING	
14:15	85		TOP	6.20	1062.4	20.91	71000	GRAY	6.07	56.2	RECHARGE	
14:30			4.5	6.22	1047.4	22.15	71000	GRAY	5.10	64.5	SURGING	
14:40	90		TOP	6.22	1060.0	21.09	71000	GRAY	6.32	56.7	R	
14:56			4.5	6.18	1051.1	21.47	71000	GRAY	5.47	57.2	S	
15:05	95		TOP	6.22	1067.0	20.95	71000	GRAY	6.22	52.8	R	
15:21			4.5	6.29	1048.6	22.38	71000	GRAY	4.96	61.1	S	
15:30	100		TOP	6.25	1053.9	21.00	71000	GRAY	6.42	56.8	R	
15:42			4.5	6.27	1056.6	21.28	71000	GRAY	5.62	58.0	S	
15:52	105		TOP	6.22	1072.1	20.77	71000	GRAY	6.01	53.3	R	
16:04		Dev	PAUSED - EQUIP ISSUES									
16:42			3.7	6.22	1052.8	22.29	71000	GRAY	5.32	45.9	S	
16:50	110		TOP	6.28	1057.0	20.98	71000	GRAY	6.36	46.2	R	
17:07			4.1	6.28	1057.0	21.67	71000	GRAY	4.94	46.6	S	
17:17	115		TOP	6.29	1066.4	20.86	71000	GRAY	6.34	45.6	R	
17:22			4.5	6.28	1064.5	21.46	71000	GRAY	5.15	45.4	S	
17:40	120		TOP	6.29	1060.6	20.86	71000	GRAY	6.34	45.7	R	
17:53			4.5	6.29	1061.4	21.49	71000	GRAY	5.23	45.9	S	
18:08	125		TOP	6.33	1064.4	21.35	71000	GRAY	6.47	42.0	R	
07/20 08:57	125		3.80	-	-	-	71000	GRAY	-	-	SURGING	
09:06	130		TOP	-	-	-	71000	GRAY	-	-	RECHARGE	
09:17			4.5	6.18	1092.0	21.73	71000	GRAY	4.32	60.0	S	
09:28	135		TOP	6.14	1083.4	21.22	71000	GRAY	6.21	55.1	R	
09:50			3.7	6.15	1050.0	22.38	71000	GRAY	4.90	52.2	S	
10:02	140		TOP	6.14	1077.0	21.36	71000	GRAY	6.14	50.1	R	
10:18			4.5	6.16	1053.8	22.30	71000	GRAY	5.04	49.9	S	
10:28	145		TOP	6.17	1079.6	21.27	71000	GRAY	6.33	45.6	R	
10:47			4.5	6.19	1078.9	23.30	71000	GRAY	5.16	44.7	S	
10:56	150		TOP	6.15	1079.6	21.08	71000	GRAY	6.43	45.4	R	
11:13			4.5	6.19	1047.3	23.32	71000	GRAY	6.49	42.8		
11:23	155		TOP	6.17	1061.2	21.17	71000	GRAY	6.56	47.3	R	
11:41			4.5	6.21	1049.5	22.20	71000	GRAY	4.80	44.0		
11:50	160		TOP	6.21	1066.0	21.18	71000	GRAY	6.53	44.1	R	
12:05			4.5	6.21	1050.1	22.69	71000	GRAY	4.68	43.0		
		= TOTAL VOLUME REMOVED (gal)										

DEVELOPMENT METHOD: RECLAIMER + SURGING
 NOTES: TOP = TOP OF PUMP

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166849618
 WELL DIA (in) 2
 DEVELOPED BY J WAGUESPACIC
 STARTED LEVEL _____
 DATE / TIME _____
 WL BEFORE DEVEL _____
 WL DATE TIME _____
 WELL DEPTH BEFORE DEVEL _____
 STANDING WATER COLUMN (FT) _____
 SCREEN LENGTH _____

WELL ID: B-99
 WELL DIA (in) 2
 DATE OF INSTALL _____
 COMPLETED LEVEL _____
 DATE / TIME _____
 WL AFTER DEVEL _____
 WL DATE TIME _____
 WELL DEPTH AFTER DEVEL _____
 STANDING WELL VOLUME _____ gal
 DRILLING WATER LOSS _____ gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS								PUMP FROM BOTTOM REMARKS
				pH (u)	Sp Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
07/20 12:13	165		TOP	6.19	1058.7	21.08	33.7	murky	6.30	46.1	3", RECLAIMING	
12:29			4.5	6.20	1051.6	22.42	7.14	CLR	7.77	46.9	SURGING	
12:40	170		TOP	6.21	1061.7	21.25	71000	GRAY	6.73	46.3	RECLAIMING	
12:57			4.5	6.23	1040.8	22.17	71000	GRAY	5.20	49.1	SURGING	
13:07	175		TOP	6.22	1061.9	21.22	71000	GRAY	6.91	46.9	R	
13:33			4.5	6.25	1044.7	22.34	71000	GRAY	4.66	45.2		
13:42	180		TOP	6.23	1067.8	20.91	71000	GRAY	6.87	43.8	R	
14:05			4.5	6.24	1055.4	21.31	71000	GRAY	5.00	45.8		
14:15	185		TOP	6.26	1067.7	20.92	51.6	murky	7.04	42.2	R	
14:40			4.5	6.25	1054.2	21.44	71000	GRAY	5.95	44.7	SURGING	
14:51	190		TOP	6.30	1066.0	21.08	71000	GRAY	7.28	39.3	R	
15:19			4.5	6.32	1050.2	22.65	21.0	murky	6.71	41.9	S	
15:28	195		TOP	6.26	1061.5	20.96	71000	GRAY	7.32	40.6	R	
15:55			4.5	6.31	1050.8	21.62	71000	GRAY	6.18	39.0	S	
16:02	200		TOP	6.27	1063.1	21.17	71000	GRAY	6.78	41.0	R	
16:27			4.5	6.30	1053.0	21.23	18.0	murky	6.60	51.5	SURGING	
16:37	205		TOP	6.28	1067.5	22.15	71000	GRAY	7.01	42.3	R	
17:01			4.5	6.28	1063.9	22.30	71000	GRAY	6.89	45.5		
17:09	210		TOP	6.27	1059.0	21.53	71000	GRAY	6.81	43.3	R	
17:33			4.5	6.50	1027.3	22.82	71000	GRAY	5.38	52.5	S	
17:42	215		TOP	6.29	1062.0	21.22	70000	GRAY	6.89	47.6	R	
18:10			4.5	6.31	1046.6	22.78	71000	GRAY	5.46	43.0	S	
18:18	220		TOP	6.28	1060.8	21.08	71000	GRAY	6.85	44.8	R	
07/21 08:30			3.82				71000	GRAY			SURGING	
08:39	225		TOP				71000	GRAY			RECLAIMING	
09:01			4.5	7.20	1043.6	21.79	71000	GRAY	5.39	57.3	S	
09:08	230		TOP	6.43	1062.2	20.91	71000	GRAY	6.76	63.4	R	
09:31			4.5	6.08	1051.2	35.6	21.23	murky	6.35	66.6	SURGING	
09:40	235		TOP	6.08	1066.1	21.37	71000	GRAY	6.77	59.5	R	
10:04			4.5	6.12	1039.1	22.19	75.7	murky	5.35	58.0	S	
10:14	240		TOP	6.13	1062.7	21.40	71000	GRAY	6.87	53.8	R	
10:41			4.5	6.14	1042.5	22.29	26.1	murky	6.17	50.8	S	
10:53	245		TOP	6.18	1058.6	21.62	70000	GRAY	7.10	47.5	R	
11:19			4.5	6.29	1017.8	22.65	13.7	CLR	5.67	56.5	S	
				= TOTAL VOLUME REMOVED (gal)								

DEVELOPMENT METHOD: RECLAIMER + SURGING

NOTES: TOP = TOP OF PUMP

166849618
J WAGNERPACK

B-99

PAGE 4/4

	Vol REM.	DTW	pH	SP. COND.	TEMP	NTU	COLOR	RDO	ORP	PUMP FROM BOTTOM + NOTES
07/21/20 11:30	250	TOP	6.19	1056.0	21.75	7100	GRAY	6.95	49.9	3', SURGING RECHARGE
11:55		4.5	6.28	1001.1	23.16	15.5	CLR	5.12	62.9	SURGING
12:07	255	TOP	6.14	1051.9	21.80	42.2	GRAY	6.54	56.1	RECHARGE
12:32		4.5	6.28	1007.4	23.10	15.3	CLR	5.15	66.2	S
12:41	260	TOP	6.14	1049.7	21.63	40.0	MURKY	6.64	59.9	R
13:04		4.5	6.25	1016.6	22.88	28.4	MURKY	5.41	63.6	S
13:14	265	TOP	6.14	1049.0	21.39	26	MURKY	6.66	60.6	R
13:41		4.5	6.16	1035.7	22.24	32.5	MURKY	5.73	57.6	S
13:50	270	TOP	6.18	1050.0	21.97	19	MURKY	7.02	53.9	R
14:18		4.5	6.40	1018.0	23.93	45.7	MURKY	4.77	62.7	
14:27	275	TOP	6.18	1048.1	21.43	20.7	MURKY	6.76	58.7	R
14:54		4.5	6.35	1020.1	22.52	14.7	CLR	5.50	67.5	
15:05	280	TOP	6.24	1050.4	21.35	23.4	MURKY	7.12	55.8	R
15:33		4.5	6.39	1014.9	22.83	23.0	MURKY	4.94	67.6	
15:43	285	TOP	6.24	1049.6	21.28	13.0	CLR	7.07	58.5	R
16:12		4.5	6.23	1038.7	21.98	9.2	CLR	5.13	55.3	
16:21	290	TOP	6.20	1048.4	21.51	4.3	CLR	6.86	55.0	R
16:50		4.5								RECHARGED. BEGIN LOW FLOW DEV
17:20	DEV									COMPLETE + 1.6 GAL
										291.6 GAL PURGED TOTAL

Product Name: Low-Flow System

Date: 2020-07-21 17:14:48

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type LDPE
Tubing Diameter .5 in
Tubing Length 9.5 ft

Pump placement from TOC 9.5 ft

Well Information:

Well ID B-99
Well diameter 2 in
Well Total Depth 11.93 ft
Screen Length 5 ft
Depth to Water 3.8 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4568038 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 31.2 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:58:41	300.10	22.10	6.16	1050.54	4.34	5.80	5.32	55.10
Last 5	17:03:41	600.02	21.84	6.10	1051.73	2.58	6.10	4.67	59.72
Last 5	17:08:41	900.01	21.73	6.07	1052.59	2.38	6.20	4.52	62.97
Last 5	17:13:41	1200.00	21.71	6.06	1052.17	2.11	6.40	4.53	65.28
Last 5									
Variance 0			-0.26	-0.06	1.20			-0.65	4.62
Variance 1			-0.12	-0.03	0.86			-0.14	3.25
Variance 2			-0.01	-0.01	-0.43			0.00	2.30

Notes

Development

Grab Samples

MONITORING WELL INSTALLATION LOG

JOB NO. <u>106549618</u>	PROJECT <u>Plant McDonough B99-B100 Justice</u>	WELL NO. <u>B-100</u>	SHEET <u>1</u> OF <u>1</u>
GA INSP. <u>CAT</u>	DRILLING METHOD <u>Auger + Split Spoon</u>	GROUND ELEV. <u>TBD</u>	WATER DEPTH _____
WEATHER <u>Sunny ~85°F</u>	DRILLING COMPANY <u>SES CFS</u>	COLLAR ELEV. <u>TBD</u>	DATE/TIME _____
TEMP. _____	DRILL RIG <u>ONE SSSX</u>	DRILLER <u>S. Rini</u>	STARTED <u>08:10/7-8-20</u>
			COMPLETED <u>11:10/7-8-20</u>

MATERIALS INVENTORY			
WELL CASING <u>2</u> in. dia. I.F.	WELL SCREEN <u>2</u> in. dia. <u>10</u> I.F.	BENTONITE SEAL <u>3/8" coated Pol-Plug</u>	
CASING TYPE <u>Schedule 40 PVC</u>	SCREEN TYPE <u>Schedule 40 PVC</u>	INSTALLATION METHOD <u>tremie</u>	
JOINT TYPE <u>screw fit w/ rubber gaskets</u>	SLOT SIZE <u>0.010 in</u>	FILTER PACK QTY <u>6 bags (50 lbs/bag)</u>	
GROUT QUANTITY <u>8 bags + ~90 gal H₂O</u>	CENTRALIZERS <u>not used</u>	FILTER PACK TYPE <u>Filter-Sil 01c Sand</u>	
GROUT TYPE <u>Auger grout Bentonite Grout</u>	DRILLING MUD TYPE <u>NA</u>	INSTALLATION METHOD <u>manure</u>	

ELEV./DEPTH	SOIL/ROCK DESCRIPTION	WELL SKETCH	INSTALLATION NOTES
5			
0.0	GROUND SURFACE		Shick up: ~3'
5			GROUT: 8 bags Auger grout + ~90 gal H ₂ O from surface to 30' BGS
10			
15			Bentonite Seal: 1 bucket Pol Plug 3/8" coated pellets from 32'2" to 30' BGS
20			
25			
30			SAND 6 bags (50 lbs/bag) Filter-Sil 01c Sand from 44'8" to 32'2" BGS
35			
40			Screen: 44'8" to 31'8" BGS
45			
	Blk Limestone ~ 44'8"	<p>The well sketch is a vertical cross-section of the well. It shows a casing labeled 'PVC' extending from the ground surface down to approximately 44 feet. At the bottom of the casing, there is a 'Screwed Pattern' section. Above this, there is a 'Filter' section containing 'Sand'. Below the filter is a 'Bentonite Seal' section. The diagram is annotated with 'Grout' at the top and 'Bentonite Seal' and 'Filter Sand' on the sides. The depth scale on the left indicates that the grout is placed from 0 to 30 feet, the bentonite seal is from 30 to 32 feet 2 inches, and the filter sand is from 32 feet 2 inches to 44 feet 8 inches.</p>	
			WELL DEVELOPMENT NOTES

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166849618
 WELL DIA (in) 2
 DEVELOPED BY J. WAGUESPACK
 STARTED DEVEL 07/14/20 13:55
 DATE TIME
 W.L. BEFORE DEVEL 31.65 07/14 13:05
 WL DATE TIME
 WELL DEPTH BEFORE DEVEL 47.58
 STANDING WATER COLUMN (FT.) 12.93
 SCREEN LENGTH 37 - 47

WELL ID: B-100
 WELL DIA (in) 2
 DATE OF INSTALL
 COMPLETED DEVEL 07/16 16:55
 DATE TIME
 WL AFTER DEVEL 36.4 07/16 16:55
 WL DATE TIME
 WELL DEPTH AFTER DEVEL 47.58
 STANDING WELL VOLUME 2.11 gal
 DRILLING WATER LOSS gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS							PUMP FROM BOTTOM - ft	REMARKS
				pH (s.u.)	Sp. Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
07/14/14:00	-	24 min	37.50	5.53	1011.5	23.45	21000	BR0	3.16	71.5	3"	SURGING
14:05	5	0.5 min	38.00	5.37	1012.5	21.87	21000	BR0	0.76	71.3		
14:10	7.5		38.6	5.37	1002.9	21.76	21000	BR0	0.64	72.7		SURGING
14:20	12.5		39.0	5.38	988.3	21.69	21000	BR0	0.61	70.5		
14:30	17.5		39.3	5.39	978.7	21.46	70.9	TAN	0.55	68.6		SURGING
14:40	22.5		39.4	5.40	1003.8	21.46	78.2	TAN	0.54	66.6		SURGING
14:50	27.5		39.4	5.41	987.6	21.49	65.9	TAN	0.59	66.3		SURGING
15:00	32.5		39.7	5.41	975.1	21.49	21000	BR0	0.89	67.7		SURGING
15:10	37.5		39.7	5.41	967.7	21.44	21000	BR0	0.59	67.3		
15:20	42.5		39.7	5.41	964.9	21.44	21000	BR0	0.55	68.2		
15:30	47.5		39.5	5.41	973.4	21.44	76.3	TAN	0.56	66.6		
15:40	52.5		39.6	5.41	970.7	21.46	78.2	TAN	0.59	66.7		
15:50	57.5		39.6	5.42	970.8	21.41	72.2	TAN	0.86	66.9		
16:00	62.5		38.8	5.42	973.4	21.44	65.4	TAN	0.61	66.3		
16:10	67.5		39.0	5.43	972.5	21.35	28.5	CLR	0.93	65.2		→ 5' SURGING
16:20	72.5		39.9	5.72	993.2	21.53	21000	BR0	6.66	57.8		SURGING
16:30	77.5		40.6	5.78	968.3	21.62	21000	BR0	7.06	58.7		
16:40	82.5		40.6	5.81	966.7	21.40	83.6	TAN	7.19	59.6		
16:50	87.5		40.3	5.81	969.5	21.53	84.9	TAN	7.78	55.8		PASING FOR RECHARGE
16:55	-		35.0	RESUME DEV	-	SURGE ENTIRE SCREEN						
17:00	90		38.6	5.81	976.2	21.81	21000	BR0	7.15	59.9		SURGING
17:10	95		36.6	5.70	976.6	22.24	21000	BR0	7.00	57.8		REG. → 40/20 CYCLE
17:20	100		35.6	5.71	975.3	22.42	21000	BR0	6.90	58.0		SURGING
17:30	105		35.5	5.90	977.2	22.74	21000	BR0	6.75	58.5		
17:40	110		36.0	5.89	980.0	22.96	21000	BR0	6.55	60.0		
17:50	115		35.7	5.82	974.4	23.12	21000	BR0	6.15	65.1		
18:00	120		35.7	5.93	983.0	22.12	21000	BR0	6.51	59.2		
18:10	125		35.85	5.91	981.5	22.73	21000	BR0	6.67	59.3		
18:20	130		35.8	5.90	981.7	23.05	21000	BR0	6.66	59.0		
18:30	135		35.8	5.92	981.0	23.14	21000	BR0	6.80	58.1		
18:40	140		35.8	5.92	981.3	23.18	21000	BR0	6.83	57.3		
18:50	145		35.8	5.92	980.4	23.14	21000	BR0	6.82	57.2		
CONTINUED ON NEXT PAGE												
* TOTAL VOLUME REMOVED (gal)												

DEVELOPMENT METHOD: RECLAIMER + SURGING

NOTES:

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166849618
 WELL DIA (in) 2
 DEVELOPED BY JWAGUESPACK
 STARTED LEVEL _____
 DATE / TIME _____
 W.L. BEFORE DEVEL _____
 WL DATE TIME _____
 WELL DEPTH BEFORE DEVEL _____
 STANDING WATER COLUMN (FT) _____
 SCREEN LENGTH _____

WELL ID: B-100
 WELL DIA (in) 2
 DATE OF INSTALL _____
 COMPLETED LEVEL _____
 DATE / TIME _____
 WL AFTER DEVEL _____
 WL DATE TIME _____
 WELL DEPTH AFTER DEVEL _____
 STANDING WELL VOLUME _____ gal
 DRILLING WATER LOSS _____ gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS							REMARKS	
				pH (s.u.)	Sp Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
07/15-14:45	320	0.5	35.4	6.08	1082.5	22.69	110	TAN	6.96	32.4	8'	
14:55	325		35.2	6.10	1073.0	22.78	65.6	TAN	6.93	31.4		
15:05	330		35.5	6.03	1070.8	23.19	43.8	Murky	6.36	36.6	pump -> 3", surging	
15:15	335		35.5	6.00	1057.1	23.50	>1000	BRO	6.33	40.9		
15:25	340		35.7	5.94	1065.7	23.21	>1000	BRO	6.09	47.4	REG -> 20/10 clog	
15:35	345		35.8	5.85	1077.7	22.48	>1000	BRO	5.64	53.6		
15:45	350		35.8	5.87	1097.4	21.89	>1000	BRO	6.15	53.8		
15:55	355		35.7	5.90	1091.8	22.20	69.3	TAN	6.11	51.8		
16:05	360		36.0	5.92	1092.2	22.07	90.3	TAN	6.23	49.4	SURGING	
16:10	DEV	PAUSED	EQUIPMENT ISSUES									
16:30	360		34.80	DEV	RESUMED						SURGING	
16:40	365		35.80	5.83	1088.0	23.07	>1000	BRO	5.65	62.3		
16:50	370		35.70	5.83	1089.5	22.40	>1000	BRO	5.63	61.6		
17:00	375		36.20	5.82	1089.3	22.08	>1000	BRO	5.58	61.9		
17:10	380		36.00	5.81	1089.3	22.02	>1000	BRO	5.42	62.2		
17:20	385		35.40	5.79	1084.7	21.89	>1000	BRO	5.21	63.7	SURGING	
17:30	390		36.55	5.80	1087.1	21.22	>1000	BRO	5.40	64.7		
17:40	395		35.9	5.82	1078.1	21.30	29.1	CLR	5.60	64.1		
17:50	400		36.2	5.77	1074.7	21.09	30.1	CLR	5.32	66.4		
18:00	405		36.3	5.82	1074.8	21.18	30.3	CLR	5.63	64.2		
18:10	410		36.2	5.83	1071.3	21.26	27.1	CLR	5.59	63.7		
18:20	415		35.8	5.85	1069.5	21.40	14.2	CLR	5.74	62.9	SURGING	
18:30	420		36.2	5.83	1071.7	21.44	90.4	TAN	5.50	65.1		
18:40	425		36.0	5.85	1075.7	21.21	40.4	Murky	5.79	62.9		
07/16-09:55	425		33.82	BEGIN	DEV	07/16					SURGING, 3"	
10:05	430	0.5	35.2	5.60	1010.4	21.54	>1000	BRO	5.81	95.9		
10:25	440		35.15	5.68	1005.5	21.46	37.4	Murky	6.40	71.1		
10:45	450		35.10	5.75	1005.1	21.89	20.1	CLR	6.33	62.3		
11:05	460		35.20	5.75	998.7	22.07	20.0	CLR	6.08	62.5	-> 5' SURGING	
11:25	470		35.5	5.81	1000.6	22.47	47.9	TAN	6.41	60.6	SURGING	
11:45	480		35.8	5.85	995.4	22.69	42.9	TAN	6.41	58.9		
12:05	490		35.8	5.87	992.9	22.72	18.1	CLR	6.46	57.4		
12:25	500		35.8	5.86	989.0	22.77	9.28	CLR	6.32	58.1	SURGING	
12:45	510		35.8	5.87	985.4	22.73	68.6	TAN	6.57	60.0	SURGING	
= TOTAL VOLUME REMOVED (gal)												

DEVELOPMENT METHOD: _____

NOTES: _____

Product Name: Low-Flow System

Date: 2020-07-16 16:55:13

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type polyethylene
Tubing Diameter .500 in
Tubing Length 42 ft

Pump placement from TOC 42 ft

Well Information:

Well ID B-100
Well diameter 2 in
Well Total Depth 47.58 ft
Screen Length 10 ft
Depth to Water 34.8 ft

Pumping Information:

Final Pumping Rate 500 mL/min
Total System Volume 1.711659 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 7.2 in
Total Volume Pumped 12.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:34:05	300.09	22.96	5.52	963.99	5.91	35.40	3.23	83.70
Last 5	16:39:05	600.02	23.15	5.46	965.93	7.37	35.40	2.34	86.30
Last 5	16:44:05	900.01	23.14	5.45	966.96	5.26	35.40	2.23	87.18
Last 5	16:49:05	1200.00	23.29	5.43	968.46	4.55	35.40	2.01	88.41
Last 5	16:54:05	1500.00	23.41	5.42	968.97	5.78	35.40	1.88	89.19
Variance 0			-0.01	-0.01	1.04			-0.11	0.89
Variance 1			0.15	-0.02	1.50			-0.22	1.23
Variance 2			0.12	-0.01	0.51			-0.13	0.78

Notes

Development complete

Grab Samples

Calibration Report: Conductivity Calibration Report
2020-07-14 12:36:47
Probe: 647057
Cell Constant: 1.0477
Stability: Full

Calibration Report: Conductivity Calibration Report
2020-07-15 08:27:55
Probe: 647057
Cell Constant: 1.1573
Stability: Full

Calibration Report: Conductivity Calibration Report
2020-07-16 08:23:59
Probe: 647057
Cell Constant: 1.0632
Stability: Full

Calibration Report: Conductivity Calibration Report
2020-07-17 08:46:48
Probe: 647057
Cell Constant: 1.0496
Stability: Full

Calibration Report: ORP Calibration Report
2020-07-14 12:54:48
Probe: 647057
User Defined: 228.0 mV
Offset: 33.9 mV
Stability: Full

Calibration Report: ORP Calibration Report
2020-07-15 08:51:02
Probe: 647057
User Defined: 228.0 mV
Offset: 34.8 mV
Stability: Full

Calibration Report: ORP Calibration Report
2020-07-16 08:44:30
Probe: 647057
ZoBell's
Offset: 35.7 mV
Stability: Full

Calibration Report: ORP Calibration Report
2020-07-17 09:06:27
Probe: 647057
User Defined: 228.0 mV
Offset: 39.4 mV
Stability: Full

Calibration Report: pH Calibration Report
2020-07-14 12:51:50
Probe: 647057
4.00 to 7.00 pH
Slope: -53.81 mV/pH
Offset: 6.63 pH
7.00 to 10.00 pH
Slope: -55.07 mV/pH
Offset: 6.64 pH
Stability: Full

Calibration Report: pH Calibration Report
2020-07-15 08:47:00
Probe: 647057
4.00 to 7.00 pH
Slope: -54.18 mV/pH
Offset: 6.62 pH
7.00 to 10.00 pH
Slope: -55.99 mV/pH
Offset: 6.63 pH
Stability: Full

Calibration Report: pH Calibration Report
2020-07-16 08:40:54
Probe: 647057
4.00 to 7.00 pH
Slope: -53.54 mV/pH
Offset: 6.60 pH
7.00 to 10.00 pH
Slope: -53.64 mV/pH
Offset: 6.60 pH
Stability: Full

Calibration Report: pH Calibration Report
2020-07-17 09:03:54
Probe: 647057
4.00 to 7.00 pH
Slope: -53.47 mV/pH
Offset: 6.63 pH
7.00 to 10.00 pH
Slope: -53.92 mV/pH
Offset: 6.63 pH
Stability: Full

Calibration Report: RDO Calibration Report
2020-07-17 09:14:43
Probe: 647057
Slope: 1.0475
Offset: -0.0000
Stability: Full

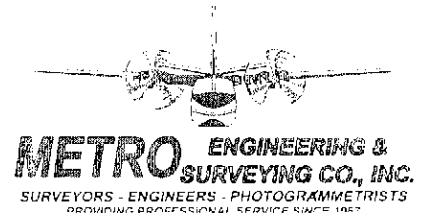
Calibration Report: RDO Calibration Report
2020-07-14 13:03:38
Probe: 647057
Slope: 1.1023
Offset: -0.0000
Stability: Full

Calibration Report: RDO Calibration Report
2020-07-15 09:03:31
Probe: 647057
Slope: 1.0505
Offset: -0.0000
Stability: Nominal

Calibration Report: RDO Calibration Report
2020-07-16 09:08:35
Probe: 647057
Slope: 1.1033
Offset: -0.0000
Stability: Nominal

APPENDIX C

CERTIFIED WELL SURVEY



1469 HIGHWAY 20 WEST • McDONOUGH, GA 30253
phone: 770-707-0777 fax: 770.707-0755
WWW.METRO-ENGINEERING.COM

SURVEYOR'S REPORT

SCOPE OF WORK:

Field survey of existing monitoring wells at Georgia Power Company, Plant McDonough in Smyrna, GA.

Horizontal and vertical datum was derived from RTK GPS observations with corrections from the eGPS network and conventional surveying equipment. Horizontal datum is Georgia State Plane, West Zone, NAD83(2011) and vertical datum is NAVD88.

EQUIPMENT USED TO ESTABLISH THE MONITORING WELL LOCATIONS:

Trimble R8 Dual Frequency GPS Receiver
Leica TS16 Total Station
Leica DNA10 Digital Level

CERTIFICATION:

I hereby certify that the center of well casing (PVC) has a horizontal accuracy of 0.5+/- feet or better using a Trimble R8 Dual Frequency RTK (survey-grade) global positioning system receiver referencing the Georgia State Plane, west zone, NAD83(2011) coordinate system in US survey feet. The top of well casing (PVC) elevation data was determined in feet above mean sea level based on the NAVD88 vertical datum. Vertical data was confirmed to be accurate within 0.01 foot through establishment of a closed level check loop with a Leica DNA10 digital level having a published accuracy of 0.9mm per dual-traverse kilometer.


James R. Green R.L.S. No. 2543



Date: 8/10/20

Plant McDonough
Monitoring Well Locations
August 7, 2020

Well ID	LATITUDE	LONGITUDE	NAIL NORTHING	NAIL EASTING	NAIL ELEV	PVC NORTHING	PVC EASTING	TOP PVC ELEV	ELEV AT BASE
B-100	N33.821507	W84.477304	1390255.7	2202241.1	775.32	1390254.8	2202242.1	777.95	775.3
B-16	N33.827948	W84.473793	1392595.3	2203314.4	823.54	1392595.1	2203315.4	826.47	823.6
B-18	N33.827740	W84.475241	1392520.2	2202876.1	823.89	1392521.0	2202875.5	826.56	823.9
B-24	N33.827616	W84.479935	1392479.7	2201451.1	819.19	1392479.9	2201450.0	822.11	819.3
B-25	N33.828532	W84.479765	1392813.0	2201503.9	833.41	1392813.3	2201502.7	836.54	833.5
B-26	N33.829336	W84.479610	1393105.5	2201551.4	850.61	1393105.6	2201550.4	853.60	850.6
B-28	N33.826209	W84.479175	1391968.5	2201678.9	813.28	1391967.4	2201679.2	816.08	813.3
B-29	N33.825994	W84.480021	1391891.0	2201421.4	813.47	1391890.0	2201422.0	816.43	813.5
B-3	N33.831925	W84.476784	1394044.3	2202412.0	834.86	1394045.1	2202411.5	837.78	835.0
B-31	N33.826387	W84.481648	1392034.9	2200928.0	794.84	1392034.3	2200928.5	797.47	794.9
B-41	N33.823333	W84.478925	1390921.5	2201751.1	792.40	1390920.8	2201751.9	795.20	792.4
B-50	N33.825358	W84.478639	1391656.0	2201840.9	806.49	1391657.1	2201841.0	809.67	809.2
B-51	N33.822173	W84.481705	1390500.7	2200905.6	763.29	1390501.2	2200906.5	765.92	763.3
B-52	N33.827143	W84.480378	1392307.3	2201314.3	820.18	1392308.3	2201314.8	822.89	820.3
B-54	N33.832971	W84.474387	1394422.3	2203141.2	782.54	1394423.5	2203140.7	785.46	782.6
B-55	N33.832207	W84.471067	1394142.2	2204146.8	822.86	1394142.6	2204147.9	825.12	822.9
B-56	N33.831700	W84.470934	1393957.6	2204186.8	820.95	1393957.9	2204187.8	823.59	821.0
B-57	N33.824649	W84.475687	1391397.5	2202736.1	786.03	1391396.3	2202736.9	789.04	786.0
B-58	N33.823902	W84.476706	1391126.5	2202426.0	785.20	1391125.7	2202426.5	788.17	785.2
B-59	N33.832766	W84.474846	1394348.1	2203001.5	785.41	1394349.1	2203001.1	788.00	785.5
B-6	N33.832961	W84.473972	1394420.5	2203266.5	786.45	1394419.5	2203266.5	789.47	786.5
B-60	N33.823839	W84.475205	1391101.4	2202882.2	779.25	1391100.7	2202881.6	782.13	779.2
B-61	N33.823442	W84.476443	1390958.4	2202506.9	778.95	1390957.8	2202505.8	782.09	779.0
B-62	N33.820331	W84.478719	N.A.	N.A.	N.A.	1389828.1	2201811.2	760.08	760.4
B-63	N33.823559	W84.474888	1390998.7	2202977.5	777.37	1390999.1	2202978.1	777.10	777.3
B-64	N33.832856	W84.474746	1394382.3	2203030.6	785.98	1394381.9	2203031.3	785.83	786.1
B-65	N33.832862	W84.471389	N.A.	N.A.	N.A.	1394381.2	2204050.8	821.95	822.3
B-66	N33.831427	W84.470638	1393859.2	2204277.7	813.33	1393858.2	2204277.5	815.90	813.3

Plant McDonough
Monitoring Well Locations
August 7, 2020

B-68	N33.824362	W84.482346	1391298.8	2200715.2	759.05	1391298.2	2200714.2	758.68	759.0
B-7	N33.832841	W84.472887	1394375.6	2203596.0	806.04	1394374.6	2203596.1	809.16	806.1
B-76	N33.822783	W84.475614	1390716.5	2202756.0	760.87	1390717.4	2202756.9	760.53	766.5
B-77	N33.823420	W84.475007	1390949.4	2202941.4	777.12	1390948.7	2202942.0	776.86	777.1
B-78	N33.832708	W84.474987	1394327.3	2202958.7	787.79	1394328.2	2202958.2	790.75	788.0
B-79	N33.833068	W84.474116	1394457.8	2203223.6	785.84	1394458.6	2203223.0	788.66	785.9
B-80	N33.832834	W84.473091	1394373.5	2203533.9	801.73	1394372.6	2203533.9	804.47	801.8
B-81	N33.832815	W84.472409	1394365.8	2203741.3	817.64	1394364.9	2203741.1	820.56	817.7
B-82	N33.831129	W84.470701	1393750.1	2204256.8	807.55	1393750.0	2204258.1	810.07	807.5
B-83	N33.822832	W84.475816	1390735.9	2202695.1	777.17	1390735.5	2202695.6	776.98	777.1
B-84	N33.821939	W84.477307	1390411.2	2202242.5	776.52	1390411.9	2202241.9	776.34	776.6
B-85	N33.832998	W84.474407	1394432.8	2203134.8	782.71	1394433.4	2203134.5	782.54	782.7
B-86	N33.833127	W84.474170	1394479.5	2203207.0	784.52	1394480.0	2203206.6	784.29	784.6
B-87	N33.832915	W84.473100	1394400.8	2203531.3	800.32	1394401.9	2203531.3	803.37	800.4
B-88	N33.832914	W84.472419	1394399.9	2203738.1	816.80	1394401.1	2203738.3	820.07	817.0
B-89	N33.832910	W84.471394	1394398.7	2204048.6	822.53	1394398.4	2204049.4	822.36	822.6
B-90	N33.833185	W84.474151	1394500.4	2203212.8	784.16	1394501.0	2203212.6	784.00	784.2
B-91	N33.833036	W84.474442	N.A.	N.A.	N.A.	1394447.1	2203123.9	782.98	783.1
B-92	N33.832887	W84.474761	1394393.2	2203026.4	785.30	1394392.7	2203026.7	785.08	785.3
B-93	N33.832763	W84.475024	1394348.1	2202947.0	789.19	1394348.7	2202946.7	789.07	789.2
B-94	N33.832915	W84.473158	1394400.9	2203513.8	799.12	1394402.0	2203513.7	801.74	799.2
B-95	N33.833233	W84.474299	1394519.5	2203167.2	784.18	1394518.6	2203167.7	784.00	784.3
B-96	N33.833122	W84.474524	1394479.4	2203098.8	785.19	1394478.7	2203099.3	784.92	785.3
B-97	N33.832988	W84.474823	1394430.6	2203008.0	786.50	1394430.0	2203008.3	786.29	786.6
B-98	N33.832883	W84.475066	1394392.7	2202934.6	789.81	1394392.5	2202934.0	789.67	789.8
B-99	N33.833247	W84.474573	1394524.7	2203084.9	782.57	1394524.2	2203084.5	782.39	782.6
DGWA-53	N33.830346	W84.479224	1393473.5	2201667.7	841.37	1393472.8	2201668.8	844.26	841.3
DGWA-70A	N33.822116	W84.482741	1390480.2	2200591.7	805.67	1390481.4	2200591.6	808.52	805.8
DGWA-71	N33.831695	W84.479078	1393964.3	2201714.7	861.22	1393963.3	2201714.8	863.84	861.2
DGWC-8	N33.832699	W84.471944	1394323.0	2203882.3	824.02	1394322.2	2203882.1	826.38	824.1

Plant McDonough
Monitoring Well Locations
August 7, 2020

DGWC-37	N33.822121	W84.481661	1390483.0	2200920.7	763.64	1390482.2	2200919.8	766.21	763.7
DGWC-10	N33.831317	W84.470889	1393818.1	2204200.0	820.82	1393818.3	2204201.1	823.55	820.9
DGWC-11	N33.830571	W84.471001	1393546.9	2204167.3	797.99	1393547.1	2204166.2	800.57	798.1
DGWC-12	N33.829478	W84.471122	1393149.8	2204127.3	771.10	1393149.4	2204128.3	773.86	771.2
DGWC-13	N33.828740	W84.471263	1392880.8	2204085.7	791.20	1392881.1	2204084.6	794.10	791.3
DGWC-14	N33.827896	W84.471495	1392574.5	2204014.4	789.69	1392574.2	2204013.3	792.40	789.8
DGWC-15	N33.827810	W84.472595	1392544.2	2203677.9	821.43	1392544.1	2203679.0	824.50	821.5
DGWC-17	N33.828084	W84.474664	1392645.0	2203050.2	834.14	1392645.6	2203051.0	837.05	834.2
DGWC-19	N33.827248	W84.476143	1392341.8	2202601.5	822.87	1392342.6	2202601.0	825.46	822.9
DGWC-2	N33.831683	W84.477745	1393957.1	2202119.4	848.17	1393958.0	2202119.5	850.88	848.3
DGWC-20	N33.826754	W84.477079	1392163.7	2202316.3	819.66	1392164.5	2202315.6	822.14	819.8
DGWC-21	N33.826487	W84.477911	1392066.4	2202063.3	813.47	1392067.5	2202063.5	816.28	813.5
DGWC-22	N33.826647	W84.478805	1392125.2	2201791.7	813.69	1392126.3	2201791.9	816.59	813.7
DGWC-23	N33.826957	W84.479498	1392240.4	2201582.8	815.63	1392239.7	2201582.0	818.37	815.7
DGWC-38	N33.821795	W84.480906	1390363.6	2201149.0	754.67	1390362.7	2201148.6	757.43	754.7
DGWC-39	N33.821635	W84.479616	1390302.5	2201539.8	756.93	1390303.6	2201540.1	759.89	757.0
DGWC-4	N33.832275	W84.475959	1394170.6	2202662.7	812.06	1394171.5	2202662.4	814.85	812.1
DGWC-40	N33.822523	W84.478678	1390625.1	2201826.7	776.12	1390625.7	2201825.9	779.06	776.2
DGWC-42	N33.824453	W84.478540	1391327.4	2201869.1	801.98	1391327.8	2201870.2	804.68	802.0
DGWC-47	N33.825080	W84.476104	1391553.1	2202611.3	794.35	1391553.8	2202610.5	797.45	794.3
DGWC-48	N33.824420	W84.477157	1391314.2	2202289.2	785.21	1391314.6	2202290.2	788.33	785.2
DGWC-5	N33.832647	W84.474964	1394305.3	2202965.3	788.64	1394306.3	2202965.1	791.75	788.7
DGWC-67	N33.823417	W84.481959	1390953.6	2200830.0	766.80	1390953.8	2200830.7	766.70	767.0
DGWC-68A	N33.824370	W84.482278	1391300.9	2200733.4	765.06	1391301.2	2200734.9	765.33	765.4
DGWC-69	N33.825150	W84.482537	1391583.9	2200657.2	763.99	1391585.0	2200657.1	763.75	764.0
DGWC-9	N33.831969	W84.470993	1394055.6	2204168.9	821.86	1394055.9	2204170.0	824.35	821.8

February 12, 2021

Project No. 166849618

Mr. Joju Abraham, PG

Southern Company Services
241 Ralph McGill Blvd NE
Atlanta, GA 30308
jabraham@southernco.com

**PIEZOMETER INSTALLATION REPORT (B-101D THROUGH B-111D)
GEORGIA POWER COMPANY – PLANT MCDONOUGH, SMYRNA, GEORGIA**

Dear Mr. Abraham,

Golder Associates Inc. (Golder) is submitting this *Piezometer Installation Report* to Southern Company Services, Inc. (SCS) and Georgia Power Company (Georgia Power), which documents the construction of piezometers at Plant McDonough in Smyrna, Georgia (Site). Piezometer construction activities were performed in general accordance with the standards described in the Resource Conservation and Recovery Act (RCRA) Technical Enforcement Guidance Document (1986) and the Georgia Water Wells Standards Act of 1985. The installation of the piezometers was conducted under the oversight and direction of Timothy I. Richards, a Georgia Registered Professional Geologist (PG).

The field activities for this investigation were performed in October 2020 through December 2020. The field work consisted of the installation and development of eleven (11) piezometers installed for purposes of vertical delineation of target constituents for Coal Combustion Residuals (CCR) compliance monitoring in groundwater. Metro Engineering & Surveying (Metro) conducted a survey of the installed piezometers in November 2020. A summary of the activities is presented below. Figure 1 presents the location of each of the newly installed piezometers.

Drilling and Construction Activities

Piezometers B-101D through B-111D were drilled and installed by Cascade at the site between October and November 2020. Cascade had a current and valid bond with the Water Wells Standards Advisory Council for the state of Georgia at the time of drilling and piezometer installation. A copy of Cascade's bond is included in Appendix A and the driller's name is provided on the boring/construction diagrams presented in Appendix B.

An experienced and licensed Golder geologist (Michael Boatman) was present on site to oversee and record the drilling and piezometer construction under the supervision of a professional geologist registered to practice in Georgia (Timothy I. Richards). Drilling methods employed for borehole advancement were 4"/6" sonic drilling technique. SCS – Civil Field Services (CFS) used air knife methodology to clear the first 10 feet of the subsurface for any utilities. The drilling equipment consisted of a Geoprobe 8140LC roto-sonic drill rig. Prior to use, and between boreholes, downhole equipment was steam cleaned.

The piezometers were installed in bedrock, and rock cores were collected. Boring logs and construction records for the newly installed piezometers are included in Appendix B. The construction data are summarized in Table 1 and the locations of the piezometers are provided on Figure 1.

Piezometers were constructed within the boreholes using factory-cleaned and sealed Schedule 40 poly-vinyl chloride (PVC) products with flush-threaded fittings. Piezometers B-101D through B-111D were constructed with a 10-foot section of 4-inch outer diameter (OD) and 2-inch inner diameter (ID), flush-threaded, 0.010-inch factory-slotted PVC U-Pack screens. The drillers filled the annulus of each U-Pack screen section with No. 1 filter sand. In each case, the screen was placed near the bottom of the borehole, with the remainder of the piezometer constructed from 10-foot sections of 2-inch ID, flush-threaded, PVC casing riser. A flush-threaded PVC end cap was placed on the bottom of each piezometer to provide a 0.4-foot sump/sediment trap. Piezometers were completed as “stick-ups” extending approximately 31 inches above grade, except B-110D which was completed as a flush mount. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF)-rated.

Following placement of the screen and casing, the annular space in each borehole adjacent to the screen was filled with U.S. Standard Sieve size No. 1 filter pack sand as appropriate for the formation. The filter pack sand was placed into each borehole extending approximately 2 feet above the depth of the top of the screen. Immediately following placement of the filter pack, each piezometer was pumped using a portable submersible pump until visibly clear water was discharged. If settling occurred during pumping, additional sand was placed so that the filter sand thickness was no less than 2 feet above the screen. A filter pack seal, composed of 2 to 5 feet of hydrated time-release 3/8” coated bentonite pellets, was then placed on top of the filter pack by slowly pouring the material down the boreholes tamping it into place. The bentonite was hydrated using potable water and allowed to cure for at least two hours prior to grouting the piezometers.

Following hydration of the bentonite, the remaining annular space was grouted with an AquaGuard® bentonite grout mixture to approximately 2 feet below ground surface using a tremie method. Based on information provided by the product manufacturer, AquaGuard® is a bentonite grout consisting of bentonite and additives that allow for a mixture of 30% solids by weight to facilitate grouting via tremie pipe, with additives that slow the bentonite curing so that proper placement can be achieved. The surface completion for piezometers B-101D through B-109D and B-111D consists of a locked, aluminum protective casing and a 4-foot by 4-foot by 4-inch concrete pad with bollards. The surface completion for piezometer B-110D consists of a secure 8-inch flush mount road-box set in a 4-foot by 4-foot by 4-inch concrete pad. The annular space of the aluminum protective casings and flush mount were filled with pea gravel to approximately 2 inches from top of PVC.

Development Activities

The newly installed piezometers (B-101D through B-111D) were developed between October and December 2020 in accordance with the Monitoring Well Development Procedures, dated March 2016, prepared by SCS. Additionally, the piezometer screen intervals were surged and then pumped using a pneumatic Geotech Reclaimer® pump system. During development, water quality measurements of pH, temperature, specific conductance, and turbidity were periodically collected using field-calibrated water quality equipment after the piezometer responded to improving conditions. Due to poor recharge, B-109D and B-110D were surged by adding 15 gallons of deionized (DI) water in each well during development. The volume of DI water added was removed in addition to recharged groundwater in the piezometer, as recorded on the development logs. Similarly, B-103D did not recharge sufficiently during development. Development at B-103D was discontinued and is

incomplete due to low recovery and elevated turbidity. Prior to any sampling, this well will be further developed. Development activities were conducted utilizing a SmarTroll® multimeter and a Lamotte 2020 turbidimeter, and for monitoring water quality measurements. Equipment calibration forms and development forms are included in Appendix B with development details summarized in Table 2.

As presented in Table 2, between approximately 36 and 153 gallons were removed from each piezometer. During development, attempts were made for each piezometer to achieve a turbidity value below 10 nephelometric turbidity units (NTUs). Water level measurements were collected using a decontaminated electronic water level indicator, referenced to a notch (or permanent marking) at the top of the casing and recorded to within 0.01 foot.

Piezometer Survey

The newly installed piezometers were surveyed in November 2020 by Metro Engineering & Surveying Co., Inc. (James R. Green). Surveyed locations and elevations are presented on the boring/construction diagrams and a site map showing the locations of the newly installed piezometers is presented on Figure 1. The certified piezometer survey is attached as Appendix C.

Closing

We appreciate the opportunity to assist SCS and GPC with this project. Should you have any questions or require additional information, please contact the undersigned at (770) 496-1893.

Sincerely,

Golder Associates Inc.



Dawn L. Prell
Senior Consultant



Timothy I. Richards, PG
Associate, Senior Consultant



BAS/TIR

CC: Georgia Power Company - Plant McDonough
Ben Hodges, Geologist, Georgia Power Company
Dawn L. Prell - Golder
Rachel P. Kirkman, PG - Golder




Attachments: Figure 1 - Site Plan and Piezometer Location Map
Table 1 - Summary of Piezometer Construction Details
Table 2 - Summary of Piezometer Development Data
Appendix A – Driller's Bond
Appendix B - Boring Logs/Construction Diagrams, Development Forms, and Calibration Logs
Appendix C – Certified Survey Data

FIGURE 1

**SITE PLAN AND PIEZOMETER
LOCATION MAP**



LEGEND

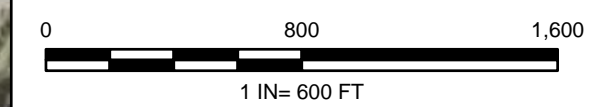
-  PIEZOMETER
-  PROPERTY BOUNDARY
-  PERMIT BOUNDARY

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE

REFERENCE

1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS PROVIDED BY METRO ENGINEERING & SURVEYING CO., INC. (JANUARY 2021).



CLIENT
SOUTHERN COMPANY SERVICES, INC.
 PLANT MCDONOUGH



PROJECT
PIEZOMETER INSTALLATION REPORT (B-101D THROUGH B-111D)

TITLE
SITE PLAN AND PIEZOMETER LOCATION MAP

CONSULTANT	YYYY-MM-DD	2020-09-22
	PREPARED	BAS
	DESIGN	BAS
	REVIEW	DP/RK
	APPROVED	

Path: C:\Users\bsteele\Desktop\McDonough GIS - Other\Figure 1 - Site Plan and Piezometer Location Map.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANSIB

TABLE 1

**SUMMARY OF PIEZOMETER
CONSTRUCTION DETAILS**

TABLE 1
Summary of Piezometer Construction Details
Georgia Power Company - Plant McDonough
Smyrna, Georgia

Borehole ID	Latitude	Longitude	NAD83 Northing	NAD83 Easting	Elevation Top of PVC (feet NAVD88)	Elevation Ground Surface (feet NAVD88)	Rock Type at Screen Interval	Total Depth (feet bgs)	Depth to Bedrock (feet bgs)	Screened Interval (feet bgs)	Water Level (feet bTOC)	Date Installed
B-101D	33.831990	-84.470999	1394063.6	2204168.2	824.29	821.2	Schist	75.00	60.0	64.9-74.9	34.0	11/12/2020
B-102D	33.831344	-84.470891	1393828.4	2204200.4	823.42	820.6	Schist	85.00	70.0	75.4-84.4	34.0	11/10/2020
B-103D	33.825052	-84.476091	1391543.5	2202614.4	795.96	793.8	Gneiss	70.00	18.0	60-70	12.0	10/15/2020
B-104D	33.824431	-84.477129	1391318.3	2202298.5	787.90	785.3	Gneiss	60.00	35.0	50-60	12.0	10/20/2020
B-105D	33.822547	-84.478659	1390634.5	2201831.9	779.01	776.0	Gneiss	70.00	55.0	60-70	22.5	10/19/2020
B-106D	33.832712	-84.471987	1394327.1	2203869.2	826.21	823.5	Gneiss	80.00	60.0	69.4-79.4	37.0	11/13/2020
B-107D	33.827226	-84.476158	1392334.5	2202596.4	823.38	820.6	Gneiss	85.75	67.0	75.1-85.1	21.8	10/28/2020
B-108D	33.826733	-84.477091	1392156.1	2202312.5	821.13	818.4	Gneiss	80.00	57.5	69-79	17.7	10/27/2020
B-109D	33.831682	-84.477720	1393957.5	2202127.0	850.73	847.8	Gneiss	100.00	45.0	88.4-99.4	23.5	10/31/2020
B-110D	33.824352	-84.482274	1391294.4	2200736.0	764.61	764.7	Gneiss	65.00	35.0	53-63	9.4	11/17/2020
B-111D	33.832640	-84.474992	1394303.4	2202956.4	791.87	789.1	Gneiss	85.00	27.0	74.15-84.15	8.9	11/3/2020

Notes:

NAD83 - North American Datum 1983

NAVD88 - North American Vertical Datum 1988

NA - Not Available

bgs - Below ground surface

bTOC - Below Top of Casing

TABLE 2

**SUMMARY OF PIEZOMETER
DEVELOPMENT DATA**

Table 2
Summary of Piezometer Development Data
Georgia Power Company - Plant McDonough
Smyrna, Georgia

Piezometer ID	Date Completed	Development Method	Measured Total Depth of Well (feet bTOC)	Initial Water level (feet bTOC)	Final Water Level (feet bTOC)	Volume of Casing (gal)	Total Volume Removed (gal)	pH (SU)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)
B-101D	12/16/2020	Reclaimer Pump	77.8	26.16	35.28	8.4	51	6.02	0.558	14.06	2.19	93.51	1.20
B-102D	12/8/2020	Reclaimer Pump	87.5	32.36	38.86	9.0	45	5.48	0.629	15.91	1.46	-7.38	0.22
B-103D ^[1]	10/30/2020	Reclaimer Pump	74.6	28.15	35.95	7.6	36	6.63	1.790	12.92	934	123.3	2.28
B-104D	10/29/2020	Reclaimer Pump	63.5	6.25	26.60	9.3	36	6.06	1.059	19.81	0.19	272.2	1.33
B-105D	11/4/2020	Reclaimer Pump	72.9	16.20	40.40	9.2	124	6.10	0.647	20.37	0.28	1184.21	1.54
B-106D	12/8/2020	Reclaimer Pump	82.2	35.33	37.19	7.6	87	5.93	0.512	16.92	4.94	84.61	0.13
B-107D	11/2/2020	Reclaimer Pump	85.3	18.35	18.83	10.9	103	5.86	0.710	18.42	3.56	215.20	0.13
B-108D	11/5/2020	Reclaimer Pump	81.9	20.25	22.60	10.1	123	6.08	0.791	18.39	4.70	-11.69	1.06
B-109D	12/16/2020	Reclaimer Pump	100.9	37.20	95.70	10.4	94 ^[2]	6.46	0.420	13.12	2.49	95.30	8.48
B-110D	12/10/2020	Reclaimer Pump	63.1	8.34	62.05	8.9	41 ^[3]	7.45	0.395	16.25	1.20	-342.70	0.93
B-111D	11/9/2020	Reclaimer Pump	85.8	9.58	14.35	12.4	153	6.88	0.827	20.03	1.16	-384.27	0.12

Notes:

bTOC - feet below Top of Casing
gal - gallons
SU - Standard Units
mS/cm - millisiemens per centimeter
°C - degrees Celsius
NTU - nephelometric turbidity units
mV - millivolts
mg/L - milligrams per liter
ORP - oxygen reduction potential
DO - dissolved oxygen

[1]: Development at B-103D discontinued/incomplete due to low recovery and elevated turbidity

[2]: 94 gallons of water were removed from B-109D, which includes approximately 15 gallons of deionized water that was added to facilitate development

[3]: 41 gallons of water were removed from B-110D, which includes approximately 15 gallons of deionized water that was added to facilitate development

APPENDIX A

DRILLER'S BOND

COPY

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. **800031223**

dated effective June 30, 2017
(MONTH-DAY-YEAR)

on behalf of Michael C. Rice and Cascade Drilling, L.P., any and all employees, officers and partners
(PRINCIPAL)

and in favor of State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2019
(MONTH-DAY-YEAR)

and ending on June 30, 2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and Zero/100 (\$30,000.00)

Description of bond Water Well Contractor Performance Bond

Premium: \$1,200.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on May 9, 2019
(MONTH-DAY-YEAR)
Atlantic Specialty Insurance Company

By _____
Attorney-in-Fact Elizabeth R. Hahn

Parker, Smith & Feek, Inc.
Agent

2233 112th Ave NE Bellevue, WA 98004
Address of Agent

(425) 709-3600
Telephone Number of Agent

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher, Andrew P. Larsen, Nicholas Fredrickson**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **sixty million dollars (\$60,000,000)** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

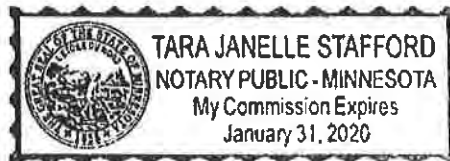
IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this twenty-sixth day of October, 2017.




By 
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this twenty-sixth day of October, 2017, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.



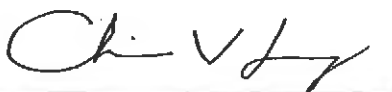

Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 9 day of May, 2019

This Power of Attorney expires
October 1, 2019




Christopher V. Jerry, Secretary

APPENDIX B

**BORING LOGS/CONSTRUCTION
DIAGRAMS, DEVELOPMENT
FORMS AND CALIBRATION LOGS**

RECORD OF BOREHOLE B-101D

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 75.00 ft
 LOCATION: Next to DGWC-9

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/11/20
 DATE COMPLETED: 11/12/20

NORTHING: 1394063.6
 EASTING: 2204168.2
 GS ELEVATION: 821.2 ft
 TOC ELEVATION: 824.29 ft

DEPTH W.L.: 34.0
 ELEVATION W.L.: 790.3
 DATE W.L.: 11/12/20
 TIME W.L.: 0954

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air knife; FILL	FILL						Stick-up -	<p>B-101D Borehole Diameter: 4" WELL CASING Interval: 0-75' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 64.9'-74.9' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 62.5'-75.0' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 59.0'-62.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-59.0' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
10		10.00 - 15.00 (SM), SILTY SAND; tannish brown to reddish brown, low plasticity, w<pl, dry, loose to soft	SM		10.00					
15		15.00 - 16.00 (TWR), TRANSITIONALLY WEATHERED ROCK; dark gray, deeply weathered, fine to medium, poorly jointed	TWR		15.00	1	ROTO SONIC	8.00 10.00		
16		16.00 - 20.00 (CL), CLAY; some sand, reddish brown, fine to coarse, low plasticity, w<PL, soft, moist to wet	CL		16.00					
20		20.00 - 23.00 (ML), SILT; trace to some gravels, reddish brown, low plasticity, w<PL, very soft, wet	ML		20.00	2	ROTO SONIC	4.00 5.00		
23		23.00 - 25.00 (SM), SILTY SAND; trace gravels, tannish brown to gray, non-plastic, w<PL, loose, dry, TWR	TWR		23.00					
25		25.00 - 35.00 NO RECOVERY; material washed out of core barrel after switching to rock coring methods based on the TWR at the 23-25' interval.	NR		25.00	3	ROTO SONIC	0.00 10.00		
35		35.00 - 40.00 NO RECOVERY; The core barrel was able to be advanced to depth, but casing was not able to advance to depth. Material was lost while extracting core barrel.	NR		35.00	4	ROTO SONIC	0.00 5.00		
40		40.00 - 50.00 NO RECOVERY; The core barrel was able to be advanced to depth, but casing was not able to advance to depth. Material was lost while extracting core barrel.	NR		40.00	5	ROTO SONIC	0.00 10.00		
50		Log continued on next page								

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-101D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 75.00 ft
 LOCATION: Next to DGWC-9

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/11/20
 DATE COMPLETED: 11/12/20

NORTHING: 1394063.6
 EASTING: 2204168.2
 GS ELEVATION: 821.2 ft
 TOC ELEVATION: 824.29 ft

DEPTH W.L.: 34.0
 ELEVATION W.L.: 790.3
 DATE W.L.: 11/12/20
 TIME W.L.: 0954

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
50		50.00 - 51.00 (ML), SANDY SILT; grayish brown, low to medium plasticity, w~PL, soft to firm, moist	ML		50.00	6	ROTO SONIC	9.50 10.00		B-101D Borehole Diameter: 4" WELL CASING Interval: 0-75' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 64.9'-74.9' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 62.5'-75.0' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 59.0'-62.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-59.0' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons NOTES
		51.00 - 52.00 (ML), SILT; trace gravels, schist fragments, grayish tan, non-plastic, non-cohesive, w<PL, loose, dry	ML		51.00					
		52.00 - 52.30 (TWR), TRANSITIONALLY WEATHERED ROCK; deeply weathered, R2, well foliated, fine to medium grain, iron staining.	TWR		52.30					
55		52.30 - 60.00 (ML), SANDY SILT; with gravel, grayish brown, low to medium plasticity, w~PL, soft to firm, moist	ML			7	ROTO SONIC	2.50 10.00	Sand Filter Pack	
60		60.00 - 70.00 (SCHIST), BEDROCK; well foliated, highly crenulated, poorly jointed, iron staining	BR		60.00					
65						8	ROTO SONIC	3.55 5.00	U-Pack Screen	
70		70.00 - 72.00 (ML), SANDY SILT; grayish brown, low to medium plasticity, w~PL, soft to firm, moist	ML		70.00					
		72.00 - 75.00 (SCHIST), BEDROCK; well foliated, highly crenulated, poorly jointed, iron staining	BR		72.00					
75		Boring completed at 75.00 ft								
80										
85										
90										
95										
100										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-102D

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 85.00 ft
 LOCATION: Next to DGWC-10

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/9/20
 DATE COMPLETED: 11/10/20

NORTHING: 1393828.4
 EASTING: 2204200.4
 GS ELEVATION: 820.6 ft
 TOC ELEVATION: 823.42 ft

DEPTH W.L.: 34.0
 ELEVATION W.L.: 789.4
 DATE W.L.: 11/10/2020
 TIME W.L.: 1444

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air knife; FILL	FILL						Stick-up -	<p>B-102D Borehole Diameter: 4" WELL CASING Interval: 0'-85' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 75.4'-84.4' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 72.0'-75.4' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 67'-72' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-67' Type: AquaGuard Bentonite Grout Quantity: Approximately 120 gallons</p> <p>NOTES</p>
10		10.00 - 15.50 (CL), CLAY; red brown, trace to some sand, fine grain, w~PL, low plasticity, soft, moist	CL		10.00	1	ROTO SONIC	6.50 10.00		
15		15.50 - 17.50 (ML), SILT; red brown, trace gravels, non-plastic to low plasticity, w<PL, soft, moist	ML		15.50					
17.50		17.50 - 20.00 (ML), SILT; tanish-orange brown to silver, nonplastic to low plasticity, soft to loose	ML		17.50					
20		20.00 - 26.00 (SM), SILTY SAND; bronze, some coarse sand, nonplastic, dry to moist	SM		20.00	2	ROTO SONIC	10.00 10.00		
26		26.00 - 30.00 (SM), SILTY SAND; gray, some coarse sand, nonplastic, non-cohesive, compact, dry to moist	SM		26.00					
30		30.00 - 40.00 (SM), SILTY SAND; gray and orange-brown, non-plastic to low plasticity, firm to compact, dry to moist, soft to firm, contains muscovite	SM		30.00	3	ROTO SONIC	9.00 10.00	AquaGuard Bentonite - Grout	
40		40.00 - 44.00 (SM), SILTY SAND; gray and orange-brown, non-plastic to low plasticity, firm to compact, dry to moist, soft to firm	SM		40.00					
44		44.00 - 46.00 (ML), SILT; gray, non-plastic to lows plasticity, soft, moist,	ML		44.00	4	ROTO SONIC	7.00 10.00		
46		46.00 - 50.00 (SM), SILTY SAND; reddish brown, non-plastic to low plasticity, very soft, wet	SM		46.00					
50		Log continued on next page								

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-102D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 85.00 ft
 LOCATION: Next to DGWC-10

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/9/20
 DATE COMPLETED: 11/10/20

NORTHING: 1393828.4
 EASTING: 2204200.4
 GS ELEVATION: 820.6 ft
 TOC ELEVATION: 823.42 ft

DEPTH W.L.: 34.0
 ELEVATION W.L.: 789.4
 DATE W.L.: 11/10/2020
 TIME W.L.: 1444

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS		
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC				
50		50.00 - 51.00 (SM), SILTY SAND; reddish brown, non-plastic to low plasticity, very soft, wet	SM	[Pattern]	50.00	5	ROTO SONIC	5.00 5.00		<p>B-102D Borehole Diameter: 4" WELL CASING Interval: 0'-85' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 75.4'-84.4' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 72.0'-75.4' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 67'-72' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-67' Type: AquaGuard Bentonite Grout Quantity: Approximately 120 gallons</p> <p>NOTES</p>		
		51.00 - 55.00 (SM), SILTY SAND; gray, w<PL, fine to compact, dry to moist, contains muscovite	SM	[Pattern]	51.00							
55		55.00 - 60.00 (SM), SILTY SAND; gray to yellow orange, w<PL, fine to stiff, dry to moist, saprolitic	SM	[Pattern]	55.00	6	ROTO SONIC	5.00 5.00				
60		60.00 - 65.00 (ML), SILT; gray to light brown, w<PL, dense, dry	ML	[Pattern]	60.00	7	ROTO SONIC	4.00 5.00				
65		65.00 - 70.00 (TWR), TRANSITIONALLY WEATHERED ROCK; silty sand, gray, low plasticity, w<PL, stiff to hard, dry, saprolitic	TWR	[Pattern]	65.00	8	ROTO SONIC	5.00 5.00				
70		70.00 - 75.00 (SCHIST), BEDROCK, dark gray to black, fine to medium grain, moderately foliated, poorly jointed, high crenulated, weak to strong rock, slightly to moderately weathered, feldspar, muscovite, schist.	BR	[Pattern]	70.00	9	ROTO SONIC	5.00 5.00				
75		75.00 - 85.00 (SCHIST), BEDROCK; dark gray to black, moderately foliated, poorly jointed, high crenulated, weak to strong rock, slightly to moderately weathered, feldspar, muscovite, schist	BR	[Pattern]	75.00	10	ROTO SONIC	7.00 10.00				
85		Boring completed at 85.00 ft										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-103D

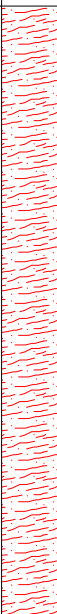
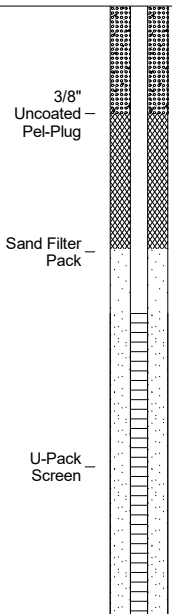
SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 70.00 ft
 LOCATION: East of DGWC-47

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/14/20
 DATE COMPLETED: 10/15/20

NORTHING: 1391543.5
 EASTING: 2202614.4
 GS ELEVATION: 793.8 ft
 TOC ELEVATION: 795.96 ft

DEPTH W.L.: 12.0
 ELEVATION W.L.: 783.9
 DATE W.L.: 10/15/2020
 TIME W.L.: 0740

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
50		40.00 - 70.00 (GNEISS), BEDROCK; light gray-green to dark gray; well foliated, poorly jointed, muscovite, biotite, feldspar, quartz (Continued)	BR							<p>B-103D Borehole Diameter: 4" WELL CASING Interval: 0'-70' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 60'-70' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 57.9'-70.0' Type: FilterSil Quantity: 3.5-50 lbs bags FILTER PACK SEAL Interval: 53.5'-57.9' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-53.5' Type: AquaGuard Bentonite Grout Quantity: Approximately 40 gallons</p> <p>NOTES</p>
55					7	ROTO SONIC	7.50 10.00			
60					8	ROTO SONIC	9.65 10.00	Sand Filter Pack	U-Pack Screen	
65										
70		Boring completed at 70.00 ft								
75										
80										
85										
90										
95										
100										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-104D

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 60.00 ft
 LOCATION: East of DGWC-48

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/20/20
 DATE COMPLETED: 10/20/20

NORTHING: 1391318.3
 EASTING: 2202298.5
 GS ELEVATION: 785.3 ft
 TOC ELEVATION: 787.90 ft

DEPTH W.L.: 12.0
 ELEVATION W.L.: 775.9
 DATE W.L.: 10/20/2020
 TIME W.L.: 1818

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air knife; FILL	FILL						Stick-up -	<p>B-104D Borehole Diameter: 4" WELL CASING Interval: 0'-60' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 50'-60' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 47.15'-60.0' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 44'-47.15' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-44' Type: AquaGuard Bentonite Grout Quantity: Approximately 40 gallons</p> <p>NOTES</p>
5										
10		10.00 - 12.00 (CL), CLAY; red brown; moist, soft, low plasticity, w<PL, FILL	CL		10.00					
15		12.00 - 22.00 (ML), SILT; dark brown to gray; non-plastic to low plasticity, dry to moist, w<PL, soft to firm	ML		12.00	1	ROTO SONIC	8.00 8.00		
20						2	ROTO SONIC	4.00 4.00		
25		22.00 - 30.00 (ML), SILT; dark brown; w~PL, moist to wet, soft to firm, contains gravels of biotite gneiss (trace)	ML		22.00	3	ROTO SONIC	8.00 8.00	AquaGuard Bentonite - Grout	
30		30.00 - 35.00 (TWR), TRANSITIONALLY WEATHERED ROCK; rust brown to gray; deeply weathered biotite gneiss, poorly foliated, poorly jointed, iron staining	TWR		30.00					
35		35.00 - 55.50 (GNEISS), BEDROCK; biotite, quartz, feldspar, light to dark gray, strong to medium strong, fresh to slightly weathered, locally contains iron staining and garnets	BR		35.00	4	ROTO SONIC	6.55 10.00		
40						5	ROTO SONIC	2.10 5.00	3/8" Uncoated Pel-Plug	
45						6	ROTO SONIC	4.35 7.50		
50		Log continued on next page							Sand Filter -	

BOREHOLE RECORD - MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-104D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 60.00 ft
 LOCATION: East of DGWC-48

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/20/20
 DATE COMPLETED: 10/20/20

NORTHING: 1391318.3
 EASTING: 2202298.5
 GS ELEVATION: 785.3 ft
 TOC ELEVATION: 787.90 ft

DEPTH W.L.: 12.0
 ELEVATION W.L.: 775.9
 DATE W.L.: 10/20/2020
 TIME W.L.: 1818

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE			REC
50		35.00 - 55.50 (GNEISS), BEDROCK; biotite, quartz, feldspar, light to dark gray, strong to medium strong, fresh to slightly weathered, locally contains iron staining and garnets <i>(Continued)</i>	BR	[Red wavy lines]		6		4.35 7.50		<p>B-104D Borehole Diameter: 4" WELL CASING Interval: 0'-60' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 50'-60' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 47.15'-60.0' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 44'-47.15' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-44' Type: AquaGuard Bentonite Grout Quantity: Approximately 40 gallons</p> <p>NOTES</p>
55		55.50 - 60.00 (SCHIST), BEDROCK; quartz, muscovite, gray to silver, medium grain, medium strong, fresh to moderately weathered	BR	[Black diagonal lines]	55.50	7	ROTO SONIC	6.15 7.50		
60		Boring completed at 60.00 ft								
65										
70										
75										
80										
85										
90										
95										
100										

BOREHOLE RECORD - MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-105D

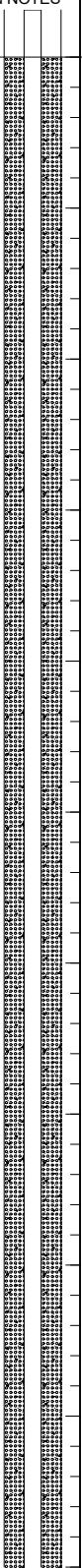
SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 70.00 ft
 LOCATION: East of DGWC-40

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/18/20
 DATE COMPLETED: 10/19/20

NORTHING: 1390634.5
 EASTING: 2201831.9
 GS ELEVATION: 776.0 ft
 TOC ELEVATION: 779.01 ft

DEPTH W.L.: 22.50
 ELEVATION W.L.: 756.5
 DATE W.L.: 10/19/2020
 TIME W.L.: 0950

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air knife; FILL	FILL	[Cross-hatched pattern]					Stick-up - 	B-105D Borehole Diameter: 4" WELL CASING Interval: 0'-70' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 60'-70' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 57.5'-60.0' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 53.75'-57.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-53.75' Type: AquaGuard Bentonite GROUT Quantity: Approximately 80 gallons NOTES
10		10.00 - 15.00 (ML), SILT; red to orange brown, some clay, low plasticity, dry to moist, w<PL, soft to firm, FILL	CL-ML	[Diagonal lines pattern]	10.00					
15		15.00 - 27.00 (ML), SILT; olive brown to silvery brown, low plasticity, moist, firm, w<PL, contains muscovite		[Vertical lines pattern]	15.00	1	ROTO SONIC	9.25 10.00		
20			ML	[Vertical lines pattern]		2	ROTO SONIC	6.00 7.50		
27		27.00 - 27.50 (CL), CLAY; white, medium plasticity, firm, moist, w<PL, possible WT	CL	[Horizontal lines pattern]	27.50					
27.5		27.50 - 32.50 (ML), SILT; gray/brown, fine grain, low to medium plasticity, moist, w~PL, soft to firm	ML	[Vertical lines pattern]						
32.5		32.50 - 33.80 (SM), SILTY SAND; non-plastic to low plasticity, dry to moist, fine to coarse, w<PL, loose, sand is mica (biotite/muscovite)	SM	[Dotted pattern]	32.50	3	ROTO SONIC	8.50 10.00		
33.8		33.80 - 37.50 (ML), SILT; gray/brown, fine grain, low to moderate plasticity, moist, w~PL, soft to firm	ML	[Vertical lines pattern]	33.80					
37.5		37.50 - 40.00 (ML), SILT; whitish gray, trace fine sand, low plasticity, moist to dry, w~PL, firm/compact, high feldspar	ML	[Vertical lines pattern]	37.50	4	ROTO SONIC	2.50 2.50		
40		40.00 - 45.00 (SM), SILTY SAND; brown to black, non-plastic to low plasticity, moist, w<PL, fine to coarse, compact to loose. Sand particles size is mica, not quartz.	SM	[Dotted pattern]	40.00	5	ROTO SONIC	5.00 5.00		
45		45.00 - 50.00 (SM), SILTY SAND; rock flour, trace gravels, tan brown, non-plastic, dry, fine to coarse, w<PL, loose, sand is micaceous, transitions to TWR from 48.8'-50.0'	SM	[Dotted pattern]	45.00	6	ROTO SONIC	5.00 5.00		

AquaGuard
Bentonite -
GROUT

Log continued on next page

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-105D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 70.00 ft
 LOCATION: East of DGWC-40

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/18/20
 DATE COMPLETED: 10/19/20

NORTHING: 1390634.5
 EASTING: 2201831.9
 GS ELEVATION: 776.0 ft
 TOC ELEVATION: 779.01 ft

DEPTH W.L.: 22.50
 ELEVATION W.L.: 756.5
 DATE W.L.: 10/19/2020
 TIME W.L.: 0950

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE			REC
50		50.00 - 55.00 (SM), SILTY SAND; brown to black, low to medium plasticity, moist to dry, w<PL, loose/soft, materials is from gneiss (relief structure), TWR	SM	[Graphic Log: Dotted pattern]	50.00	7	ROTO SONIC	5.00 5.00	<p style="font-size: small;">3/8" Uncoated Pel-Plug Sand Filter Pack U-Pack Screen</p>	<p>B-105D Borehole Diameter: 4" WELL CASING Interval: 0'-70' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 60'-70' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 57.5'-60.0' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 53.75'-57.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-53.75' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
55		55.00 - 70.00 (GNEISS), BEDROCK; light to dark gray, fine to medium grain, well foliated, poorly jointed, fresh to slightly weathered, strong to medium strong	BR	[Graphic Log: Red wavy lines]	55.00	8	ROTO SONIC	2.75 3.50		
60						9	ROTO SONIC	4.80 6.50		
65						10	ROTO SONIC	4.25 5.00		
70		Boring completed at 70.00 ft								
75										
80										
85										
90										
95										
100										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-106D


SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 80.00 ft
 LOCATION: North of DGWC-8

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/12/20
 DATE COMPLETED: 11/13/20

NORTHING: 1394327.1
 EASTING: 2203869.2
 GS ELEVATION: 823.5 ft
 TOC ELEVATION: 826.21 ft

DEPTH W.L.: 37.0
 ELEVATION W.L.: 789.2
 DATE W.L.: 11/13/2020
 TIME W.L.: 1652

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air knife; FILL	FILL						Stick-up - 	B-106D Borehole Diameter: 4" WELL CASING Interval: 0'-80' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 69.4'-79.4' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 66.61'-80' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 62.85'-66.61' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-62.85' Type: AquaGuard Bentonite Grout Quantity: NOTES
10		10.00 - 16.75 (ML), SILT; some fine to medium sand, some gravel, moist, firm, w<PL, low to medium plasticity	ML		10.00	1	ROTO SONIC	8.20 10.00		
16.75		16.75 - 18.10 (ML), SILT; some coarse sand, moist, stiff, w<PL	ML		16.75					
18.10		18.10 - 20.00 (CL), CLAY; red to red-brown, some coarse sand, dry to moist, w<PL, soft, some muscovite, Fill	CL		18.10					
20		20.00 - 28.00 (ML), SILT; brown, some fines, very fine to coarse sand, wet, soft to very soft, w<PL, medium plasticity,	ML		20.00	2	ROTO SONIC	10.00 10.00		
28		28.00 - 30.00 (SP), SAND; uniformly graded, some silt, non-cohesive, loose, moist, non-plastic	SP		28.00					
30		30.00 - 32.00 (SM), SILTY SAND; brown, trace gravel, dry to moist, cohesive, firm to stiff, w<PL, low plasticity, some crenulations, saprolitic	SM		30.00	3	ROTO SONIC	5.00 5.00		
32		32.00 - 35.00 (SM), SILTY SAND; dry to moist, cohesive, firm to stiff, w~PL, low to medium plasticity	SM		32.00					
35		35.00 - 40.00 (ML), SANDY SILT; brown, fine to coarse sand, micas, firm to stiff, w>PL, dry to wet	ML		35.00	4	ROTO SONIC	5.00 5.00		
40		40.00 - 45.00 (SM), SILTY SAND; brown, fine to coarse sand, some gravel, schist, quartz vein fragments, micas, firm to stiff, w<PL, moist, medium plasticity	SM		40.00	5	ROTO SONIC	5.00 5.00		
45		45.00 - 47.00 (SM), SILTY SAND; brown, fine to coarse sand, some gravel, schist, quartz vein fragments, micas, stiff to very stiff, w>PL, moist, medium plasticity, saprolitic	SM		45.00	6	ROTO SONIC	2.00		
47		47.00 - 60.00 NO RECOVERY; material too loose and continues to fall out of core barrel	NR		47.00	7	ROTO SONIC	0.00 13.00		

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



Log continued on next page

RECORD OF BOREHOLE B-106D

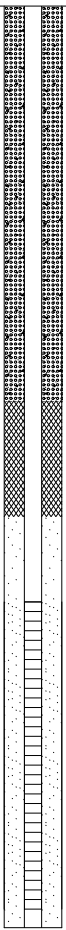
SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 80.00 ft
 LOCATION: North of DGWC-8

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/12/20
 DATE COMPLETED: 11/13/20

NORTHING: 1394327.1
 EASTING: 2203869.2
 GS ELEVATION: 823.5 ft
 TOC ELEVATION: 826.21 ft

DEPTH W.L.: 37.0
 ELEVATION W.L.: 789.2
 DATE W.L.: 11/13/2020
 TIME W.L.: 1652

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
50		47.00 - 60.00 NO RECOVERY; material too loose and continues to fall out of core barrel (Continued)	NR			7	ROTO SONIC	0.00 13.00	 <p style="font-size: small; text-align: center;">3/8" Uncoated - Pel-Plug</p> <p style="font-size: small; text-align: center;">Sand Filter Pack</p> <p style="font-size: small; text-align: center;">U-Pack Screen</p>	<p>B-106D Borehole Diameter: 4" WELL CASING Interval: 0'-80' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 69.4'-79.4' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 66.61'-80' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 62.85'-66.61' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-62.85' Type: AquaGuard Bentonite Grout Quantity:</p> <p>NOTES</p>
55										
60		60.00 - 65.00 (SCHIST), BEDROCK; silvery blue, well foliated, poorly jointed, moderate to deeply weathered, weak to medium strong rock, iron staining	BR	[Graphic Log]	60.00	8	ROTO SONIC	1.60 5.00		
65		65.00 - 75.00 (BIOTITE GNEISS), BEDROCK; light gray to dark gray, zones of muscovite schistosity, very fine grain, moderate to poor foliation, poorly jointed, fresh to moderately weathered, medium strong, iron staining, feldspar, quartz, muscovite	BR	[Graphic Log]	65.00	9	ROTO SONIC	5.20 10.00		
70										
75		75.00 - 80.00 (BIOTITE GNEISS), BEDROCK; light gray to dark gray, zones of muscovite schistosity, very fine grain, moderate to poor foliation, poorly jointed, fresh to moderately weathered, medium strong, iron staining, feldspar, quartz	BR	[Graphic Log]	75.00	10	ROTO SONIC	3.40 5.00		
80		Boring completed at 80.00 ft								
85										
90										
95										
100										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-107D

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 85.75 ft
 LOCATION: Southwest of DGWC-19

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/28/20
 DATE COMPLETED: 10/28/20

NORTHING: 1392334.5
 EASTING: 2202596.4
 GS ELEVATION: 820.6 ft
 TOC ELEVATION: 823.38 ft

DEPTH W.L.: 21.8
 ELEVATION W.L.: 801.6
 DATE W.L.: 10/28/2020
 TIME W.L.: 1440

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air knife; FILL	FILL						Stick-up -	<p>B-107D Borehole Diameter: 4" WELL CASING Interval: 0'-85.1' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 75.1'-85.1' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 72.25'-85.5' Type: FilterSil Quantity: 4, 5-50 lbs bags FILTER PACK SEAL Interval: 68.8'-72.25' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon ANNULUS SEAL Interval: 0'-68.8' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
5										
10		10.00 - 20.00 (CL-ML), SILTY and CLAY; red brown to brown, trace sand, low to medium plasticity, soft to firm, moist, contains muscovite	CL-ML		10.00	1	ROTO SONIC	7.00 10.00		
15										
20		20.00 - 38.00 (SM), SILTY SAND; brown to tannish brown, trace sand, w<PL, low plasticity, loose to compact, large grains of muscovite	SM		20.00	2	ROTO SONIC	4.30 10.00		
25										
30			SM							
35						3	ROTO SONIC	10.00 10.00	AquaGuard Bentonite - Grout	
40		38.00 - 40.00 (SM), SILTY SAND; black and silverish gray, fine to medium, non-plastic, w<PL, loose sand, moist,	SM		38.00					
45		40.00 - 50.00 (SM-ML), SILTY SAND to SILT; brown to silverish brown, moist to wet, w<PL, soft to stiff	SM		40.00	4	ROTO SONIC	9.00 10.00		
50		Log continued on next page								

BOREHOLE RECORD - MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-107D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 85.75 ft
 LOCATION: Southwest of DGWC-19

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/28/20
 DATE COMPLETED: 10/28/20

NORTHING: 1392334.5
 EASTING: 2202596.4
 GS ELEVATION: 820.6 ft
 TOC ELEVATION: 823.38 ft

DEPTH W.L.: 21.8
 ELEVATION W.L.: 801.6
 DATE W.L.: 10/28/2020
 TIME W.L.: 1440

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
50		50.00 - 60.00 (SM-ML), SILTY SAND to SILT; brown to silverish brown, moist to wet, w<PL, soft to stiff	SM		50.00	5	ROTO SONIC	6.00 10.00		<p>B-107D Borehole Diameter: 4" WELL CASING Interval: 0'-85.1' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 75.1'-85.1' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 72.25'-85.5' Type: FilterSil Quantity: 4.5-50 lbs bags FILTER PACK SEAL Interval: 68.8'-72.25' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon ANNULUS SEAL Interval: 0'-68.8' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
55										
60		60.00 - 67.00 NO RECOVERY; material was washed away by coring methods. Material from 63' to 67' is inferred as TWR.	NR		60.00	6	ROTO SONIC	0.00 7.00		
65										
70		67.00 - 75.00 (GNEISS), BEDROCK; dark gray to black, well foliated, poorly jointed, slightly to deeply weathered, weak to medium strong, feldspar, quartz, muscovite,	BR		67.00	7	ROTO SONIC	6.70 8.00		
75		75.00 - 85.75 (GNEISS), BEDROCK; dark gray to black, well foliated, poorly jointed, slightly to deeply weathered, weak to medium strong, feldspar, quartz, muscovite,	BR		75.00	8	ROTO SONIC	6.80 10.75		
80								U-Pack Screen		
85		Boring completed at 85.75 ft			85.75					
90										
95										
100										

BOREHOLE RECORD - MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-108D

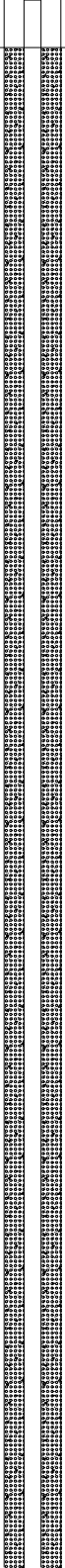
SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 80.00 ft
 LOCATION: Next to DGWC-20

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/26/20
 DATE COMPLETED: 10/27/20

NORTHING: 1392156.1
 EASTING: 2202312.5
 GS ELEVATION: 818.4 ft
 TOC ELEVATION: 821.13 ft

DEPTH W.L.: 17.7
 ELEVATION W.L.: 803.43
 DATE W.L.: 10/27/2020
 TIME W.L.: 0915

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE			REC
0		0.00 - 10.00 Air knife; FILL	FILL					Stick-up - 	B-108D Borehole Diameter: 4" WELL CASING Interval: 0'-80.0' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 69'-79' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 65.85'-79' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 62.5'-65.85' Type: 3/8" Uncoated Pel-Plug Quantity: 1- 5 gallon bucket ANNULUS SEAL Interval: 0'-62.5' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons NOTES	
10		10.00 - 12.00 (CL), CLAY;w<PL, low plasticity, moist to wet, Fill	CL		10.00					
15		12.00 - 20.00 (ML), SILT; tannish brown with black spots, trace fine sand, w<PL, non-plastic to low plasticity, compact to firm, moist	ML		12.00	1	ROTO SONIC			10.00 10.00
20		20.00 - 30.00 (ML), SILT; tannish brown with black/silver spots, trace to some fine sand, w<PL, low plasticity, dry to moist, firm, saprolite, deeply weather biotite gneiss	ML		20.00	2	ROTO SONIC			9.50 10.00
30		30.00 - 40.00 (ML-SM), SILT and SILTY SAND; silverish brown, trace clay, w<PL, nonplastic to low plasticity, moist, firm to stiff, contains muscovite, saprolite	SM		30.00	3	ROTO SONIC			8.00 10.00
40		40.00 - 50.00 (ML-SM), SILT and SILTY SAND; silverish brown, trace clay, w<PL, nonplastic to low plasticity, moist, soft to firm, contains muscovite, saprolite	SM		40.00	4	ROTO SONIC	6.75 10.00		
50		Log continued on next page						AquaGuard Bentonite Grout		

BOREHOLE RECORD_MCDONOUGH MASTER LIST (2).GPJ_PIEDMONT.GDT_2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-108D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 80.00 ft
 LOCATION: Next to DGWC-20

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 10/26/20
 DATE COMPLETED: 10/27/20

NORTHING: 1392156.1
 EASTING: 2202312.5
 GS ELEVATION: 818.4 ft
 TOC ELEVATION: 821.13 ft

DEPTH W.L.: 17.7
 ELEVATION W.L.: 803.43
 DATE W.L.: 10/27/2020
 TIME W.L.: 0915

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE		
50		50.00 - 51.00 (SP), SAND; black to dark gray, w<PL, non-plastic, firm, loose, wet 51.00 - 57.50 (ML), SILT; gray to brown, w<PL, low plasticity, firm to stiff, moist, saprolite	SP	50.00	5	ROTO SONIC	7.50	<p style="font-size: small;">3/8" Uncoated Pel-Plug</p> <p style="font-size: small;">Sand Filter Pack</p> <p style="font-size: small;">U-Pack Screen</p>	<p>B-108D Borehole Diameter: 4" WELL CASING Interval: 0'-80.0' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 69'-79' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 65.85'-79' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 62.5'-65.85' Type: 3/8" Uncoated Pel-Plug Quantity: 1- 5 gallon bucket ANNULUS SEAL Interval: 0'-62.5' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
55			ML	51.00			7.50		
60		57.50 - 65.00 (GNEISS), BEDROCK; dark brown to gray, well foliated, poorly jointed, deeply weathered, weak rock, iron staining	BR	57.50	6	ROTO SONIC	1.25 7.50		
65		65.00 - 75.00 (GNEISS), BEDROCK; dark brown to gray, well foliated, poorly jointed, fresh to slightly weathered, medium strong rock, iron staining	BR	65.00	7	ROTO SONIC	6.55 10.00		
70		75.00 - 80.00 (GNEISS), BEDROCK; dark brown to gray, well foliated, poorly jointed, fresh to slightly weathered, medium strong rock, iron staining	BR	75.00	8	ROTO SONIC	4.80 5.00		
75		Boring completed at 80.00 ft							
80									
85									
90									
95									
100									

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-109D

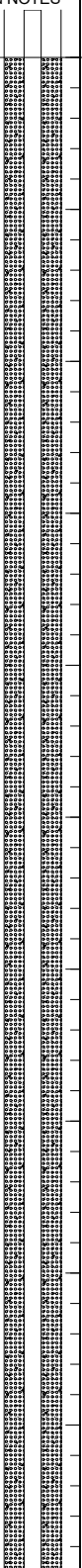
SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 100.00 ft
 LOCATION: Next to DGWC-2

DRILL RIG: Geoprobe 8140LS
 DATE STARTED: 10/30/20
 DATE COMPLETED: 10/31/20

NORTHING: 1393957.5
 EASTING: 2202127
 GS ELEVATION: 847.8 ft
 TOC ELEVATION: 850.73 ft

DEPTH W.L.: 23.50
 ELEVATION W.L.: 827.2
 DATE W.L.: 10/31/2020
 TIME W.L.: 1157

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0	0.00	0.00 - 10.00 Air knife; FILL	FILL	[Cross-hatched pattern]					Stick-up - 	B-109D Borehole Diameter: 4" WELL CASING Interval: 0'-100' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 86.4'-99.4' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 86.5'-99.4' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 83.9'-86.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-83.9' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons NOTES
10	10.00	10.00 - 13.50 (ML). SILT; brown, soft,	ML	[Vertical lines pattern]	10.00					
15	13.50	13.50 - 20.00 (CL). CLAY; red to red brown, trace sand, medium plasticity, w<PL, firm, moist to dry,	CL	[Diagonal lines pattern]	13.50	1	ROTO SONIC	10.00 10.00		
20	20.00	20.00 - 30.00 (SM). SILTY SAND; gray to reddish gray, fine to medium, loose to soft, dry to moist, w<PL, low plasticity, quartz, biotite, feldspar	SM	[Dotted pattern]	20.00	2	ROTO SONIC	3.70 10.00		
30	30.00	30.00 - 36.00 (SM). SILTY SAND; gray to reddish gray, some clay, fine to medium, loose to soft, dry to moist, w<PL, low plasticity, quartz, biotite, feldspar	SM	[Dotted pattern]	30.00	3	ROTO SONIC	6.00 6.00		
36	36.00	36.00 - 40.00 (CL). CLAY; black to dark gray, low plasticity, w<PL, very soft to hard, dry to moist, saprolite, biotite gneiss, saprolite,	CL	[Diagonal lines pattern]	36.00	4	ROTO SONIC	4.00 4.00		
40	40.00	40.00 - 45.00 (TWR). TRANSITIONALLY WEATHERED ROCK; black to dark gray, silt with some fine sand, trace gravels, low plasticity, w<PL, soft, moist to wet, biotite gneiss fragments	TWR	[Triangle pattern]	40.00	5	ROTO SONIC	2.20 5.00		
45	45.00	45.00 - 46.00 (GRANITE). BEDROCK; biotite, feldspar, quartz, white to light gray, fine grain, quartz veins, weakly foliated, poorly jointed, fresh to slightly weathered, medium strong	BR	[Pink pattern]	45.00	6	ROTO SONIC	4.20 10.00		
50	46.00	46.00 - 55.00 (GNEISS). BEDROCK; feldspar, quartz, biotite, black to dark gray, well foliated, poorly jointed fresh to slightly weathered, medium strong to weak, iron staining	BR	[Red pattern]	46.00					

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



Log continued on next page

RECORD OF BOREHOLE B-109D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 100.00 ft
 LOCATION: Next to DGWC-2

DRILL RIG: Geoprobe 8140LS
 DATE STARTED: 10/30/20
 DATE COMPLETED: 10/31/20

NORTHING: 1393957.5
 EASTING: 2202127
 GS ELEVATION: 847.8 ft
 TOC ELEVATION: 850.73 ft

DEPTH W.L.: 23.50
 ELEVATION W.L.: 827.2
 DATE W.L.: 10/31/2020
 TIME W.L.: 1157

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
50		46.00 - 55.00 (GNEISS), BEDROCK; feldspar, quartz, biotite, black to dark gray, well foliated, poorly jointed fresh to slightly weathered, medium strong to weak, iron staining (<i>Continued</i>)	BR	[Red wavy lines]		6	ROTO SONIC	4.20 10.00		<p>B-109D Borehole Diameter: 4" WELL CASING Interval: 0'-100' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 88.4'-99.4' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 86.5'-99.4' Type: FilterSil Quantity: 4-50 lbs bags FILTER PACK SEAL Interval: 83.9'-86.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-83.9' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
55		55.00 - 65.00 (GNEISS), BEDROCK; feldspar, quartz, biotite, black to dark gray, well foliated, poorly jointed, fresh to slightly weathered, medium strong to weak, iron staining. Pegmatitic zone 57.75' - 58.75' bgs (biotite, quartz, feldspar).	BR	[Red wavy lines]	55.00	7	ROTO SONIC	8.25 10.00		
60			BR	[Red wavy lines]		8	ROTO SONIC	10.00 10.00		
65		65.00 - 80.00 (GNEISS), BEDROCK; quartz, feldspar, biotite, black to dark gray, well foliated, poorly jointed fresh to slightly weathered, medium strong to weak, iron staining.	BR	[Red wavy lines]	65.00	9	ROTO SONIC	5.00 5.00		
70			BR	[Red wavy lines]		10	ROTO SONIC	4.25 5.00		
75		80.00 - 85.00 (GNEISS), BEDROCK; feldspar, quartz, biotite, black to dark gray, well foliated, poorly jointed, fresh, fine to medium grain, medium strong, iron staining, locally contains chlorite	BR	[Red wavy lines]	80.00	11	ROTO SONIC	5.00 5.00		
80		85.00 - 100.00 (GNEISS), BEDROCK; feldspar, quartz, biotite, green when dry and dark gray to black when wet, well foliated, poorly jointed fresh, fine to medium grain, medium strong, iron staining, locally contains chlorite and epidote	BR	[Red wavy lines]	85.00	12	ROTO SONIC	8.40 10.00		
85			BR	[Red wavy lines]				3/8" Uncoated Pel-Plug		
90			BR	[Red wavy lines]				Sand Filter Pack		
95			BR	[Red wavy lines]				U-Pack Screen		
100		Boring completed at 100.00 ft								

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-110D

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 65.00 ft
 LOCATION: Next to DGWC-68A

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/14/20
 DATE COMPLETED: 11/17/20

NORTHING: 1391294.4
 EASTING: 2200736
 GS ELEVATION: 764.7 ft
 TOC ELEVATION: 764.61 ft

DEPTH W.L.: 9.35
 ELEVATION W.L.: 755.3
 DATE W.L.: 11/17/2020
 TIME W.L.: 1110

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE		
0		0.00 - 5.00 Hand Auger 0'-10'; core loss from 0'-5',	NR					Flush mount -	<p>B-110D Borehole Diameter: 4" WELL CASING Interval: 0'-65' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 53'-63' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 50.5'-63' Type: FilterSil Quantity: 3.5-50 lbs bags FILTER PACK SEAL Interval: 46'-50.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-46' Type: AquaGuard Bentonite Grout Quantity: Approximately 85 gallons</p> <p>NOTES</p>
5		5.00 - 8.50 (CL), CLAY; reddish brown to yellowish orange, trace to some fine to medium sand, moist, low plasticity, w<PL, soft to firm, Fill	CL	[Diagonal Hatching]	5.00	1	ROTO SONIC	7.00 12.00	
10		8.50 - 12.00 (ML), SILT; brown to dark brown, trace fine sand, moist, non-plastic, w<PL, soft	ML	[Vertical Lines]	8.50				
15		12.00 - 20.00 (ML), SILT; brown to dark brown, some fine sand, moist, non-plastic, w<PL, soft	ML	[Vertical Lines]	12.00	2	ROTO SONIC	3.00 8.00	
20		20.00 - 25.00 (ML), SILT; brown to dark brown, some fine sand, moist, non-plastic, w<PL, firm to stiff	ML	[Vertical Lines]	20.00	3	ROTO SONIC	3.00 5.00	
25		25.00 - 35.00 NO RECOVERY; material too loose and soft to stay in core barrel	NR		25.00	4	ROTO SONIC	0.00 10.00	
35		35.00 - 45.00 (GNEISS), BEDROCK; biotite, feldspar, quartz, light gray to white, well foliated, poorly jointed, fine-to medium-grained, fresh to slightly weathered, strong rock, locally contains vein quartz and garnets	BR	[Red Wavy Hatching]	35.00	5	ROTO SONIC	6.40 10.00	
45		45.00 - 55.00 (GNEISS), BEDROCK; biotite, feldspar, quartz, light gray to white, well foliated, poorly jointed, veing quartz, fine to medium-grained, fresh to slightly weathered, strong rock, zones of fine-grained biotite	BR	[Red Wavy Hatching]	45.00	6	ROTO SONIC	8.70 10.00	
50		Log continued on next page						3/8" Uncoated Pel-Plug	

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-110D

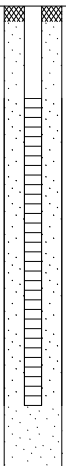
SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 65.00 ft
 LOCATION: Next to DGWC-68A

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/14/20
 DATE COMPLETED: 11/17/20

NORTHING: 1391294.4
 EASTING: 2200736
 GS ELEVATION: 764.7 ft
 TOC ELEVATION: 764.61 ft

DEPTH W.L.: 9.35
 ELEVATION W.L.: 755.3
 DATE W.L.: 11/17/2020
 TIME W.L.: 1110

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
50		45.00 - 55.00 (GNEISS), BEDROCK; biotite, feldspar, quartz, light gray to white, well foliated, poorly jointed, veing quartz, fine to medium-grained, fresh to slightly weathered, strong rock, zones of fine-grained biotite <i>(Continued)</i>	BR			6	ROTO SONIC	8.70 10.00		<p>B-110D Borehole Diameter: 4" WELL CASING Interval: 0'-65' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 53'-63' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 50.5'-63' Type: FilterSil Quantity: 3.5-50 lbs bags FILTER PACK SEAL Interval: 46'-50.5' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-46' Type: AquaGuard Bentonite Grout Quantity: Approximately 85 gallons</p> <p>NOTES</p>
55		55.00 - 60.00 (GNEISS), BEDROCK; biotite, feldspar, quartz, light gray to white, well foliated, poorly jointed, veing quartz, fine to medium grain, fresh to slightly weathered, strong rock, local zones of fine-grained biotite	BR		55.00	7	ROTO SONIC	5.00 5.00		
60		60.00 - 65.00 (GNEISS), BEDROCK; biotite, feldspar, quartz, light gray to white, well foliated, poorly jointed, veing quartz, fine-to medium-grained, fresh to slightly weathered, strong rock, local zones of fine grained biotite	BR		60.00	8	ROTO SONIC	4.00 5.00		
65		Boring completed at 65.00 ft								
70										
75										
80										
85										
90										
95										
100										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2).GPJ - PIEDMONT.GDT 2/3/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-111D

SHEET 1 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 85.00 ft
 LOCATION: West of DGWC-5

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/1/20
 DATE COMPLETED: 11/3/20

NORTHING: 1394303.4
 EASTING: 2202956.4
 GS ELEVATION: 789.1 ft
 TOC ELEVATION: 791.87 ft

DEPTH W.L.: 8.9
 ELEVATION W.L.: 755.30
 DATE W.L.: 11/3/2020
 TIME W.L.: 0815

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE				SAMPLES			MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	REC		
0		0.00 - 10.00 Air Knife; Fill	FILL						Stick-up -	<p>B-111D Borehole Diameter: 6" WELL CASING Interval: 0'-85' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 74.15'-84.15' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 72.1'-84.15' Type: FilterSil Quantity: 3-50 lbs bags FILTER PACK SEAL Interval: 68.7'-72.1' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-68.7' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>
5										
10		10.00 - 15.00 (ML), SILT; tan to brown, trace fine to coarse sand, moist to wet, soft, low plasticity, w<PI, saprolite	ML		10.00					
15		15.00 - 20.00 (ML), SILT; gray and green to brown, low plasticity, w<PL, moist, soft to firm	ML		15.00	1	ROTO SONIC	10.00 10.00		
20		20.00 - 26.00 (ML), SILT; gray and green to brown, low plasticity, w<PL, moist, soft to firm, more saprolitic	ML		20.00					
25						2	ROTO SONIC	8.00 8.00		
30		26.00 - 27.00 (TWR), TRANSITIONALLY WEATHERED ROCK; silt, gray and green to brown, low plasticity, w<PL, moist, soft to firm, saprolitic, locally contains gravels of augen biotite gneiss	TWR		26.00					
30		27.00 - 34.00 (GNEISS), BEDROCK; quartz, feldspar, biotite, white to dark gray, moderately weathered, medium strong, iron staining, locally contains augened feldspars	BR		27.00	3	ROTO SONIC	1.00 2.00	AquaGuard Bentonite - Grout	
35		34.00 - 51.50 (GNEISS), BEDROCK; biotite, quartz, feldspar, white to light gray, well foliated, poorly jointed, fresh to slightly weathered, medium strong, iron staining, locally contains K-spar augens	BR		34.00	4	ROTO SONIC	2.20 4.00		
40						5	ROTO SONIC	1.70 6.00		
45						6	ROTO SONIC	10.00 10.00		
50		Log continued on next page								

BOREHOLE RECORD: MCDONOUGH MASTER LIST (2) (3) (1).GPJ PIEDMONT.GDT 2/10/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



RECORD OF BOREHOLE B-111D

SHEET 2 of 2

PROJECT: Plant McDonough
 PROJECT NUMBER: 1668496.18
 DRILLED DEPTH: 85.00 ft
 LOCATION: West of DGWC-5

DRILL RIG: Geoprobe 8140LC
 DATE STARTED: 11/1/20
 DATE COMPLETED: 11/3/20

NORTHING: 1394303.4
 EASTING: 2202956.4
 GS ELEVATION: 789.1 ft
 TOC ELEVATION: 791.87 ft

DEPTH W.L.: 8.9
 ELEVATION W.L.: 755.30
 DATE W.L.: 11/3/2020
 TIME W.L.: 0815

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES			MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE			REC
50			BR		51.50			<p style="font-size: small; margin-top: 10px;">3/8" Uncoated Pel-Plug</p> <p style="font-size: small; margin-top: 10px;">Sand Filter Pack</p> <p style="font-size: small; margin-top: 10px;">U-Pack Screen</p>	<p>B-111D Borehole Diameter: 6" WELL CASING Interval: 0'-85' Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw fit with rubber seam WELL SCREEN Interval: 74.15'-84.15' Material: Schedule 40 PVC Diameter: 2" Slot Size: .010" End Cap: Schedule 40 PVC FILTER PACK Interval: 72.1'-84.15' Type: FilterSil Quantity: 3-5 lbs bags FILTER PACK SEAL Interval: 68.7'-72.1' Type: 3/8" Uncoated Pel-Plug Quantity: 1-5 gallon bucket ANNULUS SEAL Interval: 0'-68.7' Type: AquaGuard Bentonite Grout Quantity: Approximately 80 gallons</p> <p>NOTES</p>	
55		51.50 - 58.00 (GNEISS), BEDROCK; feldspar, quartz, biotite, white to light gray, well foliated, poorly jointed, fresh to slightly weathered, medium strong, locally contains epidote	BR			7	ROTO SONIC			7.00 10.00
60		58.00 - 85.00 (GNEISS), BEDROCK; biotite, feldspar, quartz, white to light gray, well foliated, poorly jointed, fresh to slightly weathered, medium to strong,	BR		58.00					
65						8	ROTO SONIC			5.00 5.00
70						9	ROTO SONIC			5.00 5.00
75						10	ROTO SONIC			5.00 5.00
80						11	ROTO SONIC			10.00 10.00
85		Boring completed at 85.00 ft								
90										
95										
100										

BOREHOLE RECORD MCDONOUGH MASTER LIST (2) (3) (1).GPJ PIEDMONT.GDT 2/10/21

LOG SCALE: 1 in = 6.5 ft
 DRILLING COMPANY: Cascade Drilling
 DRILLER: Fred Dorse

GA INSPECTOR: Michael Boatman, PG
 CHECKED BY: Timothy Richards, PG
 DATE: 2/3/21



WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 2 Plant McDonough
 WELL DIA (in) _____
 DEVELOPED BY Yong Cheng So
 STARTED LEVEL 12/7/20 3:10 pm
DATE TIME
 W.L. BEFORE DEVEL 26.16 12/7 2:51 pm
WL DATE TIME
 WELL DEPTH BEFORE DEVEL 77.8
DATE TIME
 STANDING WATER COLUMN (FT.) 51.64
 SCREEN LENGTH 10

WELL ID: B-101 D
 DATE OF INSTALL _____
 COMPLETED LEVEL _____
DATE TIME
 W.L. AFTER DEVEL _____
WL DATE TIME
 WELL DEPTH AFTER DEVEL _____
 STANDING WELL VOLUME _____ gal
 DRILLING WATER LOSS _____ gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft bgs)	FIELD PARAMETERS							REMARKS	
				pH (s.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
12/7/20 3:10 pm	-	0.5	54.48									pump @ 75'
3:20 pm	5	0										stop pump for 2 1/2 mins
3:44 pm	.	0.5	64.02	7.44	0.28	9.63	14.3		11.24	96.2		getting dry, air trapped in tube
3:55 pm		0.38	71.5									
4:11 pm		"	72									
4:19 pm		0	69.51									
4:27 pm		0	67.6									
4:38 pm		0.5	67.7									
4:45 pm		"	71.8									
4:48	10	0	72									stop pumping.
= TOTAL VOLUME REMOVED (gal)												

DEVELOPMENT METHOD: surging and reclaimer pump

NOTES: stop development to allow recharge.

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER Plant McDonough
 WELL DIA (in) 2
 DEVELOPED BY Yongcheng Suo
 STARTED LEVEL 12/8/2020, 8:50
 W.L. BEFORE DEVEL 26.22 12/8, 8:46
 WELL DEPTH: BEFORE DEVEL _____
 STANDING WATER COLUMN (FT.) 10
 SCREEN LENGTH _____

WELL ID: B-101D
 DATE OF INSTALL _____
 COMPLETED LEVEL _____
 WL AFTER DEVEL _____
 WELL DEPTH: AFTER DEVEL _____
 STANDING WELL VOLUME _____ gal
 DRILLING WATER LOSS _____ gal

12/8/20

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft bgs)	FIELD PARAMETERS							REMARKS	
				pH (s.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
15:10		-	49.20									
15:15	0.25	48.48										
15:20	0.25	55.50										
15:25	0.25	63.36	6.38	0.52	14.62	19.9			3.34	80.8		pump @ 68'
15:30	0.25	65.30	6.26	0.52	14.28	14.5			3.28	80.5		
15:35	0.25	65.30	6.19	0.52	14.52	5			4.06	80.5		
15:50	0.25											
16:05	0.25											
16:20	0.25											
16:45												

drop pump to 68' & purge dry
 400 mL/min

purge dry.

= TOTAL VOLUME REMOVED (gal.)

DEVELOPMENT METHOD: surging and reclaimer pump

NOTES: _____

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER Plant McDonough

WELL ID: B-101D

WELL DIA (in) 2

DEVELOPED BY Yong Cheng Soo

DATE OF INSTALL. _____

STARTED DEVEL. 12/15/2020

COMPLETED DEVEL. _____

WL BEFORE DEVEL. 26.2 12/15 1226

WL AFTER DEVEL. _____

WELL DEPTH BEFORE DEVEL. _____

WELL DEPTH AFTER DEVEL. _____

STANDING WATER COLUMN (FT.) _____

STANDING WELL VOLUME _____ gal.

SCREEN LENGTH 10

DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft bgs)	FIELD PARAMETERS							REMARKS
				pH (a.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	
12/15/20 1230	0	400 ml/min	26.2	REBEGIN DEVELOPMENT							@ 2' above well bottom
1240		"	24.2	6.51	0.26	15.42	71.2		7.68	212.4	
1300			25.86	6.37	0.60	16.81	48.2		4.12	141.0	
1315			38.14	6.50	0.62	14.60	45.2		9.49	162.3	
1330			40.10	6.26	0.60	15.02	53.5		4.04	144.90	
1340			41.81	6.50	0.60	15.82	48.9		4.30	166.0	
1350			42.65	6.41	0.57	18.76	62.3		3.52	159.9	
1400			42.60	6.33	0.58	17.01	46.7		4.09	134.5	turbidity = 41.8
1410			42.80	6.33	0.58	16.01	49.9		3.85	149.9	
1420			42.80	6.34	0.57	19.34	49.6		3.72	133.3	@ 5' from bottom
1430			45.18	6.40	0.57	16.36	67.8		3.90	151.6	
1440	2.8 L		47.12	6.19	0.55	17.16	73.6		3.69	132.2	
1450	3.2 L	250	49.48	6.14	0.55	17.49	71.0		3.75	120.1	
1500		250	49.71	6.19	0.55	16.96	71.2		4.24	126.4	turbidity = 41.0
1510		250	49.92	6.25	0.54	17.70	71.7		4.00	123.6	turbidity = 63.2
1520			51.18	6.25	0.56	15.37	74.6		3.66	109.2	
1530			50.46	6.18	0.55	14.97	63.5		3.47	109.7	
1540			50.68	6.21	0.56	13.95	63.4		3.66	117.7	
1550	4.7 L		50.92	6.17	0.57	13.58	71.9		4.04	104.6	
1600			50.60	6.12	0.55	14.20	62.2		3.19	94.9	
1610			50.15	6.13	0.55	13.88	36.5		3.11	101.0	
1620			49.70	6.14	0.56	12.87	19.1		3.97	107.6	
1630			49.88	6.06	0.54	14.11	9.65		3.92	113.4	@ 8' from bottom
1640			49.10	6.10	0.55	12.99	28.2		3.67	117.4	
1650			49.42	6.05	0.55	14.00	39.8		3.11	122.9	
1805	50L	1000	49.50	6.14	0.56	12.93	61.1		4.04	137.7	@ 5' purge day
				= TOTAL VOLUME REMOVED (gal)							

DEVELOPMENT METHOD: surging and reclaimer pump

NOTES: _____

Product Name: Low-Flow System

Date: 2020-12-16 10:47:29

Project Information:

Operator Name Yong Cheng SoCo
Company Name Golder Associates Inc
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type polyethylene
Tubing Diameter .5 in
Tubing Length 72 ft

Pump placement from TOC 72 ft

Well Information:

Well ID B-101D
Well diameter 2 in
Well Total Depth 77.8 ft
Screen Length 10 ft
Depth to Water 34.56 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 2.869987 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 110.8 in
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	10:25:58	300.11	14.02	6.06	558.69	2.11	34.92	1.43	109.94
Last 5	10:30:58	600.02	14.29	6.04	559.33	1.41	35.06	1.34	103.54
Last 5	10:35:58	900.02	14.19	6.04	556.50	1.43	35.20	1.30	99.33
Last 5	10:41:02	1204.02	14.11	6.03	555.47	2.19	35.28	1.25	96.40
Last 5	10:46:02	1504.02	14.06	6.02	558.00	--	--	1.20	93.51
Variance 0			-0.10	-0.00	-2.83			-0.05	-4.21
Variance 1			-0.08	-0.01	-1.03			-0.05	-2.93
Variance 2			-0.05	-0.01	2.54			-0.05	-2.89

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-12-08 11:39:07

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type polyethylene
Tubing Diameter 0.50 in
Tubing Length 82 ft

Pump placement from TOC 82 ft

Well Information:

Well ID B-102D
Well diameter 2 in
Well Total Depth 87.45 ft
Screen Length 10 ft
Depth to Water 40.24 ft

Pumping Information:

Final Pumping Rate 500 mL/min
Total System Volume 3.256096 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:27:32	300.10	15.72	5.48	627.75	1.75	39.11	0.20	-102.06
Last 5	11:32:32	600.02	15.64	5.47	628.60	1.39	38.95	0.22	-25.16
Last 5	11:37:32	900.02	15.91	5.48	628.92	1.46	38.86	0.22	-7.38
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.08	-0.01	0.84			0.02	76.89
Variance 2			0.27	0.01	0.33			-0.00	17.78

Notes

Development low flow began after 32.5gal purged
Completed development at 1138

Grab Samples

WELL DEVELOPMENT FIELD RECORD

JOB NAME McDonough
 DEVELOPED BY S. Bradic
 STARTED DEVEL. 10/30/2010 10:30
DATE TIME
 W.L. BEFORE DEVEL. 28.15 10/30/09:52
DEPTH DATE TIME
 WELL DEPTH: BEFORE DEVEL. 74.6
 STANDING WATER COLUMN (FT.) _____
 SCREEN LENGTH 10

JOB NO. _____ WELL NO. B-103D
 DATE OF INSTALL. _____ SHEET 1 OF 3
 COMPLETED DEVEL. _____ / _____
DATE TIME
 AFTER DEVEL. _____ / _____
DEPTH DATE TIME
 AFTER DEVEL. _____ WELL DIA. (In) 2
 STANDING WELL VOLUME _____ gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS	
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)	Pump rate	DTW
10/30 10:30	0	883.5	17.99	8.42	13.2	0.25 gal/min	46.1 pump @
10/30 10:40	2.5	855.1	15.20	8.88	10.13	600 mL/min	51.7 pump @
10/30 10:45	3.25	854.1	16.82	8.91	8.65	600 mL/min	56.3 pump @
10/30 11:00	5.5	822.4	17.61	8.84	8.7	600 mL/min	63.5 pump @
10/30 11:15	7.75	903.1	18.06	8.70	61.5	400 mL/min	66.7 pump @
10/30 11:30	9.25	1099.1	16.78	8.53	30.8	400 mL/min	67.8 pump @
10/30 11:45	10.75	1256.2	16.70	8.14	18.7	400 mL/min	68.5 pump @
		paused to test recharge					
		= TOTAL VOLUME REMOVED (gal.)					

DEVELOPMENT METHOD: surging and reclaimer pump
1045 - pump surged, 3' from bottom

NOTES: Work stopped development to allow recharge

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166849618
 WELL DIA (in) 2
 DEVELOPED BY Young Chung So
 STARTED LEVEL 12/7 1 pm
 W.L. BEFORE DEVEL. 19.60, 12/7, 1054.
 WELL DEPTH BEFORE DEVEL. 74.19
 STANDING WATER COLUMN (FT.) 54.59.
 SCREEN LENGTH 10

WELL ID: B-103D
 DATE OF INSTALL. _____
 COMPLETED LEVEL. _____
 WL AFTER DEVEL. _____
 WELL DEPTH AFTER DEVEL. _____
 STANDING WELL VOLUME _____ gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft bgs)	FIELD PARAMETERS							REMARKS
				pH (a.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	
12/7/20 11:40pm 1:30pm	10	0.5		6.53	1.55	15.37	15.5		2.35	128	pump @ 7'
12/8 14:05	by Jule.		64.55								SOME WHOLE SCREEN (~4')
14:10 14:11	~500ml purged		69								BEGIN PUMPING END PUMPING - DRY
12/9 08:56 14:49			62.52 60.90								
12-10/1600			54.98								
12-14/1810			37.23								
12-15/1530			34.41								
12-16/1030			32.19								
12/16 11:45 12:13			33.32 36.95	6.63	1.79	10.92	934	MU Black	2.28	123.3	
36		= TOTAL VOLUME REMOVED (gal.)									

DEVELOPMENT METHOD: surging and reclaimer pump

NOTES: pump to dry (12/7)
" " (12/8)



WELL DEVELOPMENT FIELD RECORD

<p>JOB NAME <u>McDonough</u></p> <p>DEVELOPED BY <u>S. Ondrej</u></p> <p>STARTED DEVEL <u>10/29/20 14:06</u></p> <p>DATE TIME</p> <p>W.L. BEFORE DEVEL. <u>6.25 10/29/14:11</u></p> <p>DEPTH DATE TIME</p> <p>WELL DEPTH: BEFORE DEVEL. <u>63.45</u></p> <p>AFTER DEVEL. _____</p> <p>STANDING WATER COLUMN (FT.) <u>57.2</u></p> <p>AFTER DEVEL. _____</p> <p>SCREEN LENGTH <u>10 feet</u></p>	<p>JOB NO. _____</p> <p>DATE OF INSTALL. <u>10/29/20</u></p> <p>COMPLETED DEVEL. <u>10/29/20 18:36</u></p> <p>DATE TIME</p> <p>AFTER DEVEL. <u>63.45 10/29/18:36</u></p> <p>DEPTH DATE TIME</p> <p>AFTER DEVEL. _____</p> <p>STANDING WELL VOLUME <u>9.32</u> gal.</p> <p>DRILLING WATER LOSS _____ gal.</p> <p>WELL NO. <u>B-104D</u></p> <p>SHEET <u>1</u> OF <u>1</u></p>
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DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				Pump Rate	REMARKS DTW	
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)			
1445	0	819.8	22.81	6.22	30.0	1/2 g/min	28.9	
1500	7.5	paused to recheck measurement						
1505	7.5	pump priming again 0 ft recheck						
1515	12.5	570.1	20.44	6.35	19.0	0.5 gal/min	41.8 feet	
1520	13.75	FLOW reduced to 0.25 gal/min						
1530	15.25	1009.3	20.27	6.18	3.76	600 ml/min	54.21	
1545	17.5	1091.1	22.09	6.50	72.5	600 ml/min	50.3	
1600	19.75	1047.0	21.04	6.11	15.9	600 ml/min	47.35	
1615	22	1050.8	20.91	6.11	3.40	600 ml/min	45.76	
1630	24.25	1048.3	20.57	6.11	4.61	600 ml/min	46.0	
1645	26.5	1090.6	20.42	6.11	2.12	600 ml/min	46.1	
1700	28.75	1045.6	20.36	6.11	10.7	600 ml/min	47.2	
1715	31	1051.0	20.30	6.12	3.62	600 ml/min	47.7	
1730	33.25	1037.8	20.26	6.17	20.4	600 ml/min	47.2	
1735		1054.5	20.09	6.11	4.10	60 ml/min	47.2	
	36	TOTAL VOLUME REMOVED (gal.)						

DEVELOPMENT METHOD: pump surged @ 1530, moved 3 feet up in screen

pump surged @ 1615, moved 2 feet up in screen

pump surged @ 1645, moved to 1 foot up in screen

surged @ 1715, moved to 1 foot above bottom

NOTES:

PURGING AND SAMPLING FORM

October

Project #: 166849618	Project Name/Site Name: Plant McDonough Advanced Solenium Facility		Page: <u>1</u> of <u>1</u>
Well ID #: <u>B-104D</u>	Date: <u>10/29/20</u>	Water Level (ft): <u>37.89</u>	Time (WL): <u>1759</u>
Physical Condition of Well: <u>good</u>		Weather: <u>25.56</u>	
Well Diameter (in): <u>2</u>	Well Depth (ft): <u>63.45</u>	Water Column (ft): <u>34.80</u>	Well Volume (gal): <u>4.2</u>
Start Purge: <u>1754</u>	End Purge: <u>1836</u>	Top of Pump (ft): <u>68.45</u>	
Evacuation Method: <u>Low-Flow</u>		Volume Removed (L): <u>9.6 L</u>	
Evacuation Equipment: <u>Reclaimer</u>		Purging Personnel: <u>S. Brodrick</u>	
SmarTroll serial #: <u>512733</u>		Lamotte serial #: <u>1386 - 3811</u>	

Purge Data/Field Parameters

Time	Color & Appearance	Odor	pH (S.U.)	Cond. (uS/cm)	DO (mg/L)	Temp (C)	ORP (mV)	Turbidity (NTU)	DTW (ft BTOC)	Pumping Rate
1836	clear		6.06	1059.5	1.33	19.81	272.2	0.19	26.6	240 ml

Stabilization Criteria: pH \pm 0.1 S.U, Conductivity \pm 5%, Dissolved Oxygen \pm 10% or 0.2mg/L (whichever is greater; for DO < 0.5mg/L, record only, no stabilization criteria), Turbidity \leq 5 NTU; Purge volume \geq 3L purge water, water level \leq 0.3 ft; Temp and ORP record only

Sample Description

Sample ID: _____ Sample Date/Time: _____ Metals Date/Time: _____
 Duplicate: _____ Dup Date/Time: _____ Final Turbidity NTU: _____
 Field Blank: _____ Blank Date/Time: _____ Turbidity Date/Time: _____

# Sample Bottles	Container	Preservative	Analyte(s)
1	250 mL plastic	HNO ₃	B, Be, Co, Al, Mg, Mn, K, Na, Si, Ca
1	250 mL plastic	--	Alkalinity
1	250 mL plastic	--	Chloride + Sulfate
1	250 mL plastic	--	Ferrous + Ferric Iron

Signature: [Signature]

Product Name: Low-Flow System

Date: 2020-10-29 18:38:20

Project Information:

Operator Name S. Brodie
Company Name Golder
Project Name B-104D
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type reclaimer
Tubing Type LPDE
Tubing Diameter .5 in
Tubing Length 63.45 ft

Pump placement from TOC 68.45 ft

Well Information:

Well ID B-104D
Well diameter 2 in
Well Total Depth 63.45 ft
Screen Length 10 ft
Depth to Water 36.89 ft

Pumping Information:

Final Pumping Rate 240 mL/min
Total System Volume 2.539863 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 10.08 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	18:14:26	1200.02	20.61	6.06	1059.22	0.33	28.65	1.08	431.96
Last 5	18:19:26	1500.02	20.42	6.06	1058.94	0.39	28.90	1.83	381.05
Last 5	18:24:27	1801.02	20.30	6.06	1058.49	0.32	27.30	0.72	342.24
Last 5	18:29:28	2102.02	19.93	6.06	1058.80	0.25	26.90	1.14	304.71
Last 5	18:34:28	2402.02	19.81	6.06	1059.46	0.19	26.60	1.33	272.23
Variance 0			-0.12	0.00	-0.45			-1.11	-38.81
Variance 1			-0.37	0.00	0.31			0.41	-37.53
Variance 2			-0.12	-0.00	0.66			0.19	-32.48

Notes

Grab Samples



WELL DEVELOPMENT FIELD RECORD

JOB NAME <u>McDonough</u> DEVELOPED BY <u>S. Brodric</u> STARTED DEVEL. <u>10/30/20 / 1510</u> DATE TIME W.L. BEFORE DEVEL. <u>16.2 11/30/1350</u> DEPTH DATE TIME WELL DEPTH: BEFORE DEVEL. <u>74.35</u> STANDING WATER COLUMN (FT.) <u>58.15 9.5gal</u> SCREEN LENGTH <u>10</u>	JOB NO. _____ WELL NO. <u>B-10SD</u> DATE OF INSTALL. _____ SHEET _____ OF _____ COMPLETED DEVEL. _____ / _____ DATE TIME AFTER DEVEL. _____ / _____ DEPTH DATE TIME AFTER DEVEL. _____ WELL DIA. (in) _____ STANDING WELL VOLUME <u>9.</u> gal. DRILLING WATER LOSS _____ gal.
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1525

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				FLOW rate	REMARKS	DTW	pump feet from bottom
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)				
10/30 1510	0	576.0	19.91	7.01	52.8	0.25 gal/min	24.49	1'	
10/30 1525		592.0	19.55	6.70	31.6	0.25 gal/min	28.7	1'	
10/30 1530		604.2	19.47	6.51	11.9	0.25 gal/min	33.45	1'	
10/30 1545		602.5	19.33	6.36	54.6	0.25 gal/min	37.4	3'	
10/30 1600		606.9	19.41	6.26	46.3	0.25 gal/min	39.2	3'	
10/30 1615		611.4	19.28	6.18	17.1	0.25 gal/min	40.29	3'	
10/30 1630		613.6	19.41	6.13	12.1	0.25 gal/min	40.79	3'	
10/30 1645		601.5	19.03	6.24	81	0.25 gal/min	42.1	6'	
10/30 1700		615.4	18.97	6.07	33.6	0.25 gal/min	44.21	6'	
10/30 1715	31.25	617.9	19.04	6.04	17.9	0.25 gal/min	40.2	6'	
generator ran out of fuel									
10/30 1730	31.25	650.1	18.61	6.66	18.5	0.5 gal/min	42.5	6'	
10/30 1745	38.75	578.9	18.83	6.53		0.5 gal/min	62		
10/30 1800	46.25	642.3	18.39	6.22	22.1	0.25 gal/min	60.9	9'	
10/30 1815		635.8	18.47	6.10	26.8	0.25 gal/min	63.4	9'	
10/30 1830		628.2	18.15	6.18	14.5	0.25 gal/min	64.0	9'	
10/30 1830	53.75	635.7	18.10	6.12	9.84	0.25 gal/min	64.1	9'	
		= TOTAL VOLUME REMOVED (gal.)							

DEVELOPMENT METHOD: surging and reclaimer pump

1530 - pump surged, moved to 3' from bottom

1630 - pump surged, moved to 6' from bottom

1730 - pump surged, moved to 9' from bottom

NOTES: development complete, no time for LOW flow due to late hour of day and loss of light

WELL DEVELOPMENT FIELD RECORD

JOB NAME <u>NES DEVELOPMENT</u> DEVELOPED BY <u>J. WAGUESPACK</u> STARTED DEVEL. <u>11.02.20 / 16:35</u> DATE TIME W.L. BEFORE DEVEL. <u>16.40 / 11.02.20 / 16:31</u> DEPTH DATE TIME WELL DEPTH: BEFORE DEVEL. <u>72.90</u> STANDING WATER COLUMN (FT.) <u>56.5</u> SCREEN LENGTH <u>10' : 62.90 - 72.90</u>	JOB NO. <u>166849618</u> WELL NO. <u>B-1050</u> DATE OF INSTALL. _____ SHEET <u>1</u> OF <u>2</u> COMPLETED DEVEL. <u>11.04.20 / 15:20</u> DATE TIME AFTER DEVEL. <u>40.4 / 11.04 / 15:20</u> DEPTH DATE TIME AFTER DEVEL. <u>72.90</u> WELL DIA. (In) <u>2</u> STANDING WELL VOLUME <u>9.21</u> gal. DRILLING WATER LOSS _____ gal.
--	---

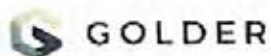
DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS					Do	ORP	REMARKS DTW	Pump From Bottom
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (S.U.)	Turbidity (NTU)					
<u>11.02.20 / 16:40</u>	<u>0</u>	<u>641.0</u>	<u>19.11</u>	<u>6.33</u>	<u>71000</u>	<u>0.77</u>	<u>37.2</u>	<u>22.8</u>	<u>3" SURGING</u>	
<u>16:52</u>	<u>5</u>	<u>639.2</u>	<u>18.86</u>	<u>6.78</u>	<u>210000</u>	<u>9.37</u>	<u>83.2</u>	<u>61.0</u>		
<u>17:00</u>	<u>10</u>	<u>260.5</u>	<u>18.50</u>	<u>7.32</u>	<u>88.7</u>	<u>8.45</u>	<u>-67.5</u>	<u>68.5</u>	<u>RECHARGING</u>	
<u>17:10</u>	<u>-</u>							<u>59.5</u>	<u>RECHARGING</u>	
<u>17:19</u>	<u>-</u>							<u>49.5</u>	<u>RECHARGING</u>	
<u>11.04.20 / 09:05</u>	<u>-</u>	<u>RESUME DEVELOPMENT</u>							<u>16.42</u>	<u>3" SWAGE WHEEL</u>
<u>09:15</u>	<u>15</u>	<u>668.6</u>	<u>17.72</u>	<u>6.53</u>	<u>21000</u>	<u>3.34</u>	<u>26.1</u>	<u>45.88</u>	<u>0.5 gpm</u>	
<u>09:25</u>	<u>20</u>	<u>662.6</u>	<u>17.99</u>	<u>6.19</u>	<u>42.0</u>	<u>2.79</u>	<u>83.5</u>	<u>59.10</u>	<u>5" SURGING</u>	
<u>09:30</u>	<u>22.5</u>	<u>661.9</u>	<u>18.32</u>	<u>6.19</u>	<u>30.2</u>	<u>4.53</u>	<u>113.5</u>	<u>66.5</u>	<u>RECHARGING</u>	
<u>09:50</u>	<u>22.5</u>	<u>661.0</u>	<u>19.20</u>	<u>6.34</u>	<u>92.9</u>	<u>6.21</u>	<u>235.9</u>	<u>46.5</u>	<u>SWAGE SCREEN</u>	
<u>10:00</u>	<u>27.5</u>	<u>658.4</u>	<u>18.48</u>	<u>6.44</u>	<u>41.4</u>	<u>7.84</u>	<u>316.5</u>	<u>62.7</u>	<u>3"</u>	
<u>10:05</u>	<u>30</u>	<u>661.6</u>	<u>18.52</u>	<u>6.45</u>	<u>84.2</u>	<u>7.91</u>	<u>217.3</u>	<u>67.0</u>	<u>RECHARGING</u>	
<u>10:30</u>	<u>30</u>	<u>655.8</u>	<u>19.83</u>	<u>6.56</u>	<u>47.6</u>	<u>7.93</u>	<u>268.2</u>	<u>45.0</u>	<u>SWAGE SCREEN</u>	
<u>10:40</u>	<u>34</u>	<u>661.3</u>	<u>18.80</u>	<u>6.37</u>	<u>25.5</u>	<u>5.15</u>	<u>274.3</u>	<u>62.7</u>		
<u>10:45</u>	<u>36</u>	<u>658.7</u>	<u>18.88</u>	<u>6.26</u>	<u>27.5</u>	<u>4.04</u>	<u>316.4</u>	<u>66.9</u>	<u>RECHARGING</u>	
<u>11:10</u>	<u>36</u>	<u>656.1</u>	<u>19.48</u>	<u>6.23</u>	<u>54.2</u>	<u>3.11</u>	<u>414.7</u>	<u>43.40</u>	<u>SWAGE SCREEN</u>	
<u>11:20</u>	<u>38.5</u>	<u>656.4</u>	<u>19.32</u>	<u>6.21</u>	<u>87.5</u>	<u>3.12</u>	<u>438.5</u>	<u>52.95</u>		
<u>11:30</u>	<u>41</u>	<u>652.9</u>	<u>19.33</u>	<u>6.15</u>	<u>22.3</u>	<u>2.54</u>	<u>452.9</u>	<u>57.65</u>		
		= TOTAL VOLUME REMOVED (gal.)								

DEVELOPMENT METHOD: RECLAIMED + SURGING

10:30: FLOW RATE DECREASED FROM 0.5 gpm - 0.4 gpm

11:10: FLOW RATE FROM 0.4 - 0.25 gpm

NOTES:



WELL DEVELOPMENT FIELD RECORD

JOB NAME NES DEVELOPMENT
 DEVELOPED BY J. WAGUESPACK
 STARTED LEVEL 11.02.20 / 16:35
DATE TIME
 W.L. BEFORE DEVEL. 16.40 / 11/02 / 16:31
DEPTH DATE TIME
 WELL DEPTH: BEFORE DEVEL. 72.90
 STANDING WATER COLUMN (FT.) 56.5
 SCREEN LENGTH 10

JOB NO. 166849618 WELL NO. B-105D
 DATE OF INSTALL. _____ SHEET 2 OF 2
 COMPLETED LEVEL 11.04.20 / 15:20
DATE TIME
 AFTER DEVEL. 40.4 / 11.04 / 15:20
DEPTH DATE TIME
 AFTER DEVEL. 72.90 WELL DIA. (In) 2
 STANDING WELL VOLUME 9.21 gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS						DO	ORP	REMARKS DTW	PUMP FROM BOTTOM / NOTES
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)						
11.04.20 / 11:40	43.5	650.4	19.41	6.12	5.79	2.15	490.4	62.20	3'		
11:50	46	648.9	19.50	6.11	6.01	1.96	529.5	64.3	RECHARGING		
12:10	46	649.4	20.04	6.14	50.2	2.04	596.2	43.2	SURGING SCREEN		
12:20	48.5	647.7	20.04	6.13	51	2.00	607.8	50.49			
12:30	51	646.9	19.77	6.11	28.5	1.67	633.8	57.3	SURGING		
12:40	53.5	650.4	19.72	6.10	14.3	1.59	650.7	62.45	SURGING		
12:50	56	644.2	19.73	6.12	10.61	1.61	681.2	64.4	→ 5', RECHARGE		
13:15	56	654.4	20.44	6.14	7.14	2.05	442.1	43.9	SURGING SCREEN		
13:25	58.5	650.2	19.93	6.09	11.7	1.71	611.2	56.0	SURGING		
13:35	61	650.0	19.68	6.08	9.29	1.56	753.3	63.8			
13:45	63.5	649.4	19.81	6.09	4.03	1.80	871.4	63.9	→ 3', RECHARGE		
14:05	63.5	649.0	20.5	6.11	5.21	1.94	1063.5	44.20			
14:15	66	649.2	20.02	6.09	2.11	1.75	1111.8	53.8	→ 5'		
14:25	68.5	648.9	19.72	6.08	0.89	1.59	1135.5	63.25	RECHARGING		
14:50	68.5	BEGIN LOW FLOW DEVELOPMENT						40.0			
15:05		FLOW RATE FROM 400 ml/min → 200 ml/min									
15:20	+2.4	647.20	20.37	6.10	0.28	1.54	1184.20	40.4			
	70.5	DEVELOPMENT COMPLETE									
	124.25	= TOTAL VOLUME REMOVED (gal.)									

DEVELOPMENT METHOD: RECLAIMER + SURGING

NOTES:

Product Name: Low-Flow System

Date: 2020-11-04 15:27:00

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type LDPE
Tubing Diameter .250 in
Tubing Length 68 ft

Pump placement from TOC 68 ft

Well Information:

Well ID B-105D
Well diameter 2 in
Well Total Depth 72.90 ft
Screen Length 10 ft
Depth to Water 40 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 2.186386 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.8 in
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:01:21	600.02	20.22	6.09	647.87	0.52	43.65	1.64	1175.88
Last 5	15:06:21	900.02	20.21	6.08	647.04	0.43	45.40	1.49	1180.15
Last 5	15:11:21	1200.02	20.18	6.10	647.69	0.40	43.60	1.52	1181.51
Last 5	15:16:21	1500.02	20.26	6.09	647.84	0.37	41.80	1.56	1183.04
Last 5	15:21:21	1800.02	20.37	6.10	647.21	0.28	40.40	1.54	1184.21
Variance 0			-0.02	0.01	0.64			0.03	1.36
Variance 1			0.08	-0.00	0.16			0.04	1.53
Variance 2			0.11	0.00	-0.64			-0.01	1.17

Notes

@15:05 purge rate decreased from 400 to 200 mL/min

Grab Samples

Product Name: Low-Flow System

Date: 2020-12-08 12:58:13

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name NES Development
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type polyethylene
Tubing Diameter .5 in
Tubing Length 77 ft

Pump placement from TOC 77 ft

Well Information:

Well ID B-106D
Well diameter 2 in
Well Total Depth 82.22 ft
Screen Length 10 ft
Depth to Water 37.0 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 3.063041 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.28 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:40:19	300.05	17.67	6.05	511.79	1.35	37.60	0.93	87.75
Last 5	12:45:19	600.02	16.87	5.99	502.22	8.78	37.35	0.22	85.86
Last 5	12:50:19	900.02	16.65	5.94	508.84	6.04	37.20	0.14	85.57
Last 5	12:55:19	1200.02	16.92	5.93	512.15	4.94	37.19	0.13	84.61
Last 5									
Variance 0			-0.81	-0.06	-9.57			-0.71	-1.89
Variance 1			-0.22	-0.04	6.62			-0.08	-0.29
Variance 2			0.27	-0.01	3.31			-0.01	-0.96

Notes

Grab Samples

WELL DEVELOPMENT FIELD RECORD

JOB NAME <u>166849618 NES DEVELOPMENT</u>	JOB NO. _____	WELL NO. <u>B-107D</u>
DEVELOPED BY <u>JUDE WAQUESPAK</u>	DATE OF INSTALL. _____	SHEET <u>1</u> OF <u>2</u>
STARTED DEVEL. <u>11.02.20 / 10:05</u>	COMPLETED DEVEL. <u>11.02.20 / 15:11</u>	
W.L. BEFORE DEVEL. <u>18.35</u> <u>11.02 / 09:30</u>	AFTER DEVEL. <u>18.83</u> <u>11.02 / 15:11</u>	
<u>BTOC</u> DEPTH DATE TIME	DEPTH DATE TIME	
WELL DEPTH: BEFORE DEVEL. <u>85.25</u>	AFTER DEVEL. <u>85.25</u> WELL DIA. (In) <u>2</u>	
STANDING WATER COLUMN (FT.) <u>66.9</u>	STANDING WELL VOLUME <u>10.9</u> gal.	
SCREEN LENGTH <u>10' 75.25 - 85.25</u>	DRILLING WATER LOSS _____ gal.	

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS					DO	ORP	REMARKS DTW	Pump From BOTTOM
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)					
11.02.20/10:15	5	643.8	15.13	6.13	7100	10.10	-78.4	19.55	3" SURGING	
10:27	10	714.6	15.43	6.01	21000	8.06	-76.7	19.75	3" SURGING	
10:38	15	707.9	16.73	5.95	58.7	8.50	-27.5	19.60	3" SURB	
10:50	20	705.5	16.41	6.02	70.0	7.51	5.5	19.80	"	
11:02	25	716.6	16.38	5.99	53.3	7.59	6.9	19.75	-> 4' SURGE	
11:16	30	421.7	16.02	5.98	47.1	8.53	15.5	19.95	4' SURGING	
11:28	35	724.0	16.49	6.00	48.7	10.10	42.8	19.95	"	
11:40	40	718.1	16.65	5.97	50.4	9.13	43.5	19.95		
11:52	45	722.1	16.33	5.95	34.6	8.29	35.9	19.90		
12:04	50	666.6	16.82	5.95	14.9	10.04	32.2	19.95	-> 8' SURGING	
12:16	55	726.1	16.74	5.94	23.3	8.41	43.8	20.0	SURGING	
12:28	60	398.4	16.37	5.96	13.8	7.32	61.9	19.95	SURGING	
12:40	65	711.1	17.05	5.97	6.5	7.71	75.0	19.95	-> 3" SURG	
12:52	70	708.1	16.69	6.00	34.6	8.87	105.4	19.90		
13:04	75	640.0	16.38	5.96	16.7	8.05	84.1	19.95	3" SURGING	
13:16	80	716.1	16.77	5.99	17.8	6.59	82.4	19.90		
13:28	85	719.1	17.20	5.97	5.7	8.13	86.1	19.90	-> 5' SURB	
13:40	90	721.3	17.17	5.95	20.3	9.57	88.8	19.90		
11.02.20 15:11	102.6	= TOTAL VOLUME REMOVED (gal.)								

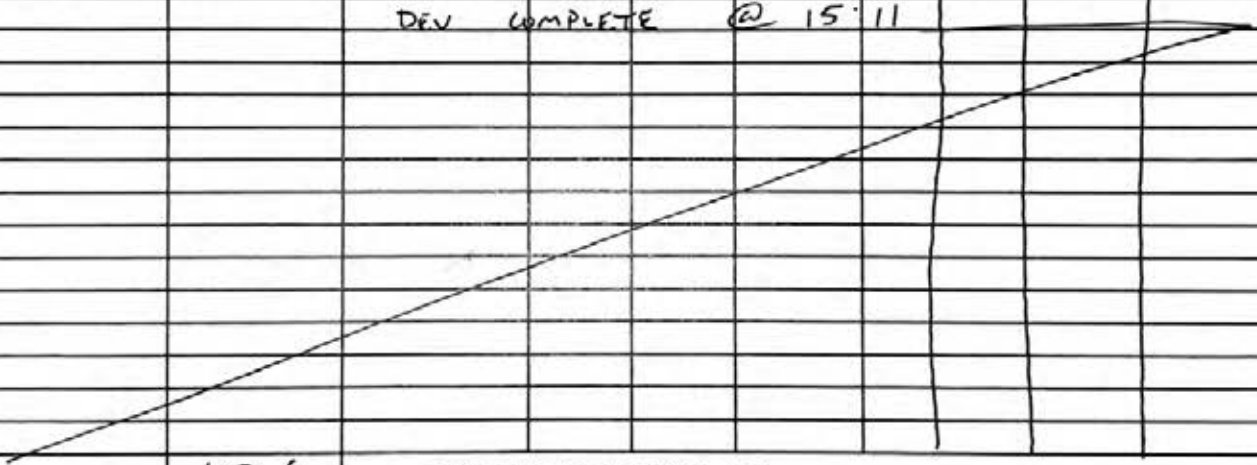
DEVELOPMENT METHOD: RECLAIMER + SURGING
Flow RATE = 1600 m³/min = 0.42 gal/min
NO WELL PAD INSTALLED; DTW FROM TOC

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME NES DEVELOPMENT
 DEVELOPED BY J. WAQUESPAK
 STARTED DEVEL. 11.02.20 / 10:05
DATE TIME
 W.L. BEFORE DEVEL. 18.35 / 11.02 / 09:30
DEPTH DATE TIME
 WELL DEPTH: BEFORE DEVEL. 85.25
 STANDING WATER COLUMN (FT.) 66.9
 SCREEN LENGTH 10' ; 75.25 - 85.25

JOB NO. 166849618 WELL NO. B-107D
 DATE OF INSTALL. _____ SHEET 2 OF 2
 COMPLETED DEVEL. 11.02.20 / 15:11
DATE TIME
 AFTER DEVEL. 18.83 / 11.02 / 15:11
DEPTH DATE TIME
 AFTER DEVEL. 85.25 WELL DIA. (In) 2
 STANDING WELL VOLUME 10.9 gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS						DO	OAP	REMARKS DTW	Pump From Bottom
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)						
<u>11.02.20 / 13:52</u>	<u>95</u>	<u>724.0</u>	<u>17.23</u>	<u>5.95</u>	<u>9.04</u>	<u>6.88</u>	<u>85.8</u>	<u>19.90</u>	<u>19.90</u>	<u>5'</u>	
<u>14:04</u>	<u>100</u>	<u>735.0</u>	<u>17.59</u>	<u>5.97</u>	<u>4.5</u>	<u>7.38</u>	<u>105.2</u>	<u>19.90</u>			
	<u>BEGIN</u>	<u>LOW FLOW DEV @ 14:44</u>									
<u>15:11</u>	<u>102.6</u>	<u>710.20</u>	<u>18.42</u>	<u>5.86</u>	<u>3.56</u>	<u>0.13</u>	<u>215.20</u>	<u>18.83</u>			
		<u>DEV COMPLETE @ 15:11</u>									
											
	<u>102.6</u>	= TOTAL VOLUME REMOVED (gal.)									

DEVELOPMENT METHOD: RECLAIMER + SURGING
 Flow RATE = 1600 ml/min ≈ 0.42 gal/min
14:04: STOPPED FLOW TO GET GAS FOR GENERATOR

NOTES:

Product Name: Low-Flow System

Date: 2020-11-02 15:13:51

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type LDPE
Tubing Diameter .250 in
Tubing Length 80 ft

Pump placement from TOC 80 ft

Well Information:

Well ID B-107D
Well diameter 2 in
Well Total Depth 85.25 ft
Screen Length 10 ft
Depth to Water 18.60 ft

Pumping Information:

Final Pumping Rate 400 mL/min
Total System Volume 2.302218 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.76 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:49:37	300.15	18.88	5.86	708.59	1.74	18.80	1.15	228.78
Last 5	14:54:37	600.09	18.39	5.86	716.44	6.02	18.83	0.26	233.19
Last 5	14:59:37	900.09	18.43	5.86	714.89	7.21	18.83	0.14	222.19
Last 5	15:04:37	1200.07	18.51	5.86	712.79	4.72	18.83	0.12	217.21
Last 5	15:09:38	1501.07	18.42	5.86	710.17	3.56	18.83	0.13	215.20
Variance 0			0.04	-0.00	-1.56			-0.11	-11.00
Variance 1			0.08	0.00	-2.10			-0.02	-4.98
Variance 2			-0.09	0.01	-2.61			0.00	-2.01

Notes

Grab Samples

WELL DEVELOPMENT FIELD RECORD

JOB NAME NES DEVELOPMENT
 DEVELOPED BY J. WAGUESPACK
 STARTED DEVEL. 11/05/20 12:00
DATE TIME
 W.L. BEFORE DEVEL. 20.25 11/05 10:45
DEPTH DATE TIME
 WELL DEPTH: BEFORE DEVEL. 81.91
 STANDING WATER COLUMN (FT.) 61.66
 SCREEN LENGTH 10' : 71.91 - 81.91

JOB NO. 166849618 WELL NO. B-108D
 DATE OF INSTALL. _____ SHEET 1 OF 2
 COMPLETED DEVEL. 11.05.20 16:58
DATE TIME
 AFTER DEVEL. 22.16 11.05 16:58
DEPTH DATE TIME
 AFTER DEVEL. 81.91 WELL DIA. (in) 2
 STANDING WELL VOLUME 10.05 gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS					DO	ORP	REMARKS DTW	PUMP FROM BOT. NOTES
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)					
11/05/20/12:00	0	BEGIN	DEV	EL	DEVELOPMENT			20.25	6" SURGING	
12:09	5	901.5	19.50	6.87	71000	1.16	-461.2	26.7	SURGE SCREEN	
12:17	10	838.2	19.41	6.35	71000	1.46	-153.9	27.2	"	
12:26	15	818.7	19.25	6.24	71000	1.51	-50.4	27.5	"	
12:36	20	804.4	19.09	6.16	71000	1.29	-40.9	27.6	"	
12:46	25	801.8	19.03	6.14	98	1.11	-75.2	27.6		
12:56	30	797.4	18.97	6.11	42.3	1.08	-58.7	27.6	SURGING	
13:06	35	794.9	19.01	6.10	46.1	1.05	-81.0	27.5		
13:16	40	793.0	19.02	6.08	20.9	1.05	-63.6	27.5	→ 3' SURGE SCREEN	
13:26	45	805.6	18.98	6.15	886	1.41	-93.6	29.5	SURGING	
13:36	50	794.3	18.95	6.09	117	1.36	-68.1	29.7		
13:46	55	789.5	18.88	6.06	18.0	1.37	-58.8	29.8	SURGING	
13:56	60	788.1	18.82	6.05	18.7	1.37	-74.9	29.6	→ 6' SURGE SCREEN	
14:06	65	788.2	18.76	6.05	21.4	1.44	-56.3	30.9		
14:16	70	787.6	18.76	6.04	15.3	1.47	-61.6	30.5	SURGE	
14:26	75	787.0	18.74	6.04	14.0	1.46	-62.0	31.3		
14:36	80	786.4	18.72	6.03	8.93	1.47	-43.7	31.3	→ 9' SURGE	
14:46	85	789.6	18.74	6.06	7.87	1.46	-52.8	32.3	SURGING	
		= TOTAL VOLUME REMOVED (gal.)								

DEVELOPMENT METHOD:

RECLAIMER + SURGING

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME NES DEVELOPMENT
 DEVELOPED BY J. WAGUESPACK
 STARTED DEVEL. 11/05/20 / 12:00
DATE TIME
 W.L. BEFORE DEVEL. 20.25 / 11/05 / 10:45
DEPTH DATE TIME
 WELL DEPTH: BEFORE DEVEL. 81.91
 STANDING WATER COLUMN (FT.) 61.66
 SCREEN LENGTH 10' - 71.91 - 81.91

JOB NO. 166849618 WELL NO. B-108D
 DATE OF INSTALL. _____ SHEET 2 OF 2
 COMPLETED DEVEL. 11.05.20 / 16:58
DATE TIME
 AFTER DEVEL. 22.16 / 11.05 / 16:58
DEPTH DATE TIME
 AFTER DEVEL. 81.91 WELL DIA. (In) 2
 STANDING WELL VOLUME 10.05 gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS						REMARKS DTW	PUMP FROM BOTTOM + NOTES
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)	DO	ORP		
11/05/20/14:56	90	787.0	18.71	6.04	8.37	1.47	-59.7	32.2	→ 6" SURGE SCREEN
15:06	95	788.8	18.70	6.06	9.0	1.29	-155.3	29.7	SURGING
15:16	100	785.8	18.66	6.03	9.07	1.22	-110.9	29.4	
15:26	105	784.8	18.63	6.02	4.38	1.22	-66.2	29.1	→ 3' SURGE
15:36	110	783.4	18.61	6.03	5.49	1.28	-62.7	30.1	→ 6' SURGE
15:46	115	783.2	18.61	6.02	8.25	1.35	-7.5	31.0	→ 5'
15:56	120	783.3	18.61	6.02	3.89	1.38	-18.1	30.4	RECHARGE
16:23		BEGW Low Flow DEV						21.15	
16:58		791.30	18.39	6.08	4.7	1.06	-11.70	22.6	300 ^{ML} /min
		END Low Flow DEV - COMPLETE							
	120	= TOTAL VOLUME REMOVED (gal.)							

DEVELOPMENT METHOD: RECLAIMER + SURGING
2.77 gallons purged during low flow

NOTES:

Product Name: Low-Flow System

Date: 2020-11-05 17:01:11

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type LDPE
Tubing Diameter .250 in
Tubing Length 66 ft

Pump placement from TOC 66 ft

Well Information:

Well ID B-108D
Well diameter 2 in
Well Total Depth 81.91 ft
Screen Length 10 ft
Depth to Water 21.15 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 2.16708 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 17.4 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:38:28	899.90	18.44	6.07	787.55	9.44	22.55	1.67	68.33
Last 5	16:43:28	1199.90	18.43	6.06	788.94	8.71	22.60	1.43	-3.16
Last 5	16:48:35	1506.90	18.43	6.07	789.63	8.20	22.60	1.32	-16.70
Last 5	16:53:35	1806.89	18.40	6.07	790.32	7.20	22.60	1.16	-20.00
Last 5	16:58:35	2106.90	18.39	6.08	791.28	4.70	22.60	1.06	-11.69
Variance 0			0.00	0.00	0.70			-0.11	-13.54
Variance 1			-0.03	0.00	0.69			-0.16	-3.30
Variance 2			-0.01	0.01	0.96			-0.09	8.31

Notes

Grab Samples

WELL DEVELOPMENT FIELD RECORD

<p>JOB NAME <u>Plant McDonough</u></p> <p>DEVELOPED BY <u>D. Thomas</u></p> <p>STARTED LEVEL. <u>11-9-20 / 1235</u></p> <p style="text-align: center; font-size: small;">DATE TIME</p> <p>W.L. BEFORE DEVEL. <u>37.20 / 11-9-20 / 1202</u></p> <p style="text-align: center; font-size: small;">DEPTH DATE TIME</p> <p>WELL DEPTH: BEFORE DEVEL. <u>100.85</u></p> <p>STANDING WATER COLUMN (FT.) <u>63.65</u></p> <p>SCREEN LENGTH <u>10</u></p>	<p>JOB NO. <u>166849618</u></p> <p>DATE OF INSTALL. _____</p> <p>COMPLETED LEVEL. _____</p> <p style="text-align: center; font-size: small;">DATE TIME</p> <p>AFTER DEVEL. _____</p> <p style="text-align: center; font-size: small;">DEPTH DATE TIME</p> <p>AFTER DEVEL. _____</p> <p>STANDING WELL VOLUME _____ gal.</p> <p>DRILLING WATER LOSS _____ gal.</p>
	<p>WELL NO. <u>B-107D</u></p> <p>SHEET <u>1</u> OF <u>5</u></p> <p style="text-align: right; font-size: small;">km</p>

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (µS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)	
<u>11-9-20/1235</u>	<u>0</u>	<u>444.85</u>	<u>22.38</u>	<u>6.62</u>	<u>71000</u>	<u>1' foot from bottom surge screen</u>
<u>1245</u>	<u>5</u>	<u>339.95</u>	<u>22.52</u>	<u>6.72</u>	<u>12.2</u>	<u>3' after surging / DTW = 61.40</u>
<u>1255</u>	<u>10</u>	<u>321.16</u>	<u>20.77</u>	<u>7.04</u>	<u>59.6</u>	<u>DTW = 91.70</u>
		<u>Well went dry waiting for well to recharge</u>				
		<u>Drillers grinding hole will resume development after</u>				
<u>1337</u>						<u>DTW = 91.37</u>
<u>1400</u>		<u>325.08</u>				<u>DTW = 90.80</u>
<u>1405</u>	<u>15.10</u>	<u>265.08</u>	<u>25.15</u>	<u>7.35</u>	<u>44.9</u>	<u>DTW = BTOP</u>
		<u>Well went dry wait for recharge</u>				
<u>1430</u>						<u>DTW = 92.80</u>
<u>1509</u>						<u>DTW = 91.30</u>
<u>1530</u>						<u>DTW = 90.40</u>
<u>1610</u>	<u>0</u>	<u>349.44</u>	<u>24.38</u>	<u>9.66</u>	<u>38.10</u>	<u>DTW = 87.10</u>
<u>1620</u>	<u>18.20</u>	<u>388.50</u>	<u>21.91</u>	<u>6.88</u>	<u>32.20</u>	<u>surged, 5' DTW = BTOP</u>
		<u>Well went dry return tomorrow</u>				
		= TOTAL VOLUME REMOVED (gal.)				

DTW
61.4

DEVELOPMENT METHOD:

0.5 gal/min surging and reclaimer pump

NOTES:

WELL DEVELOPMENT FIELD RECORD

3 of 5
Page 1 of 3

PROJECT NAME / NUMBER: _____
 WELL DIA (in): 2
 DEVELOPED BY: K. M. Khan
 STARTED LEVEL: 12-14-2011 1545
 W.L. BEFORE DEVEL: DATE 12-14-11 TIME 1520
 WL: WL DATE TIME
 WELL DEPTH: BEFORE DEVEL: 102.12
 STANDING WATER COLUMN (FT): 10.36 gal (well vol)
 SCREEN LENGTH: 92-102

WELL ID: B-109D
 DATE OF INSTALL: _____
 COMPLETED LEVEL: _____
 WL AFTER DEVEL: _____
 WELL DEPTH: AFTER DEVEL: _____
 STANDING WELL VOLUME: _____ gal
 DRILLING WATER LOSS: _____ gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft bgs)	FIELD PARAMETERS							REMARKS	
				pH (s.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)		
12-14/1545	-	-	78.56									Pump 10 gal
1550	2.5	0.5	53.80	5.82	0.49	16.68	>1000	Gray	1.34	65.6		
1555	5	0.5	73.88	6.09	0.49	15.84	25.1	cloudy	10.04	49.2		
1600	7.5	0.5	89.05	6.28	0.48	16.74	36.7	cloudy	10.22	49.9		
1610	10		77.00									W/L below pump DRAIN FOR THE DAY
1625			97.81									
1630			92.50									0.31 / 5 min = 0.062' per min
12/15 - 9:00			91.26									
9:15	-	-	-	6.31	0.46	15.48	75.5	cloudy	7.49	110.2		Begin Pumping
0950	2.5	0.5	69.59	6.32	0.45	16.35	83.5	red	9.90	68.6		air lift
1000			94.91									Pause dev
1005												ADD Seal DI
1025							193					5 min for 20 min, remove pump
1037			95.26									air lift
1035			91.31									
1040	~10		95.10	6.92	0.08	13.30	105.0	red	11.17	-21		DI Flush cont.
1044			77.00									DRY / PAUSE DEV
1102			96.44									
1545			82.16									
1600			81.81	6.56	0.37	14.96	192	gray	9.26	27.9		Resume DEV
1613	~4		77.00									DRY
1620			77.00									ADD Seal DI
1630			89.33									
1635			88.03									
1640			82.70	6.98	0.05	14.50	90.4	cloudy	15.54	-25.7		Resume DEV
1650	9		98.72									Flushes DI
1700	11		77.00									DRY / END OPER
12/11/16			56.93									surge at
9:35	0.3		58.96									
1000												MP-50 returned broken well shut dev work performed
	~31											

12-14-20
 10 gal removed
 0.062' per min
 224 gal pumped
 equipment & materials lost

DEVELOPMENT METHOD: surging and reclaimer pump
 NOTES: 12/14/20-12/15/20:
10gal Type I DI water added to assist with surging (slow recharge).
31gal purge total - 10gal DI addition = 21gal removed

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER 166894618 / McDonough
 WELL DIA (in) 2
 DEVELOPED BY K. Minkem
 STARTED DEVEL. 12-8-20 / 1300
 DATE TIME
 WL. BEFORE DEVEL. 8.34, 12-8, 1303
 WL DATE TIME
 WELL DEPTH BEFORE DEVEL. 63.06
 DATE TIME
 STANDING WATER COLUMN (FT.) 54.72
 DATE TIME
 SCREEN LENGTH 57-63

WELL ID: B-110D
 DATE OF INSTALL. 12-10-20/1524
 COMPLETED DEVEL. 12-10-20/1524
 DATE TIME
 WL AFTER DEVEL. 62.05, U.10 1524
 WL DATE TIME
 WELL DEPTH AFTER DEVEL. 63.05
 DATE TIME
 STANDING WELL VOLUME _____ gal.
 DRILLING WATER LOSS _____ gal.

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft bgs)	FIELD PARAMETERS							REMARKS
				pH (s.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	
12-8/1325	0	-	-	6.48	0.28	13.70	70.6	cloudy	1.75	-304	Pump @ 61'
1336	5	0.5	52.95	7.25	0.17	13.42	33	cloudy	12.07	57.5	
1345	10	0.5	57.20	7.49	0.39	14.20	31.6	cloudy	11.23	133.8	
1345	-	-	Decreased	yield, air lift decreased							PAUSE DEVEL
1445	-	-	53.23								
1545	-	-	47.16								
1600	10	0.7	45.84								Resume DEVEL
1605	11.6	0.7	54.72	7.78	0.43	13.97	34.5	white	4.37	-96.1	
1610	1015.3	0.7	58.00	7.91	0.53	12.19	51.5	cloudy	12.21	100.5	
			Ar lift, well dry								END for today
12-9/911			11.56								well stop
915 917											Begin pumping
920	2.6	0.3	73.19	7.15	0.41	14.06	20.1	white	3.36	-304.6	
930	5	0.7	94.07	7.50	0.39	14.71	33.8		10.26	77.7	
940	7.5	0.25	56.96	7.74	0.41	14.31	31.1		4.71	-21	PAUSE DEVEL, add in screen
955-91000	-	-	Surge w/o pumping while WL stabilizes								ADD Seal DIA
1015			29.85								RESUME DEVEL
1030	4.47		57.80					clear			DRY, WL in screen (PAUSE)
1035											ADD Seal DIA
1051			45.05								ADD Seal DIA
1115			52.90								Surge, no pumping
1117											RESUME DEVEL
1120											Pump @ 56'
1130											Pump @ 61'
1140			77.00								PRV
1155			PULL In 6								PUMP WILL DEVELOP tomorrow w/ bladder pump
1200			61.71								
1337			9.56								Pump @ 58' (bladder)
1355		102.1L		6.47	36.94	15.87					
1420		400.16									
1440											Pump pulled, end of hole

1745-1445
 ~3.97 ft
 per hour
 1445-1545
 6.07 ft
 exchange
 133
 7.5
 12/10
 3.52 + 4/c

DEVELOPMENT METHOD: surging and reclaimer pump

NOTES:
 Evacuated well 4X (3X w/ Type I PI water).
 12/10 - Used bladder pump for low-flow to avoid excessive drawdown
 - Partial evac w/ bladder pump, then boiler

Product Name: Low-Flow System

Date: 2020-12-10 14:43:29

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter .170 in
Tubing Length 58 ft

Pump placement from TOC 58 ft

Well Information:

Well ID B-110D
Well diameter 2 in
Well Total Depth 63.06 ft
Screen Length 10 ft
Depth to Water 9.56 ft

Pumping Information:

Final Pumping Rate 400 mL/min
Total System Volume 0.4738785 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:20:23	1502.02	16.83	7.42	396.91	--	--	1.23	-274.34
Last 5	14:25:23	1802.02	16.99	7.44	397.72	1.36	12.73	1.19	-273.39
Last 5	14:30:24	2102.87	16.58	7.44	396.49	--	--	1.70	-259.67
Last 5	14:35:24	2402.87	16.27	7.45	395.95	1.30	16.42	1.07	-329.97
Last 5	14:40:24	2702.87	16.25	7.45	395.18	1.20	18.89	0.93	-342.70
Variance 0			-0.40	0.00	-1.23			0.52	13.72
Variance 1			-0.31	0.00	-0.54			-0.63	-70.30
Variance 2			-0.02	0.01	-0.77			-0.14	-12.73

Notes

Well in process of development. Previously evacuated 4x 12/8 and 12/9. Will resume evacuation 12/10 with bailer.

Grab Samples

WELL DEVELOPMENT FIELD RECORD

JOB NAME <u>NES DEVELOPMENT</u> DEVELOPED BY <u>J. WAGUESTACK</u> STARTED DEVEL. <u>11/06/20 / 11:40</u> DATE TIME W.L. BEFORE DEVEL. <u>9.58 / 11/06 / 11:00</u> DEPTH DATE TIME WELL DEPTH: BEFORE DEVEL. <u>85.80' STOC</u> STANDING WATER COLUMN (FT.) <u>76.22'</u> SCREEN LENGTH <u>10' : 75.80 - 85.80'</u>	JOB NO. <u>166849618</u> WELL NO. <u>B-111D</u> DATE OF INSTALL. _____ SHEET <u>1</u> OF <u>2</u> COMPLETED DEVEL. <u>11.07.20 / 11:41</u> DATE TIME AFTER DEVEL. <u>14.35 / 11.07 / 11:41</u> DEPTH DATE TIME AFTER DEVEL. <u>85.80</u> WELL DIA. (In) <u>2</u> STANDING WELL VOLUME <u>12.4</u> gal. DRILLING WATER LOSS _____ gal.
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DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS						DO	ORP	REMARKS OTW	PUMP FROM BOTTOM + NOTES
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)						
<u>11/06 / 11:40</u>	<u>0</u>	<u>BEGIN</u>	<u>DEVELOPMENT</u>						<u>9.58</u>	<u>SURGE SCREEN</u>	
<u>11:50</u>	<u>5</u>	<u>693.3</u>	<u>18.41</u>	<u>7.08</u>	<u>34.7</u>	<u>1.28</u>	<u>-418.2</u>	<u>22.8</u>		<u>6" SURGE SCREEN</u>	
<u>12:00</u>	<u>10</u>	<u>710.5</u>	<u>18.43</u>	<u>7.07</u>	<u>970</u>	<u>1.37</u>	<u>-385.7</u>	<u>26.4</u>		<u>SURGE</u>	
<u>12:10</u>	<u>15</u>	<u>706.9</u>	<u>18.35</u>	<u>7.04</u>	<u>32.0</u>	<u>1.17</u>	<u>-374.6</u>	<u>29.9</u>		<u>SURGE</u>	
<u>12:20</u>	<u>20</u>	<u>736.4</u>	<u>18.26</u>	<u>6.99</u>	<u>17.3</u>	<u>1.16</u>	<u>-352.6</u>	<u>32.1</u>		<u>SURGE SCREEN</u>	
<u>12:30</u>	<u>25</u>	<u>786.7</u>	<u>17.90</u>	<u>6.91</u>	<u>31.0</u>	<u>1.14</u>	<u>-283.8</u>	<u>34.45</u>		<u>SURGE</u>	
<u>12:40</u>	<u>30</u>	<u>794.0</u>	<u>17.89</u>	<u>6.87</u>	<u>27.8</u>	<u>1.12</u>	<u>-255.1</u>	<u>35.9</u>			
<u>12:50</u>	<u>35</u>	<u>798.2</u>	<u>17.88</u>	<u>6.86</u>	<u>17.4</u>	<u>1.09</u>	<u>-225.5</u>	<u>35.7</u>		<u>SURGE</u>	
<u>13:00</u>	<u>40</u>	<u>801.2</u>	<u>17.92</u>	<u>6.85</u>	<u>16.2</u>	<u>1.13</u>	<u>-199.6</u>	<u>36.9</u>			
<u>13:10</u>	<u>45</u>	<u>805.7</u>	<u>17.85</u>	<u>6.84</u>	<u>14.7</u>	<u>1.13</u>	<u>-195.3</u>	<u>37.1</u>		<u>SURGE SCREEN</u>	
<u>13:20</u>	<u>50</u>	<u>811.8</u>	<u>17.85</u>	<u>6.83</u>	<u>23.2</u>	<u>1.17</u>	<u>-186.0</u>	<u>38.0</u>			
<u>13:30</u>	<u>55</u>	<u>815.3</u>	<u>17.85</u>	<u>6.82</u>	<u>22.6</u>	<u>1.16</u>	<u>-126.8</u>	<u>38.2</u>			
<u>13:40</u>	<u>60</u>	<u>815.8</u>	<u>18.01</u>	<u>6.82</u>	<u>12.4</u>	<u>1.25</u>	<u>-80.2</u>	<u>38.7</u>		<u>→ 3' SURGE</u>	
<u>13:50</u>	<u>65</u>	<u>814.2</u>	<u>18.03</u>	<u>6.82</u>	<u>21.3</u>	<u>1.33</u>	<u>-92.4</u>	<u>40.35</u>		<u>SURGE</u>	
<u>14:00</u>	<u>70</u>	<u>818.5</u>	<u>18.03</u>	<u>6.81</u>	<u>19.9</u>	<u>1.39</u>	<u>-77.8</u>	<u>40.8</u>			
<u>14:10</u>	<u>75</u>	<u>822.5</u>	<u>17.99</u>	<u>6.80</u>	<u>7.15</u>	<u>1.46</u>	<u>-85.5</u>	<u>41.2</u>		<u>→ 6' SURGE</u>	
<u>14:20</u>	<u>80</u>	<u>814.1</u>	<u>17.81</u>	<u>6.82</u>	<u>12.0</u>	<u>1.40</u>	<u>-116.2</u>	<u>43.1</u>		<u>SURGE</u>	
<u>14:30</u>	<u>85</u>	<u>820.5</u>	<u>17.74</u>	<u>6.80</u>	<u>8.6</u>	<u>1.43</u>	<u>-72.9</u>	<u>44.4</u>		<u>→ 9' SURGE</u>	
		= TOTAL VOLUME REMOVED (gal.)									

DEVELOPMENT METHOD: RECLAIMER + SURGING
Flow RATE = 0.5 gpm

NOTES: WELL PAD TO BE INSTALLED, DEPTHS MEASURED FROM TOC

WELL DEVELOPMENT FIELD RECORD

JOB NAME <u>NES DEVELOPMENT</u> DEVELOPED BY <u>J. WAGUESPACK</u> STARTED DEVEL. <u>11/06/20 / 11:40</u> <small>DATE TIME</small> W.L. BEFORE DEVEL. <u>9.58 / 11/06 / 11:00</u> <small>DEPTH DATE TIME</small> WELL DEPTH: BEFORE DEVEL. <u>85.80' BTOL</u> STANDING WATER COLUMN (FT.) <u>76.22'</u> SCREEN LENGTH <u>10' : 75.80 - 85.80'</u>	JOB NO. <u>166849618</u> WELL NO. <u>B-111D</u> DATE OF INSTALL. _____ SHEET <u>2</u> OF <u>2</u> COMPLETED DEVEL. <u>11.09.20 / 11:41</u> <small>DATE TIME</small> AFTER DEVEL. <u>14.35 / 11.09 / 11:41</u> <small>DEPTH DATE TIME</small> AFTER DEVEL. <u>85.80</u> WELL DIA. (in) <u>2</u> STANDING WELL VOLUME _____ gal. DRILLING WATER LOSS _____ gal.
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DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS					DO	ORP	REMARKS DTW	PUMP FROM BOTTOM + NOTES
		SPEC. COND. (mS/cm)	TEMP. (°C)	pH (s.u.)	Turbidity (NTU)					
11/06/14:40	90	820.3	17.72	6.81	9.86	1.61	-95.5	47.1	9', SURGE	
14:50	95	825.8	17.72	6.79	9.1	1.58	-77.2	48.8	-> 6', SURGE	
15:00	100	842.2	17.71	6.74	59.0	1.20	-43.2	44.9		
15:10	105	839.0	17.65	6.73	90.5	1.10	-132.8	43.1		
15:20	110	809.3	17.63	6.67	104.7	1.03	-123.6	42.7		
15:30	115	808.4	17.61	6.68	50.8	1.07	-103.3	42.8	SURGE	
15:40	120	809.9	17.59	6.68	37.1	1.10	-106.1	42.8		
15:50	125	811.3	17.59	6.67	37.9	1.14	-55.6	42.6		
16:00	130	813.5	17.56	6.68	31.1	1.18	-63.1	42.7		
16:10	135	813.6	17.57	6.68	10.27	1.20	-60.1	42.3		
16:20	140	817.9	17.54	6.67	5.08	1.20	-48.4	41.8	-> 5', RECHARGE	
11/09/10:25	140	RESUME DEV						8.65	6', SURGE	
10:35	145	871.6	19.26	6.77	7.74	2.62	-265.3	19.50	-> 5'	
10:45	150	806.7	18.65	6.89	7.40	1.26	-213.4	24.7		
		RECHARGING FOR LOW FLOW DEV - 0.5 GPM @ 11:06								
11:06		792.7	21.78	7.06	7.2	1.48	-26	13.00	5', 300 GPM	
11:41	+2.7 gal	826.8	20.03	6.88	1.16	0.12	-384.30	14.35		
		LOW FLOW DEV COMPLETE								
	152.7	= TOTAL VOLUME REMOVED (gal.)								

DEVELOPMENT METHOD: RECLAIMER + SURGING
 Flow Rate = 0.5 gpm

NOTES:

Product Name: Low-Flow System

Date: 2020-11-09 11:44:45

Project Information:

Operator Name Jude Waguespack
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Reclaimer
Tubing Type LDPE
Tubing Diameter .250 in
Tubing Length 80 ft

Pump placement from TOC 80 ft

Well Information:

Well ID B-111D
Well diameter 2 in
Well Total Depth 85.80 ft
Screen Length 10 ft
Depth to Water 13.00 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 2.302218 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 16.2 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:21:36	900.58	20.17	6.88	815.91	2.19	14.45	0.18	-426.21
Last 5	11:26:36	1200.58	19.72	6.89	817.90	1.26	14.35	0.15	-415.17
Last 5	11:31:36	1500.58	19.68	6.89	820.50	1.33	14.35	0.14	-374.46
Last 5	11:36:36	1800.58	19.89	6.88	822.11	0.89	14.35	0.13	-374.89
Last 5	11:41:36	2100.59	20.03	6.88	826.81	1.16	14.35	0.12	-384.27
Variance 0			-0.04	0.00	2.60			-0.02	40.71
Variance 1			0.21	-0.00	1.61			-0.01	-0.43
Variance 2			0.14	-0.00	4.70			-0.01	-9.38

Notes

Skipped reading at 600s

Grab Samples

Oct 2020

October 2019

Daily Calibration Log

166849618

Project Plant McDonough
Field Staff *Stephanie Brodie*

Instrument Calibration

Date: *10/29/20* Time: *10:22*

Parameter	Units	Standard	SmarTROLL SN <i>512733</i>	SmarTROLL SN <i>512733</i>	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	<i>93.1 %</i>	93.1		
Conductivity	ms/cm	1413	<i>4615</i>	<i>4484</i>		
pH	S.U.	4.00	<i>4.11</i>	<i>4.31</i>		
pH	S.U.	7.00	<i>7.06</i>	<i>7.10</i>		
pH	S.U.	10.00	<i>9.95</i>	<i>9.90</i>		
ORP	mV	<i>228</i>	<i>223.6</i>	<i>196.8</i>		

1386-3811

Turbidity Standard	Units	LaMotte SN <i>1386-3811</i>	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
0.0	NTU	<i>0.02</i>	<i>0.00</i>		
1.0	NTU	<i>1.00</i>	<i>1.01</i>		
10.0	NTU	<i>9.94</i>	<i>10.00</i>		

Date: _____ Time: _____

Parameter	Units	Standard	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100				
Conductivity	ms/cm	1.413				
pH	S.U.	4.00				
pH	S.U.	7.00				
pH	S.U.	10.00				
ORP	mV					

Turbidity Standard	Units	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
0.0	NTU				
1.0	NTU				
10.0	NTU				

Notes: DO - Dissolved Oxygen; ms/cm - millisiemens/second; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units



October 2019
Nov 2020

Daily Calibration Log

166849618

Project Plant McDonough
Field Staff JUDE WAGUESPACK

Instrument Calibration

Date: 11/02/20 Time: 08:30 11/03/20 08:00 11/04/20 07:02 11/05/20 08:19

Parameter	Units	Standard	SmarTROLL SN 512733	SmarTROLL SN 512733	SmarTROLL SN 512733	SmarTROLL SN 512733
DO	% saturation	100	94.4	94.9	95.3	93.3
Conductivity	ms/cm	1413490	4549	4461	4440	4419
pH	S.U.	4.00	4.46	4.49	4.46	4.43
pH	S.U.	7.00	7.10	7.06	7.03	6.97
pH	S.U.	10.00	9.76	9.72	9.74	9.71
ORP	mV	228.0	246.8	244.0	243.2	217.6

Turbidity Standard	Units	LaMotte SN 1386-3811	LaMotte SN 1386-3811	LaMotte SN 1386-3811	LaMotte SN
0.0	NTU	0.01	0.06	0.00	
1.0	NTU	0.82	0.93	1.08	
10.0	NTU	12.1	10.65	9.71	

Date: 11/06/20 Time: 08:45 11/09/20 09:12 11/10/20 08:57 11/11/20 07:59

Parameter	Units	Standard	SmarTROLL SN 512733	SmarTROLL SN 512733	SmarTROLL SN 512733	SmarTROLL SN 512733
DO	% saturation	100	94.9	93.2	94.2	92.5
Conductivity	ms/cm	1413490	4363	4292	4406	4367
pH	S.U.	4.00	4.36	4.33	4.34	4.28 4.35
pH	S.U.	7.00	6.91	6.88	7.14	7.12
pH	S.U.	10.00	9.70	9.72	9.95	9.97
ORP	mV	228.0	233.9	225.9	227.2	221.7

Turbidity Standard	Units	LaMotte SN 1386-3811	LaMotte SN 1386-3811	LaMotte SN 1386-3811	LaMotte SN 1386-3811
0.0	NTU	0.0	0.01	0.0	0.01
1.0	NTU	0.83	0.82	0.86	1.05
10.0	NTU	11.46	12.08	11.73	9.23

Notes: DO - Dissolved Oxygen; ms/cm - millisiemens/second; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nephelometric Turbidity Units



Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration

Date: 11-9-20 Time: 0750

Parameter	Units	Standard	SmarTROLL SN 728623	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	100			
Conductivity	us/cm	4490	4327			
pH	S.U.	4.00	3.89			
pH	S.U.	7.00	7.09			
pH	S.U.	10.00	9.97			
ORP	mV	228.00	223.0			

Turbidity	Units	Standard	LaMotte SN 6405-1416	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Date: 11-11-20 Time: 0735

Parameter	Units	Standard	SmarTROLL SN 728623	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	100			
Conductivity	us/cm	4490	4087			
pH	S.U.	4.00	4.01			
pH	S.U.	7.00	6.66			
pH	S.U.	10.00	9.67			
ORP	mV	228.00	226.8			

Turbidity	Units	Standard	LaMotte SN 6405-1416	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nephelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
 Field Staff C. Tidwell/D. Thomas/J. Waguespack

Instrument Calibration

Date: 11-12-20 Time: 0814

Parameter	Units	Standard	SmarTROLL SN 728623	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN _____
DO	% saturation	100	98.91			
Conductivity	us/cm	4490	4330			
pH	S.U.	4.00	3.99			
pH	S.U.	7.00	7.34			
pH	S.U.	10.00	10.35			
ORP	mV	228.00	231.3			

Turbidity	Units	Standard	LaMotte SN 6405-1416	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Date: 11-13-20 Time: 0739 11-17-20/0915

Parameter	Units	Standard	SmarTROLL SN 728623	SmarTROLL SN _____	SmarTROLL SN _____	SmarTROLL SN 728623
DO	% saturation	100	99.41			100
Conductivity	us/cm	4490	4355			4495
pH	S.U.	4.00	3.97			4.05
pH	S.U.	7.00	7.04			7.11
pH	S.U.	10.00	9.96			10.31
ORP	mV	228.00	238.3			237

Turbidity	Units	Standard	LaMotte SN 6405-1416	LaMotte SN _____	LaMotte SN _____	LaMotte SN 6405-1416
	NTU	0.0	0.0			
	NTU	1.0	1.0			
	NTU	10.0	10.0			

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

Project Plant McDonough
Field Staff K. Minkara / J. Waguespack / Y.C. Soo

Instrument Calibration

		Date	12/8/20	12/9/20		
		Time	06:38	06:30		
Parameter	Units	Standard	SmarTROLL SN <u>646777</u> iPad # <u>074</u>	SmarTROLL SN <u>646777</u> iPad # <u>074</u>	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____
DO	% saturation	100	93.2	96.0		
Conductivity	us/cm	4490	4448	4401		
pH	S.U.	4.00	4.31	4.32		
pH	S.U.	7.00	7.10	7.09		
pH	S.U.	10.00	9.87	9.88		
ORP	mV	228.00	235.3	234.1		

Turbidity	Units	Standard	LaMotte SN <u>1438-3911</u>	LaMotte SN <u>1438-3111</u>	LaMotte SN _____	LaMotte SN _____
	NTU	0.0	0.01	0.01	-0.02	
NTU	1.0	1.0	1.24	1.13		
NTU	10.0	10.0	9.12	8.17		

		Date				
		Time				
Parameter	Units	Standard	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____	SmarTROLL SN _____ iPad # _____
DO	% saturation	100				
Conductivity	us/cm	4490				
pH	S.U.	4.00				
pH	S.U.	7.00				
pH	S.U.	10.00				
ORP	mV	228.00				

Turbidity	Units	Standard	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____	LaMotte SN _____
	NTU	0.0				
NTU	1.0					
NTU	10.0					

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nephelometric Turbidity Units; NC - Not calibrated

Dec 2020

166849618

November 2019

Daily Calibration Log

49132523

Project Plant McDonough
Field Staff K. Minkara / J. Waguespack / Y.C. Soo

Instrument Calibration

		Date	12/8/20	12/9/20	12/10/20	12/11/20
		Time	0630	0615	1300	1030
Parameter	Units	Standard	SmarTROLL SN <u>647057</u> iPad # <u>93</u>	SmarTROLL SN <u>647057</u> iPad # <u>93</u>	SmarTROLL SN <u>647057</u> iPad # <u>97</u>	SmarTROLL SN _____ iPad # _____
DO	% saturation	100	93.5	95.3	92.7	
Conductivity	us/cm	4490	4377	4341	4204	
pH	S.U.	4.00	4.19	4.21	4.12	
pH	S.U.	7.00	6.78	6.98	6.96	
pH	S.U.	10.00	9.81	9.83	9.88	
ORP	mV	228.00	227.4	225.3	225.8	

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see pdf's

Turbidity	Units	Standard	LaMotte SN <u>7007-1416</u>	LaMotte SN <u>7007-1416</u>	LaMotte SN <u>7007-1416</u>	LaMotte SN <u>7007-1416</u>
	NTU	0.0	0.0	0.01	0.01	0.05
NTU	1.0	1.0	0.81 0.81	0.92	1.03	1.11
NTU	10.0	10.0	10.11	10.01	9.88	9.89

		Date	12-15-20	12-16-20	12-17-20	
		Time	0600	0630	0630	
Parameter	Units	Standard	SmarTROLL SN <u>646777</u> iPad # <u>94</u>	SmarTROLL SN <u>646777</u> iPad # <u>94</u>	SmarTROLL SN <u>646777</u> iPad # <u>94</u>	SmarTROLL SN _____ iPad # _____
DO	% saturation	100	92.4	93.1	94.0	
Conductivity	us/cm	4490	4332	4288	4249	
pH	S.U.	4.00	4.22	4.25	4.23	
pH	S.U.	7.00	6.99	6.99	6.98	
pH	S.U.	10.00	9.78	9.76	9.75	
ORP	mV	228.00	238.2	239.1	238.4	

Turbidity	Units	Standard	LaMotte SN <u>7007-1416</u>	LaMotte SN <u>7007-1416</u>	LaMotte SN <u>7007-1416</u>	LaMotte SN _____
	NTU	0.0	0.0	0.01	0.10	0.00
NTU	1.0	1.0	0.85	0.91	1.01	
NTU	10.0	10.0	10.15	10.01	10.00	

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nephelometric Turbidity Units; NC - Not calibrated

Dec 2020

November 2019

Daily Calibration Log

786 548618
19132523

Project Plant McDonough
Field Staff K. Minkara / J. Waguespack / Y.C. Soo

Instrument Calibration

			Date	12/7/20	12/8/20	12/9/20	
			Time	1115	0640	0630	
Parameter	Units	Standard	SmarTROLL SN 642531 iPad # 110	SmarTROLL SN 642531 iPad # 110	SmarTROLL SN 642531 iPad # 110	SmarTROLL SN iPad #	
DO	% saturation	100	95.9	95.9	100		
Conductivity	us/cm	4490	6188	4500	4414		
pH	S.U.	4.00	4.24	4.34	4.40		
pH	S.U.	7.00	6.88	6.85	6.56		
pH	S.U.	10.00	10.28	9.49	9.56		
ORP	mV	228.00	2114	202	252.3		

Turbidity	Units	Standard	LaMotte SN 2289-2612	LaMotte SN 2289-2612	LaMotte SN 2289-2612	LaMotte SN
	NTU	0.0	0.05	0.02	0.02	
	NTU	1.0	0.75	0.80	1.09	
	NTU	10.0	10.40	10.03	10.08	

			Date	12-15-20	12-16-20	12-17-20	
			Time	0600	0645	0637	
Parameter	Units	Standard	SmarTROLL SN 647057 iPad # 90	SmarTROLL SN 647057 iPad # 90	SmarTROLL SN 647057 iPad # 90	SmarTROLL SN iPad #	
DO	% saturation	100	92.0	93.3	93.0		
Conductivity	us/cm	4490	4466	4305	4443		
pH	S.U.	4.00	4.23	4.39	4.42		
pH	S.U.	7.00	7.05	7.02	7.09		
pH	S.U.	10.00	9.88	9.78	9.66		
ORP	mV	228.00	227.2	229.2	246.1		

Turbidity	Units	Standard	LaMotte SN	LaMotte SN 26862 12-16-20	LaMotte SN 26862	LaMotte SN
	NTU	0.0		0.0	0.05	
	NTU	1.0		1.05	1.03	
	NTU	10.0		10.09	10.02	

Notes: DO - Dissolved Oxygen; us/cm - microsiemens/centimeter; ORP - oxidation-reduction potential; mV - millivolts; NTU - Nphelometric Turbidity Units; NC - Not calibrated

APPENDIX C

CERTIFIED SURVEY DATA



1469 HIGHWAY 20 WEST • McDONOUGH, GA 30253
phone: 770-707-0777 fax: 770.707-0755
WWW.METRO-ENGINEERING.COM

SURVEYOR'S REPORT

SCOPE OF WORK:

Field survey of existing monitoring wells at Georgia Power Company, Plant McDonough in Smyrna, GA.

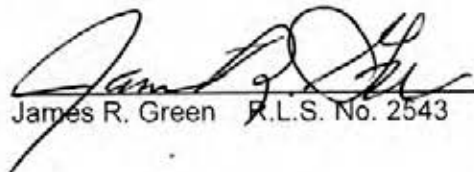
Horizontal and vertical datum was derived from RTK GPS observations with corrections from the eGPS network and conventional surveying equipment. Horizontal datum is Georgia State Plane, West Zone, NAD83(2011) and vertical datum is NAVD88.

EQUIPMENT USED TO ESTABLISH THE MONITORING WELL LOCATIONS:

Trimble R8 Dual Frequency GPS Receiver
Leica TS16 Total Station
Leica DNA10 Digital Level

CERTIFICATION:

I hereby certify that the center of well casing (PVC) has a horizontal accuracy of 0.5+/- feet or better using a Trimble R8 Dual Frequency RTK (survey-grade) global positioning system receiver referencing the Georgia State Plane, west zone, NAD83(2011) coordinate system in US survey feet. The top of well casing (PVC) elevation data was determined in feet above mean sea level based on the NAVD88 vertical datum. Vertical data was confirmed to be accurate within 0.01 foot through establishment of a closed level check loop with a Leica DNA10 digital level having a published accuracy of 0.9mm per dual-traverse kilometer.


James R. Green R.L.S. No. 2543

Date: 1/6/21



Plant McDonough
Monitoring Well Locations
January 6, 2021

Well ID	LATITUDE	LONGITUDE	NAIL		NAIL ELEV	PVC		TOP PVC ELEV	ELEV AT BASE
			NORTHING	EASTING		NORTHING	EASTING		
B-101D	N33.831990	W84.470999	1394063.3	2204167.1	821.24	1394063.6	2204168.2	824.29	821.2
B-102D	N33.831344	W84.470891	1393828.2	2204199.0	820.64	1393828.4	2204200.4	823.42	820.6
B-103D	N33.825052	W84.476091	1391542.8	2202615.0	793.77	1391543.5	2202614.4	795.96	793.8
B-104D	N33.824431	W84.477129	1391317.9	2202297.4	785.31	1391318.3	2202298.5	787.90	785.3
B-105D	N33.822547	W84.478659	1390633.9	2201832.7	776.03	1390634.5	2201831.9	779.01	776.0
B-106D	N33.832712	W84.471987	1394328.3	2203869.6	823.39	1394327.1	2203869.2	826.21	823.5
B-107D	N33.827226	W84.476158	1392333.6	2202597.0	820.44	1392334.5	2202596.4	823.38	820.6
B-108D	N33.826733	W84.477091	1392155.6	2202313.1	818.33	1392156.1	2202312.5	821.13	818.4
B-109D	N33.831682	W84.477720	1393956.4	2202127.0	847.78	1393957.5	2202127.0	850.73	847.8
B-110D	N33.824352	W84.482274	1391294.0	2200734.6	764.55	1391294.4	2200736.0	764.61	764.7
B-111D	N33.832640	W84.474992	1394302.6	2202956.5	789.04	1394303.4	2202956.4	791.87	789.1
B-72	N33.824206	W84.482307	1391241.2	2200724.9	758.45	1391241.4	2200725.9	758.46	758.5
B-73	N33.824509	W84.482395	1391351.5	2200698.5	759.16	1391351.8	2200699.4	759.21	759.2
B-74	N33.824311	W84.482504	1391278.9	2200666.3	759.18	1391279.9	2200666.1	759.06	759.2
DW-D1	N33.832657	W84.474840	NA	NA	NA	1394309.5	2203002.8	786.78	786.2
DW-D2	N33.832842	W84.473838	NA	NA	NA	1394375.8	2203307.1	788.53	788.3
DW-D3	N33.832812	W84.472368	NA	NA	NA	1394363.7	2203753.5	817.50	817.2
DW-D4	N33.831941	W84.470988	NA	NA	NA	1394045.5	2204171.7	820.68	820.4

STAFF GAGE	LATITUDE	LONGITUDE	T/POST		TOP T/POST ELEV	TOP GAGE ELEV @ 8'	ELEV AT GRD
			NORTHING	EASTING			
WT-1	N33.825586	W84.482522	1391743.6	2200662.1	759.85	759.32	755.3
WT-3	N33.824028	W84.482353	1391176.9	2200711.8	757.80	756.92	752.6
WT-4	N33.822014	W84.481690	1390443.3	2200910.8	754.13	753.21	749.2
WT-5	N33.821283	W84.480144	1390175.9	2201379.5	749.01	749.07	744.9
ET-1	N33.832761	W84.474439	1394347.0	2203124.5	NA	779.94	775.9

APPENDIX C

Certified Well Survey Report



1469 HIGHWAY 20 WEST • McDONOUGH, GA 30253
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SURVEYOR'S REPORT

SCOPE OF WORK:

Field survey of existing monitoring wells at Georgia Power Company, Plant McDonough in Smyrna, GA.

Horizontal and vertical datum was derived from RTK GPS observations with corrections from the eGPS network and conventional surveying equipment. Horizontal datum is Georgia State Plane, West Zone, NAD83(2011) and vertical datum is NAVD88.

EQUIPMENT USED TO ESTABLISH THE MONITORING WELL LOCATIONS:

Trimble R8 Dual Frequency GPS Receiver
Leica TS16 Total Station
Leica DNA10 Digital Level

CERTIFICATION:

I hereby certify that the center of well casing (PVC) has a horizontal accuracy of 0.5+/- feet or better using a Trimble R8 Dual Frequency RTK (survey-grade) global positioning system receiver referencing the Georgia State Plane, west zone, NAD83(2011) coordinate system in US survey feet. The top of well casing (PVC) elevation data was determined in feet above mean sea level based on the NAVD88 vertical datum. Vertical data was confirmed to be accurate within 0.01 foot through establishment of a closed level check loop with a Leica DNA10 digital level having a published accuracy of 0.9mm per dual-traverse kilometer.


James R. Green R.L.S. No. 2543



Date: 8/10/20

Plant McDonough
Monitoring Well Locations
August 7, 2020

Well ID	LATITUDE	LONGITUDE	NAIL NORTHING	NAIL EASTING	NAIL ELEV	PVC NORTHING	PVC EASTING	TOP PVC ELEV	ELEV AT BASE
B-100	N33.821507	W84.477304	1390255.7	2202241.1	775.32	1390254.8	2202242.1	777.95	775.3
B-16	N33.827948	W84.473793	1392595.3	2203314.4	823.54	1392595.1	2203315.4	826.47	823.6
B-18	N33.827740	W84.475241	1392520.2	2202876.1	823.89	1392521.0	2202875.5	826.56	823.9
B-24	N33.827616	W84.479935	1392479.7	2201451.1	819.19	1392479.9	2201450.0	822.11	819.3
B-25	N33.828532	W84.479765	1392813.0	2201503.9	833.41	1392813.3	2201502.7	836.54	833.5
B-26	N33.829336	W84.479610	1393105.5	2201551.4	850.61	1393105.6	2201550.4	853.60	850.6
B-28	N33.826209	W84.479175	1391968.5	2201678.9	813.28	1391967.4	2201679.2	816.08	813.3
B-29	N33.825994	W84.480021	1391891.0	2201421.4	813.47	1391890.0	2201422.0	816.43	813.5
B-3	N33.831925	W84.476784	1394044.3	2202412.0	834.86	1394045.1	2202411.5	837.78	835.0
B-31	N33.826387	W84.481648	1392034.9	2200928.0	794.84	1392034.3	2200928.5	797.47	794.9
B-41	N33.823333	W84.478925	1390921.5	2201751.1	792.40	1390920.8	2201751.9	795.20	792.4
B-50	N33.825358	W84.478639	1391656.0	2201840.9	806.49	1391657.1	2201841.0	809.67	809.2
B-51	N33.822173	W84.481705	1390500.7	2200905.6	763.29	1390501.2	2200906.5	765.92	763.3
B-52	N33.827143	W84.480378	1392307.3	2201314.3	820.18	1392308.3	2201314.8	822.89	820.3
B-54	N33.832971	W84.474387	1394422.3	2203141.2	782.54	1394423.5	2203140.7	785.46	782.6
B-55	N33.832207	W84.471067	1394142.2	2204146.8	822.86	1394142.6	2204147.9	825.12	822.9
B-56	N33.831700	W84.470934	1393957.6	2204186.8	820.95	1393957.9	2204187.8	823.59	821.0
B-57	N33.824649	W84.475687	1391397.5	2202736.1	786.03	1391396.3	2202736.9	789.04	786.0
B-58	N33.823902	W84.476706	1391126.5	2202426.0	785.20	1391125.7	2202426.5	788.17	785.2
B-59	N33.832766	W84.474846	1394348.1	2203001.5	785.41	1394349.1	2203001.1	788.00	785.5
B-6	N33.832961	W84.473972	1394420.5	2203266.5	786.45	1394419.5	2203266.5	789.47	786.5
B-60	N33.823839	W84.475205	1391101.4	2202882.2	779.25	1391100.7	2202881.6	782.13	779.2
B-61	N33.823442	W84.476443	1390958.4	2202506.9	778.95	1390957.8	2202505.8	782.09	779.0
B-62	N33.820331	W84.478719	N.A.	N.A.	N.A.	1389828.1	2201811.2	760.08	760.4
B-63	N33.823559	W84.474888	1390998.7	2202977.5	777.37	1390999.1	2202978.1	777.10	777.3
B-64	N33.832856	W84.474746	1394382.3	2203030.6	785.98	1394381.9	2203031.3	785.83	786.1
B-65	N33.832862	W84.471389	N.A.	N.A.	N.A.	1394381.2	2204050.8	821.95	822.3
B-66	N33.831427	W84.470638	1393859.2	2204277.7	813.33	1393858.2	2204277.5	815.90	813.3

Plant McDonough
Monitoring Well Locations
August 7, 2020

B-68	N33.824362	W84.482346	1391298.8	2200715.2	759.05	1391298.2	2200714.2	758.68	759.0
B-7	N33.832841	W84.472887	1394375.6	2203596.0	806.04	1394374.6	2203596.1	809.16	806.1
B-76	N33.822783	W84.475614	1390716.5	2202756.0	760.87	1390717.4	2202756.9	760.53	766.5
B-77	N33.823420	W84.475007	1390949.4	2202941.4	777.12	1390948.7	2202942.0	776.86	777.1
B-78	N33.832708	W84.474987	1394327.3	2202958.7	787.79	1394328.2	2202958.2	790.75	788.0
B-79	N33.833068	W84.474116	1394457.8	2203223.6	785.84	1394458.6	2203223.0	788.66	785.9
B-80	N33.832834	W84.473091	1394373.5	2203533.9	801.73	1394372.6	2203533.9	804.47	801.8
B-81	N33.832815	W84.472409	1394365.8	2203741.3	817.64	1394364.9	2203741.1	820.56	817.7
B-82	N33.831129	W84.470701	1393750.1	2204256.8	807.55	1393750.0	2204258.1	810.07	807.5
B-83	N33.822832	W84.475816	1390735.9	2202695.1	777.17	1390735.5	2202695.6	776.98	777.1
B-84	N33.821939	W84.477307	1390411.2	2202242.5	776.52	1390411.9	2202241.9	776.34	776.6
B-85	N33.832998	W84.474407	1394432.8	2203134.8	782.71	1394433.4	2203134.5	782.54	782.7
B-86	N33.833127	W84.474170	1394479.5	2203207.0	784.52	1394480.0	2203206.6	784.29	784.6
B-87	N33.832915	W84.473100	1394400.8	2203531.3	800.32	1394401.9	2203531.3	803.37	800.4
B-88	N33.832914	W84.472419	1394399.9	2203738.1	816.80	1394401.1	2203738.3	820.07	817.0
B-89	N33.832910	W84.471394	1394398.7	2204048.6	822.53	1394398.4	2204049.4	822.36	822.6
B-90	N33.833185	W84.474151	1394500.4	2203212.8	784.16	1394501.0	2203212.6	784.00	784.2
B-91	N33.833036	W84.474442	N.A.	N.A.	N.A.	1394447.1	2203123.9	782.98	783.1
B-92	N33.832887	W84.474761	1394393.2	2203026.4	785.30	1394392.7	2203026.7	785.08	785.3
B-93	N33.832763	W84.475024	1394348.1	2202947.0	789.19	1394348.7	2202946.7	789.07	789.2
B-94	N33.832915	W84.473158	1394400.9	2203513.8	799.12	1394402.0	2203513.7	801.74	799.2
B-95	N33.833233	W84.474299	1394519.5	2203167.2	784.18	1394518.6	2203167.7	784.00	784.3
B-96	N33.833122	W84.474524	1394479.4	2203098.8	785.19	1394478.7	2203099.3	784.92	785.3
B-97	N33.832988	W84.474823	1394430.6	2203008.0	786.50	1394430.0	2203008.3	786.29	786.6
B-98	N33.832883	W84.475066	1394392.7	2202934.6	789.81	1394392.5	2202934.0	789.67	789.8
B-99	N33.833247	W84.474573	1394524.7	2203084.9	782.57	1394524.2	2203084.5	782.39	782.6
DGWA-53	N33.830346	W84.479224	1393473.5	2201667.7	841.37	1393472.8	2201668.8	844.26	841.3
DGWA-70A	N33.822116	W84.482741	1390480.2	2200591.7	805.67	1390481.4	2200591.6	808.52	805.8
DGWA-71	N33.831695	W84.479078	1393964.3	2201714.7	861.22	1393963.3	2201714.8	863.84	861.2
DGWC-8	N33.832699	W84.471944	1394323.0	2203882.3	824.02	1394322.2	2203882.1	826.38	824.1

Plant McDonough
Monitoring Well Locations
August 7, 2020

DGWC-37	N33.822121	W84.481661	1390483.0	2200920.7	763.64	1390482.2	2200919.8	766.21	763.7
DGWC-10	N33.831317	W84.470889	1393818.1	2204200.0	820.82	1393818.3	2204201.1	823.55	820.9
DGWC-11	N33.830571	W84.471001	1393546.9	2204167.3	797.99	1393547.1	2204166.2	800.57	798.1
DGWC-12	N33.829478	W84.471122	1393149.8	2204127.3	771.10	1393149.4	2204128.3	773.86	771.2
DGWC-13	N33.828740	W84.471263	1392880.8	2204085.7	791.20	1392881.1	2204084.6	794.10	791.3
DGWC-14	N33.827896	W84.471495	1392574.5	2204014.4	789.69	1392574.2	2204013.3	792.40	789.8
DGWC-15	N33.827810	W84.472595	1392544.2	2203677.9	821.43	1392544.1	2203679.0	824.50	821.5
DGWC-17	N33.828084	W84.474664	1392645.0	2203050.2	834.14	1392645.6	2203051.0	837.05	834.2
DGWC-19	N33.827248	W84.476143	1392341.8	2202601.5	822.87	1392342.6	2202601.0	825.46	822.9
DGWC-2	N33.831683	W84.477745	1393957.1	2202119.4	848.17	1393958.0	2202119.5	850.88	848.3
DGWC-20	N33.826754	W84.477079	1392163.7	2202316.3	819.66	1392164.5	2202315.6	822.14	819.8
DGWC-21	N33.826487	W84.477911	1392066.4	2202063.3	813.47	1392067.5	2202063.5	816.28	813.5
DGWC-22	N33.826647	W84.478805	1392125.2	2201791.7	813.69	1392126.3	2201791.9	816.59	813.7
DGWC-23	N33.826957	W84.479498	1392240.4	2201582.8	815.63	1392239.7	2201582.0	818.37	815.7
DGWC-38	N33.821795	W84.480906	1390363.6	2201149.0	754.67	1390362.7	2201148.6	757.43	754.7
DGWC-39	N33.821635	W84.479616	1390302.5	2201539.8	756.93	1390303.6	2201540.1	759.89	757.0
DGWC-4	N33.832275	W84.475959	1394170.6	2202662.7	812.06	1394171.5	2202662.4	814.85	812.1
DGWC-40	N33.822523	W84.478678	1390625.1	2201826.7	776.12	1390625.7	2201825.9	779.06	776.2
DGWC-42	N33.824453	W84.478540	1391327.4	2201869.1	801.98	1391327.8	2201870.2	804.68	802.0
DGWC-47	N33.825080	W84.476104	1391553.1	2202611.3	794.35	1391553.8	2202610.5	797.45	794.3
DGWC-48	N33.824420	W84.477157	1391314.2	2202289.2	785.21	1391314.6	2202290.2	788.33	785.2
DGWC-5	N33.832647	W84.474964	1394305.3	2202965.3	788.64	1394306.3	2202965.1	791.75	788.7
DGWC-67	N33.823417	W84.481959	1390953.6	2200830.0	766.80	1390953.8	2200830.7	766.70	767.0
DGWC-68A	N33.824370	W84.482278	1391300.9	2200733.4	765.06	1391301.2	2200734.9	765.33	765.4
DGWC-69	N33.825150	W84.482537	1391583.9	2200657.2	763.99	1391585.0	2200657.1	763.75	764.0
DGWC-9	N33.831969	W84.470993	1394055.6	2204168.9	821.86	1394055.9	2204170.0	824.35	821.8

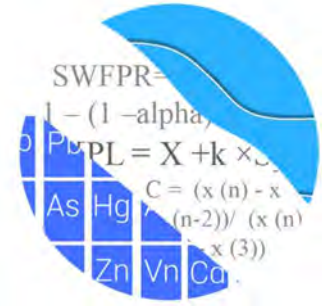
APPENDIX D

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 McDonough Ash Pond (AP-1)
September 2020 Statistical Analysis

Dear Mr. Abraham,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the September 2020 Semi-Annual Groundwater Monitoring and Corrective Action Statistical summary of groundwater data for Georgia Power Company's Plant McDonough AP-1. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), 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).

Sampling for the Appendix III parameters began in 2016, and at least 8 background samples were collected at each of the groundwater monitoring wells. Semi-annual sampling of the majority of Appendix IV constituents has been performed for several years in accordance with the Georgia Department of Natural Resources, Environmental Protection Division groundwater monitoring regulations. A list of all parameters is provided below. The terms "parameters" and "constituents" are used interchangeably.

The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient wells:** DGWA-53, DGWA-70A, and DGWA-71
- **Downgradient wells:** DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A, and DGWC-69
- **Delineation wells:** B-62, B-74, and B-100

Delineation wells were installed during 2020 and have limited data which are included in this report only on the time series and box plots.

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. The analysis is prepared according to the recommended statistical methodology prepared in the Fall 2017 by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance.

The CCR program consists of the following constituents:

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) – antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of well/constituent pairs with 100% nondetects follows this letter.

Time series plots for Appendix III and IV parameters at all wells are provided for the purpose of screening data at these wells (Figure A). 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).

In earlier analyses, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters 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 were provided with the previous screening to demonstrate that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance. 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.

Summary of Statistical Methods – Appendix III Parameters:

Based on the earlier evaluation described above, the following method was selected:

- Interwell prediction limits, combined with a 1-of-2 resample plan for boron, calcium, chloride, fluoride, pH, sulfate, and TDS

Parametric prediction limits 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 the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended 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 distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- 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 the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In some cases, earlier 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 of limits, the deselected values will continue to be reported and shown in tables and graphs.

Summary of Background Screening – Conducted in March 2019

Outlier and Trend Testing

Time series plots are 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 all wells for 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.

Using the Tukey box plot method, several outliers were identified and the reports were submitted with the screening. In cases where the most recent value was identified as an outlier, values were not flagged in the database at that time as they may represent a future trend. If future values 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.

Of the outliers identified by Tukey's method, only a few of these values were flagged in the database as all other values were similar to remaining measurements or were nondetects.

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 each well 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 earlier data 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 screening report and showed two statistically significant decreasing trends for the Appendix III parameters. The only trend identified in the upgradient wells was a statistically significant decreasing trend for sulfate in well DGWA-71. All trends noted were relatively low in magnitude when compared to average concentrations; therefore, no adjustments were made to the data sets.

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 no variation among upgradient well data for fluoride, making this constituent eligible for interwell analyses. Variation was noted for boron, calcium, chloride, pH, sulfate, and TDS which would indicate intrawell analyses may be most appropriate for these parameters. While data were further tested for intrawell eligibility during the screening, interwell methods will be used for all Appendix III constituents in accordance with Georgia EPD requirements.

Statistical Analysis of Appendix III Parameters – September 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all historical upgradient well data through September 2020 (Figure D). 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 and, therefore, no exceedance is noted and no further action is necessary. If no resample is collected, the original result is considered a confirmed exceedance. Several prediction limit exceedances were noted for Appendix III parameters. A summary table of the interwell prediction limits follows this letter.

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 E). Upgradient wells 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 unrelated to practices at the site. A summary of the trend test results follows this letter. Statistically significant trends were noted for the following well/constituent pairs:

Increasing trends:

- Chloride: DGWC-38 and DGWC-67

Decreasing trends:

- Calcium: DGWA-53 (upgradient) and DGWA-71 (upgradient)
- Chloride: DGWC-39
- Sulfate: DGWA-70A (upgradient), DGWA-71 (upgradient), and DGWC-68A
- TDS: DGWA-53 (upgradient)

Statistical Analysis of Appendix IV Parameters – September 2020

Interwell tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data for Appendix IV constituents (Figure F). Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for barium and 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) (Figure G).

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 levels 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 2020 sample event for the federal and state rules (Figure G). To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in accordance with the federal and state requirements in each downgradient well (Figures H and I, respectively). 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 CCR Rules for the federal requirements and the Georgia EPD Rules 391-3-4-.10(6)(a) for the State requirements. 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. A summary of the confidence intervals follows this letter . Exceedances were noted for the following well/constituent pairs:

Federal & State:

- Arsenic: DGWC-69
- Cobalt: DGWC-40
- Molybdenum: DGWC-68A

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for McDonough Ash Pond 1. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,



Kristina L. Rayner
Groundwater Statistician

100% Non-Detects

Analysis Run 10/29/2020 4:11 PM View: 100% Nondetects - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Antimony (mg/L)

DGWC-37, DGWC-38, DGWC-39, DGWC-40, B-74

Arsenic (mg/L)

DGWC-68A, B-62, B-100

Beryllium (mg/L)

DGWA-53, DGWC-39, DGWC-67

Cadmium (mg/L)

DGWA-71, DGWC-39, B-62

Chromium (mg/L)

DGWA-53, DGWC-39, B-62, B-74

Cobalt (mg/L)

B-62

Fluoride (mg/L)

B-100

Lead (mg/L)

DGWA-53, B-62

Lithium (mg/L)

DGWC-39

Mercury (mg/L)

B-62, B-74

Molybdenum (mg/L)

DGWA-70A, DGWC-37, DGWC-39, DGWC-40, DGWC-67, B-62, B-100

Selenium (mg/L)

DGWA-53, DGWA-70A, DGWA-71, DGWC-37, DGWC-38, DGWC-39, DGWC-67, DGWC-68A, DGWC-69, B-62, B-74, B-100

Thallium (mg/L)

DGWA-53, DGWC-37, DGWC-67, DGWC-69, B-62, B-74, B-100

Interwell Prediction Limit Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/4/2020, 3:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	9/24/2020	1.6	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	9/24/2020	2.9	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	9/25/2020	3.3	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	9/23/2020	0.76	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	9/23/2020	3.2	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	9/23/2020	1.7	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40	n/a	9/24/2020	55.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40	n/a	9/24/2020	84.1	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40	n/a	9/25/2020	92.5	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40	n/a	9/23/2020	41.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40	n/a	9/23/2020	42	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40	n/a	9/23/2020	50.2	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	4.3	n/a	9/24/2020	5.6	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.3	n/a	9/24/2020	8.2	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.3	n/a	9/25/2020	7.9	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.3	n/a	9/23/2020	19.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.3	n/a	9/23/2020	7.1	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.3	n/a	9/23/2020	4.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
pH (SU)	DGWC-40	6.6	5.3	9/23/2020	4.78	Yes	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	31	n/a	9/24/2020	84.1	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	31	n/a	9/24/2020	240	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	31	n/a	9/25/2020	153	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	31	n/a	9/23/2020	190	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	31	n/a	9/23/2020	99.8	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	31	n/a	9/23/2020	38.7	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	280	n/a	9/24/2020	489	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	280	n/a	9/25/2020	460	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	280	n/a	9/23/2020	357	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	280	n/a	9/23/2020	296	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2

Interwell Prediction Limit Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/4/2020, 3:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	9/24/2020	1.6	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	9/24/2020	2.9	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	9/25/2020	3.3	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	9/23/2020	0.76	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	9/23/2020	3.2	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	9/23/2020	1.7	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-69	0.13	n/a	9/23/2020	0.041J	No	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40	n/a	9/24/2020	55.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40	n/a	9/24/2020	84.1	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40	n/a	9/25/2020	92.5	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40	n/a	9/23/2020	41.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40	n/a	9/23/2020	42	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40	n/a	9/23/2020	50.2	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-69	40	n/a	9/23/2020	8	No	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	4.3	n/a	9/24/2020	5.6	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.3	n/a	9/24/2020	8.2	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.3	n/a	9/25/2020	7.9	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.3	n/a	9/23/2020	19.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.3	n/a	9/23/2020	7.1	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	4.3	n/a	9/23/2020	3.6	No	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.3	n/a	9/23/2020	4.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	DGWC-37	0.42	n/a	9/24/2020	0.061J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-38	0.42	n/a	9/24/2020	0.057J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-39	0.42	n/a	9/25/2020	0.086J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-40	0.42	n/a	9/23/2020	0.054J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-67	0.42	n/a	9/23/2020	0.1ND	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-68A	0.42	n/a	9/23/2020	0.07J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-69	0.42	n/a	9/23/2020	0.064J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
pH (SU)	DGWC-37	6.6	5.3	9/24/2020	6.3	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-38	6.6	5.3	9/24/2020	6.05	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-39	6.6	5.3	9/25/2020	6.38	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-40	6.6	5.3	9/23/2020	4.78	Yes	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-67	6.6	5.3	9/23/2020	6.23	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-68A	6.6	5.3	9/23/2020	6.6	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-69	6.6	5.3	9/23/2020	6.08	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	31	n/a	9/24/2020	84.1	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	31	n/a	9/24/2020	240	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	31	n/a	9/25/2020	153	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	31	n/a	9/23/2020	190	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	31	n/a	9/23/2020	99.8	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	31	n/a	9/23/2020	38.7	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-69	31	n/a	9/23/2020	5.9	No	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-37	280	n/a	9/24/2020	280	No	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	280	n/a	9/24/2020	489	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	280	n/a	9/25/2020	460	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	280	n/a	9/23/2020	357	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	280	n/a	9/23/2020	296	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-68A	280	n/a	9/23/2020	251	No	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-69	280	n/a	9/23/2020	102	No	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2

Trend Test Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 3:54 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Calcium (mg/L)	DGWA-53 (bg)	-5.213	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-71 (bg)	-0.9849	-35	-34	Yes	11	9.091	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-38	0.2409	39	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.3668	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4474	46	38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3438	-40	-38	Yes	12	25	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.262	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-3.602	-47	-38	Yes	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-53 (bg)	-26.46	-41	-38	Yes	12	0	n/a	n/a	0.01	NP

Trend Test Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 3:54 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	DGWA-53 (bg)	-0.0003249	-5	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-70A (bg)	0	1	38	No	12	50	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-71 (bg)	-0.00009656	-1	-34	No	11	18.18	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-37	-0.07542	-17	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-38	-0.00343	-2	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-39	-0.04541	-18	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-40	-0.02133	-23	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-67	0.07599	30	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-68A	-0.08493	-21	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-53 (bg)	-5.213	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-70A (bg)	-0.1112	-19	-38	No	12	8.333	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-71 (bg)	-0.9849	-35	-34	Yes	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-37	0.01881	1	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-38	4.727	34	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-39	1.118	10	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-40	1.329	20	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-67	0.5957	14	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-68A	0.619	12	38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-53 (bg)	-0.2527	-40	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-70A (bg)	-0.08248	-13	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-71 (bg)	-0.07123	-11	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-37	-0.1399	-20	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-38	0.2409	39	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.3668	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-40	-0.08192	-9	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4474	46	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-69	0.4041	29	43	No	13	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-53 (bg)	0.031	4	53	No	15	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-70A (bg)	0.004574	2	48	No	14	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-71 (bg)	0.06107	33	53	No	15	0	n/a	n/a	0.01	NP
pH (SU)	DGWC-40	-0.03104	-22	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-53 (bg)	-2.258	-20	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3438	-40	-38	Yes	12	25	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.262	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-37	-4.184	-30	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-38	-6.806	-17	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-39	-25.77	-36	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-40	-10.08	-23	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-67	0	-5	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-3.602	-47	-38	Yes	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-53 (bg)	-26.46	-41	-38	Yes	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-70A (bg)	0	0	38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-71 (bg)	-5.475	-26	-38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-38	12.73	24	38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-39	-11.95	-19	-38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-40	6.266	13	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-67	-3.218	-4	-38	No	12	0	n/a	n/a	0.01	NP

Tolerance Limit Summary Table

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/18/2020, 10:01 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.0030	38	n/a	n/a	81.58	n/a	n/a	0.1424	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.0050	38	n/a	n/a	78.95	n/a	n/a	0.1424	NP Inter(NDs)
Barium (mg/L)	n/a	0.19	38	n/a	n/a	0	n/a	n/a	0.1424	NP Inter(normality)
Beryllium (mg/L)	n/a	0.0030	38	n/a	n/a	73.68	n/a	n/a	0.1424	NP Inter(normality)
Cadmium (mg/L)	n/a	0.0025	38	n/a	n/a	92.11	n/a	n/a	0.1424	NP Inter(NDs)
Chromium (mg/L)	n/a	0.010	37	n/a	n/a	54.05	n/a	n/a	0.1499	NP Inter(normality)
Cobalt (mg/L)	n/a	0.032	38	n/a	n/a	31.58	n/a	n/a	0.1424	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	5.9	40	1.062	0.3514	0	None	x^(1/3)	0.05	Inter
Fluoride (mg/L)	n/a	0.42	42	n/a	n/a	50	n/a	n/a	0.116	NP Inter(normality)
Lead (mg/L)	n/a	0.0050	38	n/a	n/a	76.32	n/a	n/a	0.1424	NP Inter(NDs)
Lithium (mg/L)	n/a	0.030	38	n/a	n/a	36.84	n/a	n/a	0.1424	NP Inter(normality)
Mercury (mg/L)	n/a	0.00050	38	n/a	n/a	89.47	n/a	n/a	0.1424	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.041	38	n/a	n/a	63.16	n/a	n/a	0.1424	NP Inter(normality)
Selenium (mg/L)	n/a	0.010	38	n/a	n/a	100	n/a	n/a	0.1424	NP Inter(NDs)
Thallium (mg/L)	n/a	0.0010	38	n/a	n/a	94.74	n/a	n/a	0.1424	NP Inter(NDs)

MCDONOUGH AP-1 GWPS TABLE					
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01	0.01
Barium, Total (mg/L)	2		0.19	2	2
Beryllium, Total (mg/L)	0.004		0.003	0.004	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005	0.005
Chromium, Total (mg/L)	0.1		0.01	0.1	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.032	0.032	0.032
Combined Radium, Total (pCi/L)	5		5.92	5.92	5.92
Fluoride, Total (mg/L)	4		0.42	4	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.041	0.1	0.041
Selenium, Total (mg/L)	0.05		0.01	0.05	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002	0.002

**Highlighted cells indicated Background is higher than MCLs or CCR-Rule Specified levels.*

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

Federal Confidence Interval Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	ln(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.1	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)

Federal Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-37	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-38	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-39	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-40	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No 12	0.002542	0.0009327	75	None	No	0.01	NP (normality)
Antimony (mg/L)	DGWC-68A	0.003	0.0008	0.006	No 12	0.002817	0.0006351	91.67	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.0019	0.006	No 13	0.002738	0.0006838	84.62	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.0019	0.01	No 13	0.004762	0.0008598	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.0005	0.01	No 13	0.004654	0.001248	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No 13	0.002714	0.002209	46.15	None	No	0.01	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No 13	0.004027	0.001853	76.92	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.00042	0.01	No 13	0.004648	0.00127	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-68A	0.005	0.005	0.01	No 13	0.005	0	100	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	In(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1138	0.09252	2	No 13	0.1032	0.0143	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03369	0.03234	2	No 13	0.03302	0.0009091	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09753	0.08432	2	No 13	0.09092	0.008879	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01815	0.0169	2	No 13	0.01752	0.0008408	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.1131	0.1014	2	No 13	0.1072	0.007854	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-68A	0.09052	0.08674	2	No 13	0.08863	0.00254	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1065	0.07028	2	No 14	0.08841	0.0256	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No 13	0.002103	0.0014	69.23	None	No	0.01	NP (normality)
Beryllium (mg/L)	DGWC-38	0.003	0.000058	0.004	No 13	0.002774	0.000816	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-39	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003353	0.002862	0.004	No 13	0.003108	0.0003303	7.692	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-67	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-68A	0.003	0.000084	0.004	No 13	0.002776	0.0008088	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.000063	0.004	No 14	0.001952	0.001459	64.29	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-37	0.0025	0.0002	0.005	No 13	0.001782	0.001121	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No 13	0.0004915	0.000659	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-39	0.0025	0.0025	0.005	No 13	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No 13	0.0009608	0.0004698	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00017	0.005	No 13	0.001785	0.001116	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No 13	0.00114	0.001141	46.15	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No 14	0.001834	0.001094	71.43	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-37	0.01	0.0007	0.1	No 13	0.00856	0.003515	84.62	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No 13	0.007835	0.004115	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-39	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No 13	0.004332	0.004667	38.46	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No 13	0.007852	0.004082	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.0005	0.1	No 13	0.009269	0.002635	92.31	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No 14	0.008056	0.003865	78.57	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0005	0.032	No 13	0.003931	0.002032	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0014	0.032	No 13	0.002462	0.00246	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-39	0.0071	0.0059	0.032	No 13	0.006623	0.001171	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.0064	0.0013	0.032	No 13	0.003346	0.002605	15.38	None	No	0.01	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.032	No 13	0.004023	0.001875	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0016	0.032	No 14	0.003643	0.001755	57.14	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.167	0.4891	5.92	No 13	0.8278	0.4555	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.017	0.4363	5.92	No 13	0.7268	0.3906	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.426	0.6196	5.92	No 13	1.023	0.5424	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.577	0.5261	5.92	No 13	1.051	0.7064	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9464	0.4432	5.92	No 13	0.6948	0.3384	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.445	0.5348	5.92	No 13	0.9897	0.6118	0	None	No	0.01	Param.

Federal Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.838	1.093	5.92	No 14	1.465	0.526	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.21	0.054	4	No 14	0.1059	0.08236	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-38	0.23	0.057	4	No 14	0.1303	0.1187	14.29	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-39	0.33	0.085	4	No 14	0.1649	0.1261	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-40	0.3518	0.134	4	No 14	0.2539	0.1665	7.143	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.07	0.03	4	No 14	0.092	0.1301	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-68A	0.15	0.082	4	No 14	0.1321	0.07898	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.1918	0.09644	4	No 15	0.1441	0.07038	6.667	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.015	No 13	0.004343	0.001626	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.015	No 13	0.00349	0.002357	69.23	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-39	0.005	0.00022	0.015	No 13	0.004254	0.001822	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.015	No 13	0.002375	0.002531	46.15	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-67	0.005	0.000056	0.015	No 13	0.003861	0.002164	76.92	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-68A	0.005	0.00035	0.015	No 13	0.004642	0.00129	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.015	No 14	0.003251	0.002436	64.29	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.04	No 13	0.01085	0.01329	30.77	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0029	0.04	No 13	0.005315	0.00742	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-39	0.03	0.03	0.04	No 13	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-40	0.0027	0.0021	0.04	No 13	0.006546	0.01041	15.38	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.04	No 13	0.006592	0.007043	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.0016	0.04	No 13	0.02782	0.007877	92.31	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.04	No 14	0.004843	0.007249	7.143	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0005	0.00006	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0005	0.00007	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0005	0.000059	0.002	No 13	0.0004661	0.0001223	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0005	0.000045	0.002	No 13	0.0003984	0.0001934	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0005	0.00007	0.002	No 14	0.0004693	0.0001149	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-37	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.001	0.1	No 13	0.005875	0.004637	53.85	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-39	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-40	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-67	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.1	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-69	0.01331	0.006682	0.1	No 14	0.01065	0.00614	7.143	None	ln(x)	0.01	Param.
Selenium (mg/L)	DGWC-37	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-38	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-39	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-40	0.01	0.0018	0.05	No 13	0.004638	0.003361	23.08	None	No	0.01	NP (normality)
Selenium (mg/L)	DGWC-67	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-68A	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-69	0.01	0.01	0.05	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-37	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 13	0.0004623	0.000443	38.46	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 13	0.0006485	0.0004629	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-40	0.001	0.000068	0.002	No 13	0.0006406	0.0004732	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-67	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.00015	0.002	No 13	0.0009346	0.0002357	92.31	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-69	0.001	0.001	0.002	No 14	0.001	0	100	None	No	0.01	NP (NDs)

State Confidence Interval Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:04 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	ln(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.041	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)

State Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:04 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-37	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-38	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-39	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-40	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No 12	0.002542	0.0009327	75	None	No	0.01	NP (normality)
Antimony (mg/L)	DGWC-68A	0.003	0.0008	0.006	No 12	0.002817	0.0006351	91.67	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.0019	0.006	No 13	0.002738	0.0006838	84.62	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.0019	0.01	No 13	0.004762	0.0008598	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.0005	0.01	No 13	0.004654	0.001248	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No 13	0.002714	0.002209	46.15	None	No	0.01	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No 13	0.004027	0.001853	76.92	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.00042	0.01	No 13	0.004648	0.00127	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-68A	0.005	0.005	0.01	No 13	0.005	0	100	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	In(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1138	0.09252	2	No 13	0.1032	0.0143	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03369	0.03234	2	No 13	0.03302	0.0009091	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09753	0.08432	2	No 13	0.09092	0.008879	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01815	0.0169	2	No 13	0.01752	0.0008408	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.1131	0.1014	2	No 13	0.1072	0.007854	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-68A	0.09052	0.08674	2	No 13	0.08863	0.00254	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1065	0.07028	2	No 14	0.08841	0.0256	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No 13	0.002103	0.0014	69.23	None	No	0.01	NP (normality)
Beryllium (mg/L)	DGWC-38	0.003	0.000058	0.004	No 13	0.002774	0.000816	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-39	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003353	0.002862	0.004	No 13	0.003108	0.0003303	7.692	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-67	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-68A	0.003	0.000084	0.004	No 13	0.002776	0.0008088	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.000063	0.004	No 14	0.001952	0.001459	64.29	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-37	0.0025	0.0002	0.005	No 13	0.001782	0.001121	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No 13	0.0004915	0.000659	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-39	0.0025	0.0025	0.005	No 13	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No 13	0.0009608	0.0004698	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00017	0.005	No 13	0.001785	0.001116	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No 13	0.00114	0.001141	46.15	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No 14	0.001834	0.001094	71.43	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-37	0.01	0.0007	0.1	No 13	0.00856	0.003515	84.62	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No 13	0.007835	0.004115	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-39	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No 13	0.004332	0.004667	38.46	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No 13	0.007852	0.004082	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.0005	0.1	No 13	0.009269	0.002635	92.31	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No 14	0.008056	0.003865	78.57	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0005	0.032	No 13	0.003931	0.002032	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0014	0.032	No 13	0.002462	0.00246	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-39	0.0071	0.0059	0.032	No 13	0.006623	0.001171	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.0064	0.0013	0.032	No 13	0.003346	0.002605	15.38	None	No	0.01	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.032	No 13	0.004023	0.001875	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0016	0.032	No 14	0.003643	0.001755	57.14	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.167	0.4891	5.92	No 13	0.8278	0.4555	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.017	0.4363	5.92	No 13	0.7268	0.3906	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.426	0.6196	5.92	No 13	1.023	0.5424	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.577	0.5261	5.92	No 13	1.051	0.7064	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9464	0.4432	5.92	No 13	0.6948	0.3384	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.445	0.5348	5.92	No 13	0.9897	0.6118	0	None	No	0.01	Param.

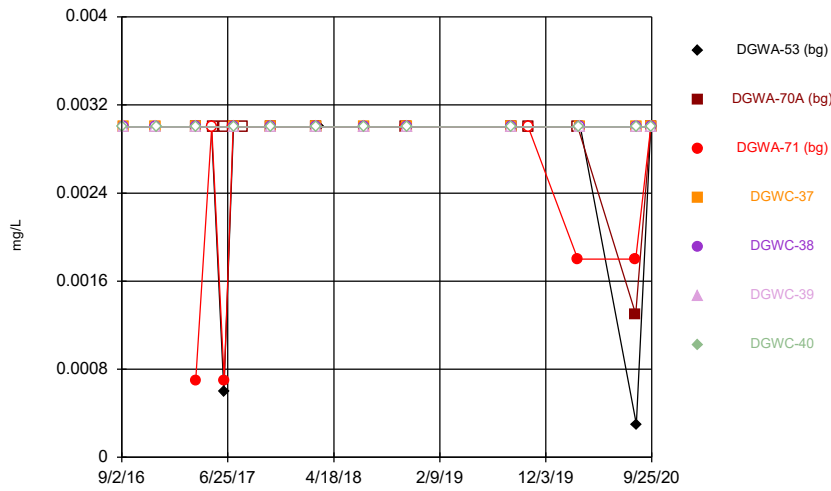
State Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:04 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.838	1.093	5.92	No 14	1.465	0.526	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.21	0.054	4	No 14	0.1059	0.08236	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-38	0.23	0.057	4	No 14	0.1303	0.1187	14.29	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-39	0.33	0.085	4	No 14	0.1649	0.1261	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-40	0.3518	0.134	4	No 14	0.2539	0.1665	7.143	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.07	0.03	4	No 14	0.092	0.1301	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-68A	0.15	0.082	4	No 14	0.1321	0.07898	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.1918	0.09644	4	No 15	0.1441	0.07038	6.667	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.005	No 13	0.004343	0.001626	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.005	No 13	0.00349	0.002357	69.23	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-39	0.005	0.00022	0.005	No 13	0.004254	0.001822	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.005	No 13	0.002375	0.002531	46.15	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-67	0.005	0.000056	0.005	No 13	0.003861	0.002164	76.92	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-68A	0.005	0.00035	0.005	No 13	0.004642	0.00129	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.005	No 14	0.003251	0.002436	64.29	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.03	No 13	0.01085	0.01329	30.77	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0029	0.03	No 13	0.005315	0.00742	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-39	0.03	0.03	0.03	No 13	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-40	0.0027	0.0021	0.03	No 13	0.006546	0.01041	15.38	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.03	No 13	0.006592	0.007043	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.0016	0.03	No 13	0.02782	0.007877	92.31	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.03	No 14	0.004843	0.007249	7.143	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0005	0.00006	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0005	0.00007	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0005	0.000059	0.002	No 13	0.0004661	0.0001223	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0005	0.000045	0.002	No 13	0.0003984	0.0001934	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0005	0.00007	0.002	No 14	0.0004693	0.0001149	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-37	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.001	0.041	No 13	0.005875	0.004637	53.85	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-39	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-40	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-67	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.041	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-69	0.01331	0.006682	0.041	No 14	0.01065	0.00614	7.143	None	ln(x)	0.01	Param.
Selenium (mg/L)	DGWC-37	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-38	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-39	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-40	0.01	0.0018	0.05	No 13	0.004638	0.003361	23.08	None	No	0.01	NP (normality)
Selenium (mg/L)	DGWC-67	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-68A	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-69	0.01	0.01	0.05	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-37	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 13	0.0004623	0.000443	38.46	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 13	0.0006485	0.0004629	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-40	0.001	0.000068	0.002	No 13	0.0006406	0.0004732	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-67	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.00015	0.002	No 13	0.0009346	0.0002357	92.31	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-69	0.001	0.001	0.002	No 14	0.001	0	100	None	No	0.01	NP (NDs)

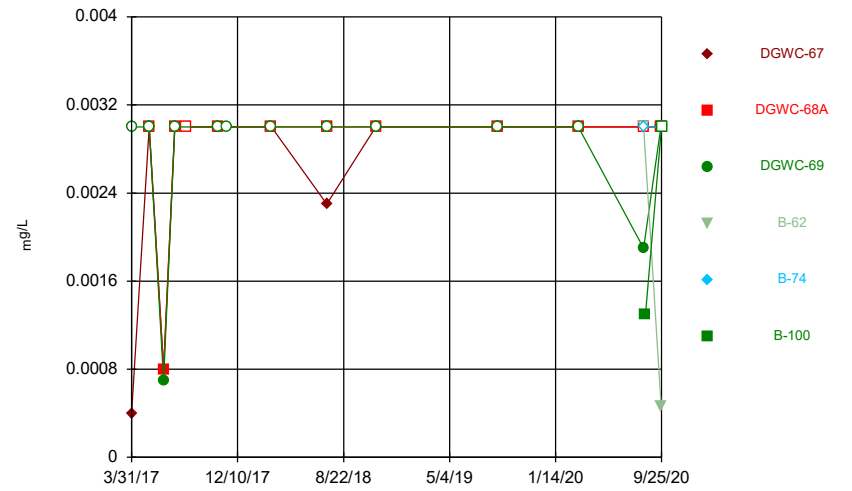
FIGURE A.

Time Series



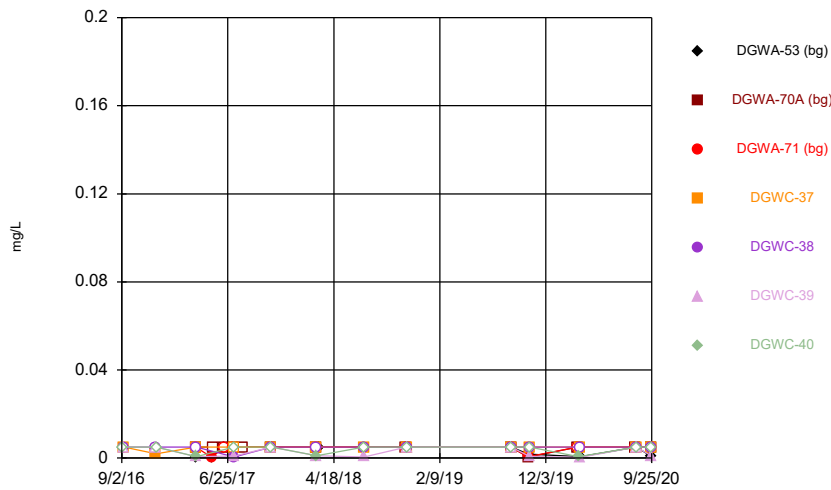
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



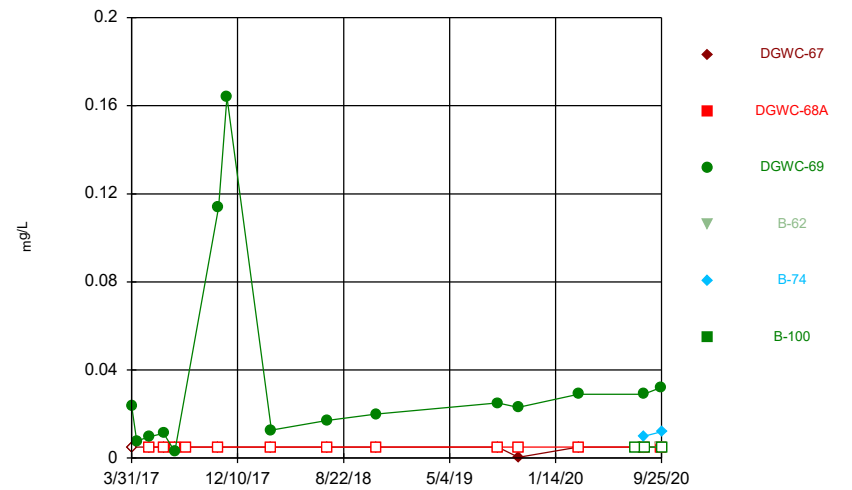
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



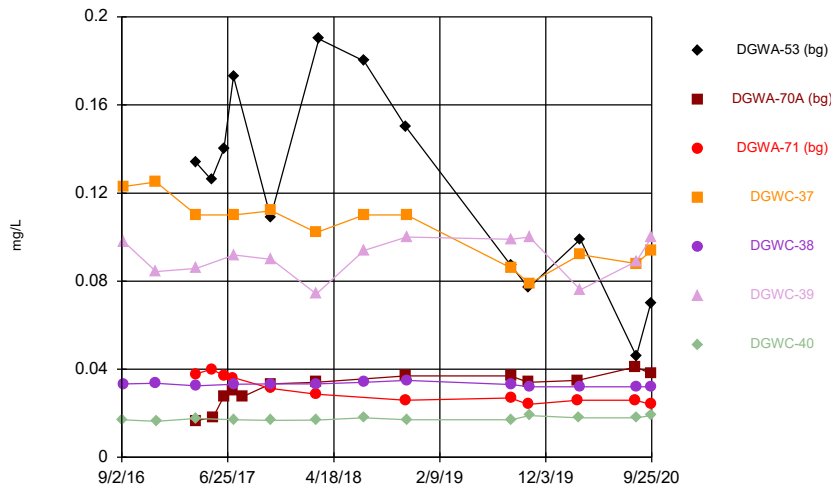
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



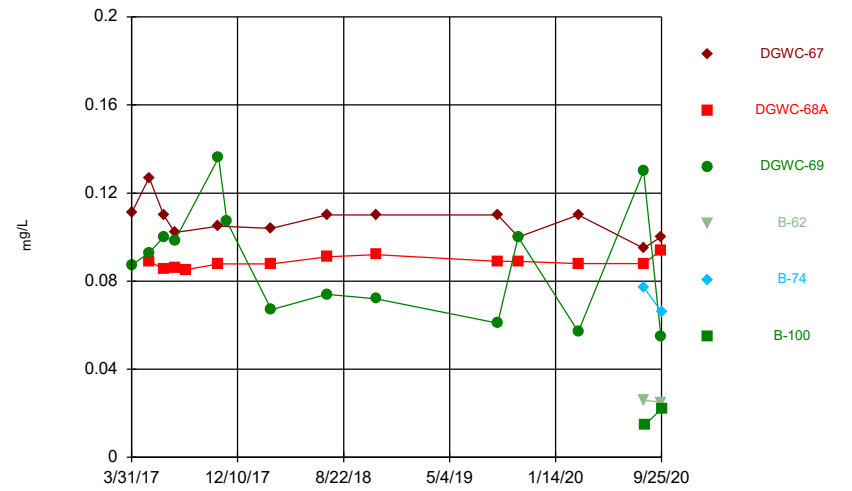
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Time Series



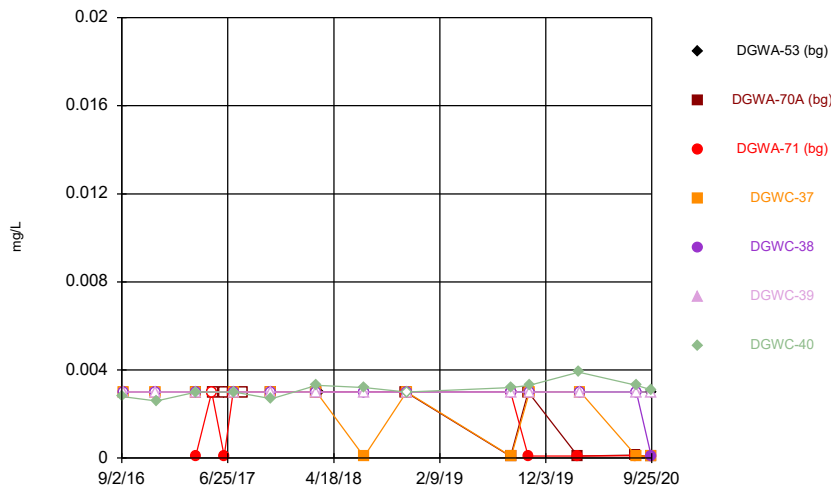
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 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



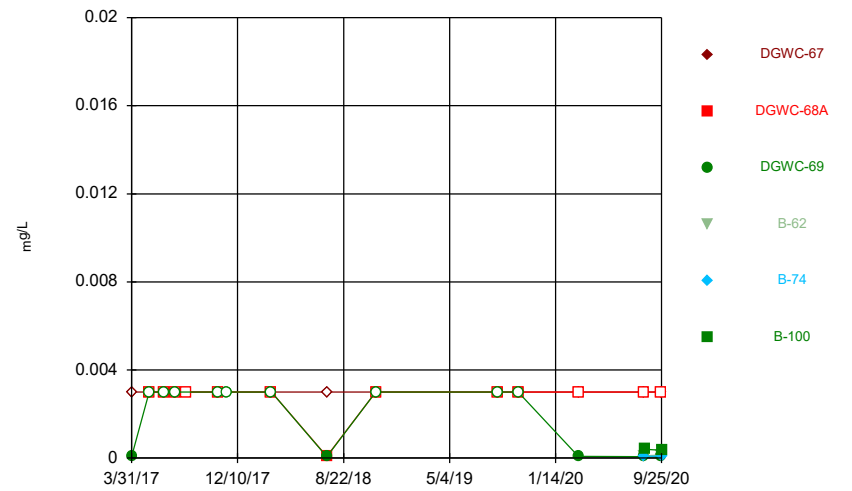
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 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



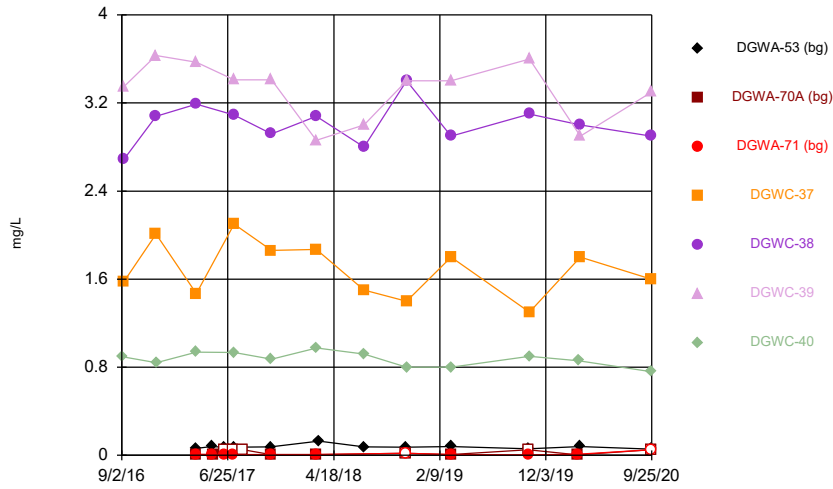
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 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



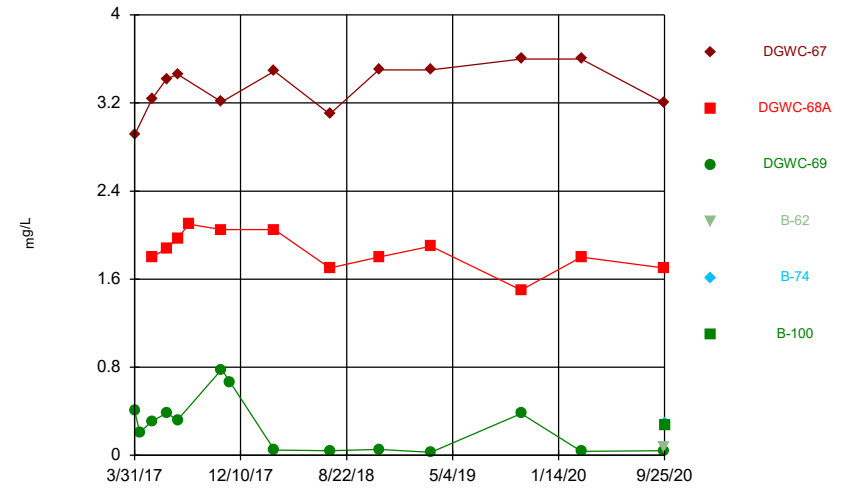
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 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



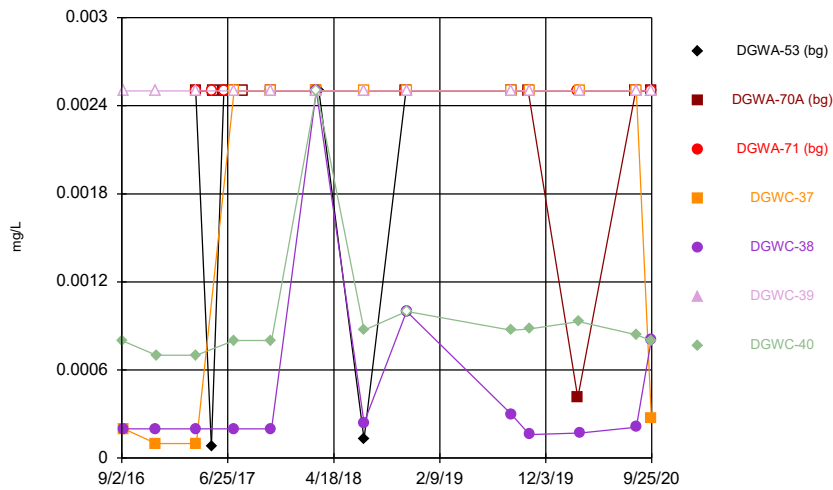
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Time Series



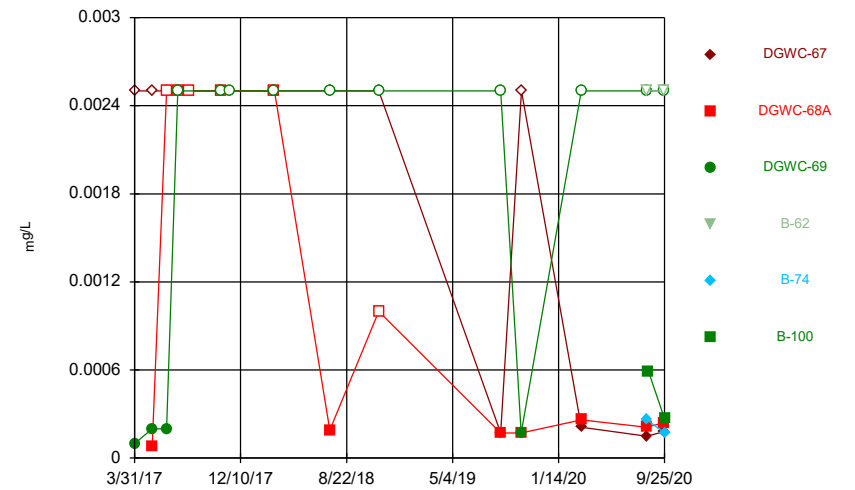
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



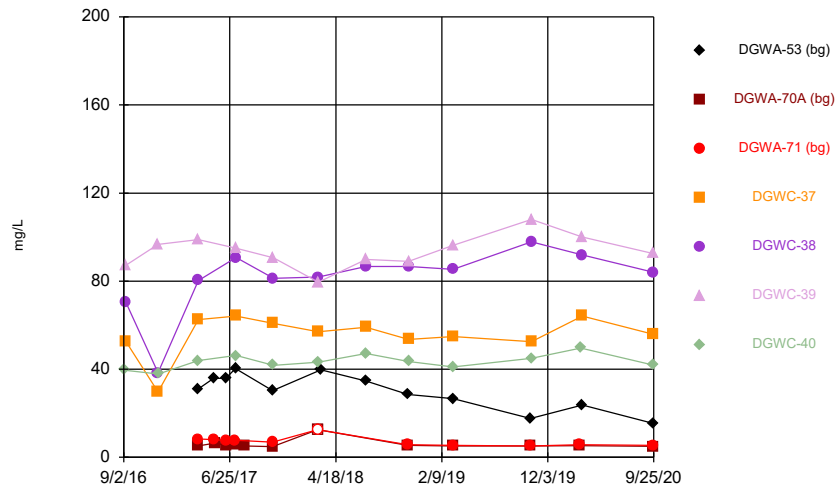
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



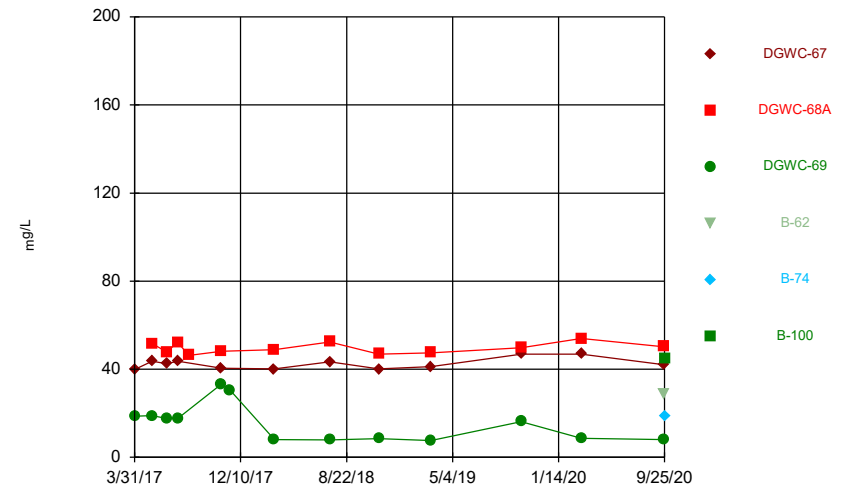
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



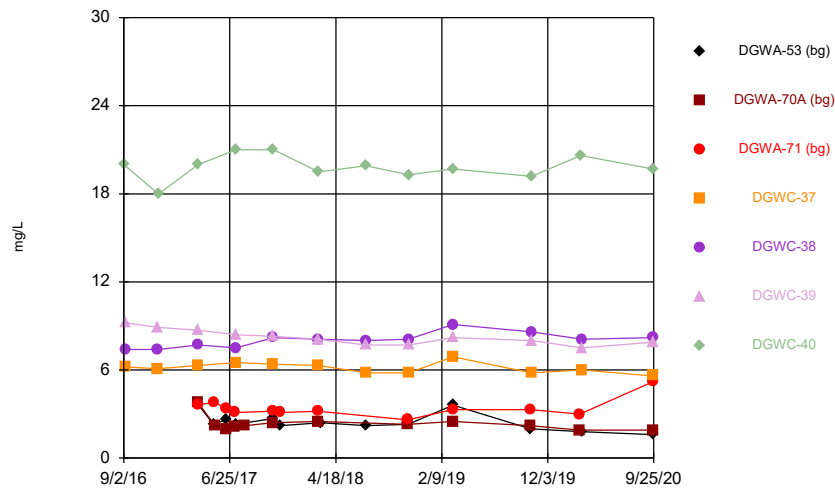
Constituent: Calcium Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



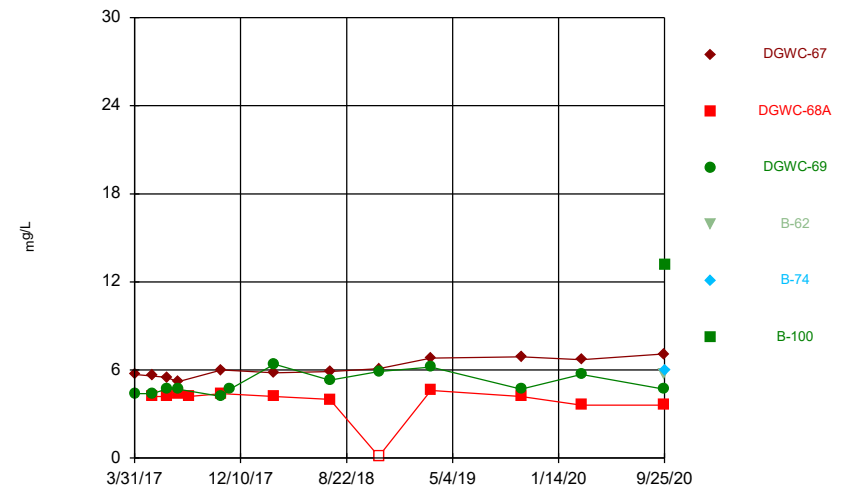
Constituent: Calcium Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



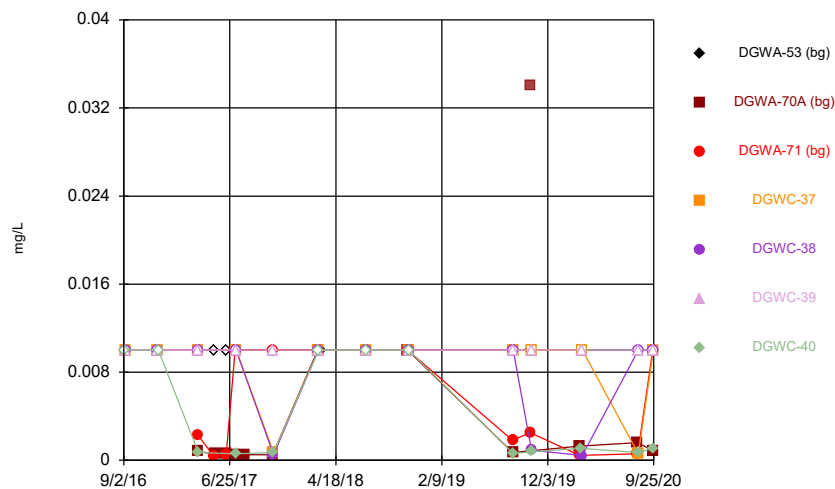
Constituent: Chloride Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



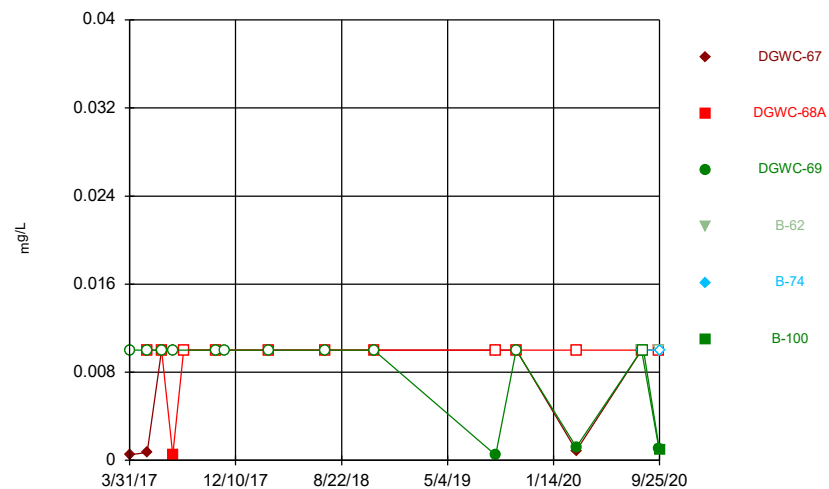
Constituent: Chloride Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



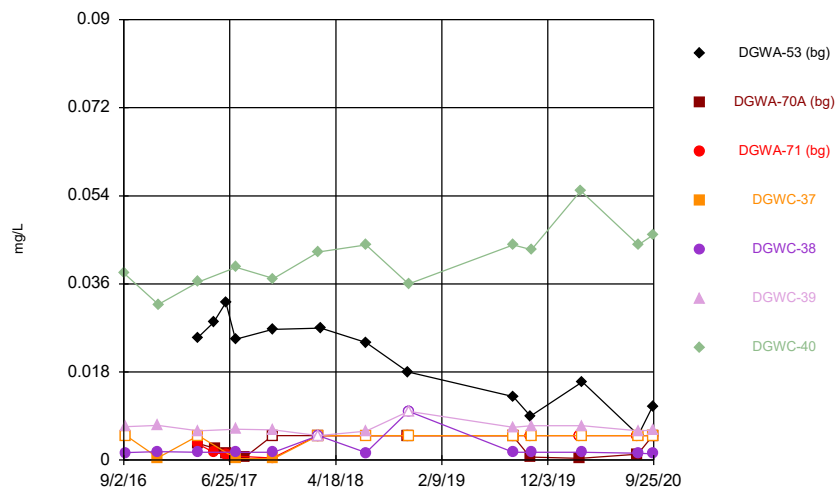
Constituent: Chromium Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



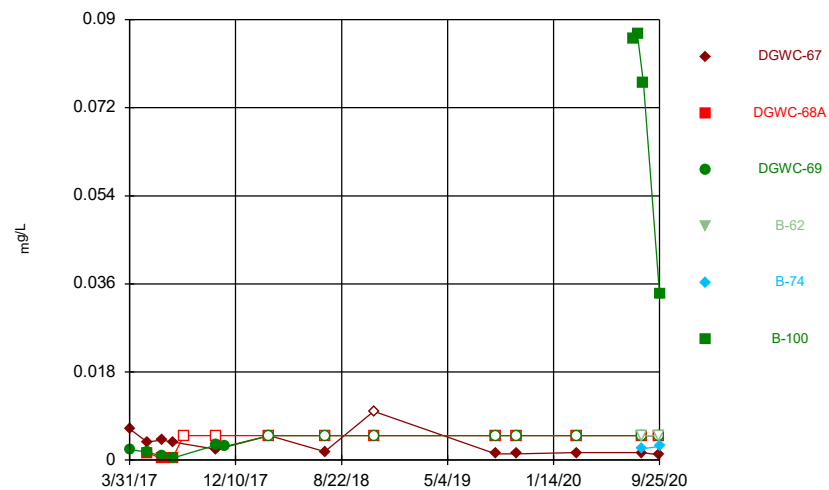
Constituent: Chromium Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



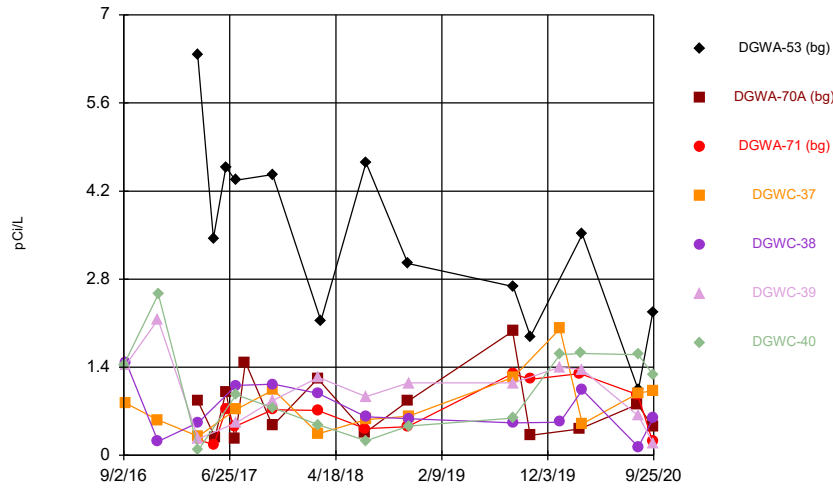
Constituent: Cobalt Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



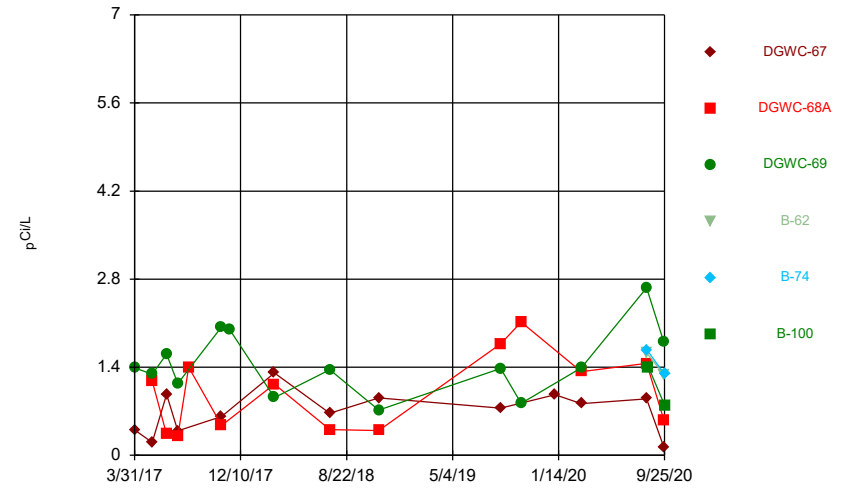
Constituent: Cobalt Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



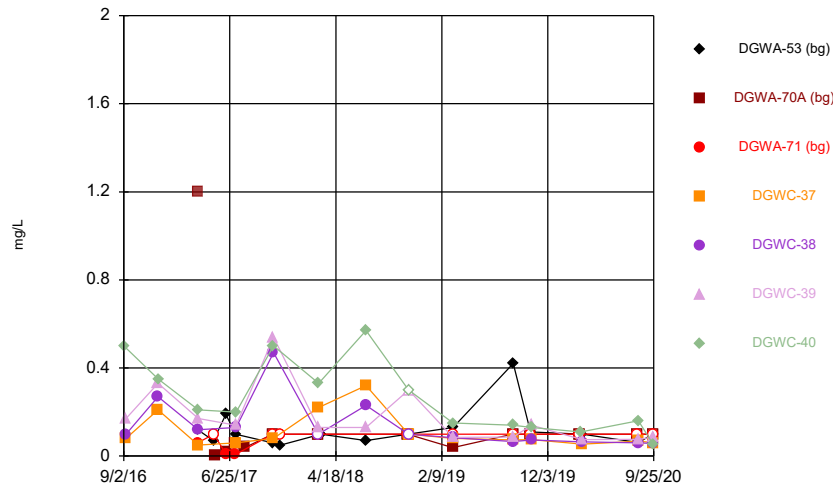
Constituent: Combined Radium 226 + 228 Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



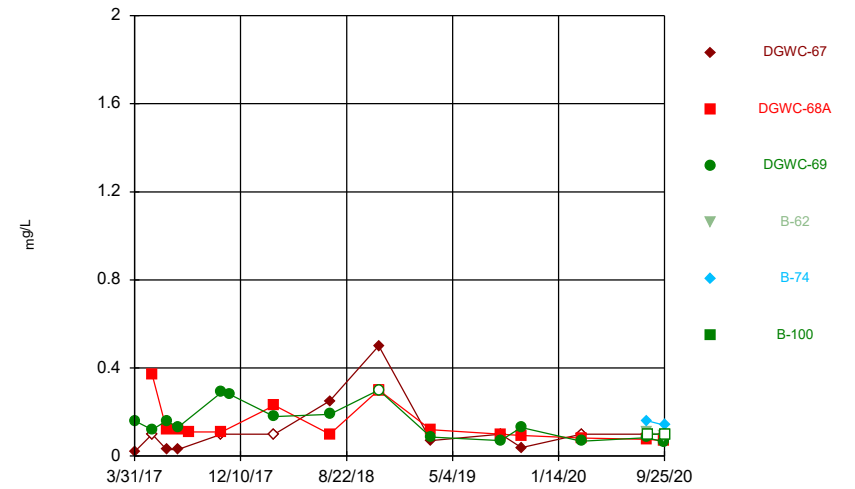
Constituent: Combined Radium 226 + 228 Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



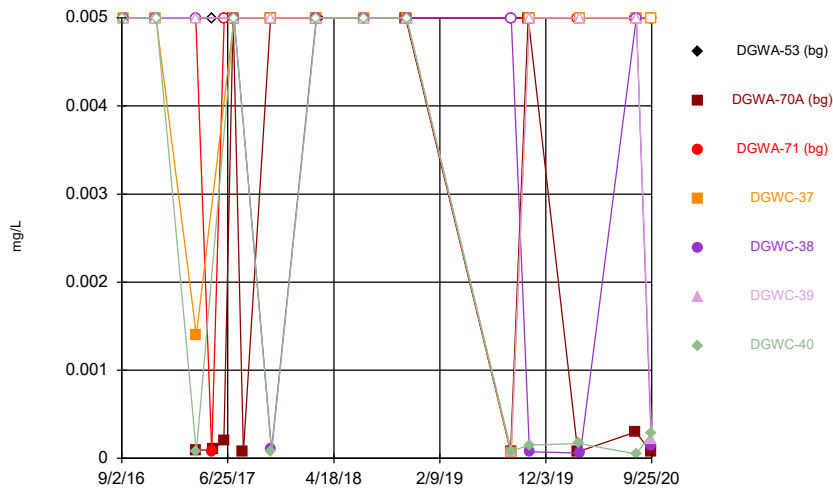
Constituent: Fluoride Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



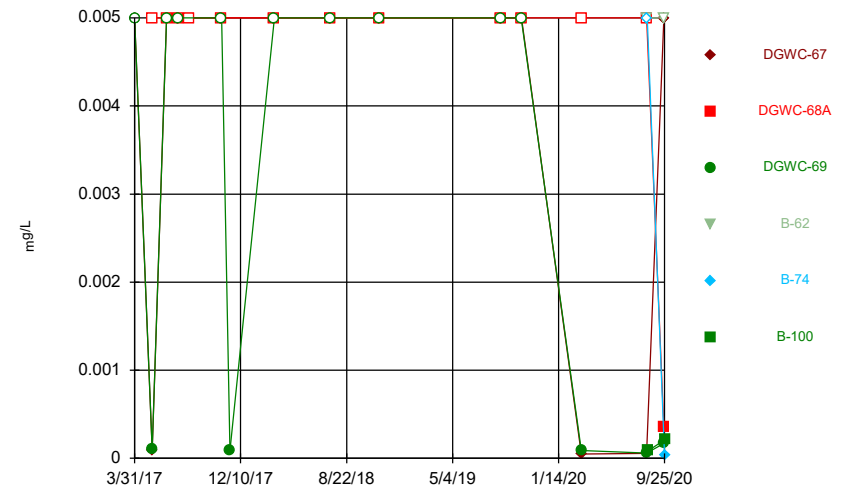
Constituent: Fluoride Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



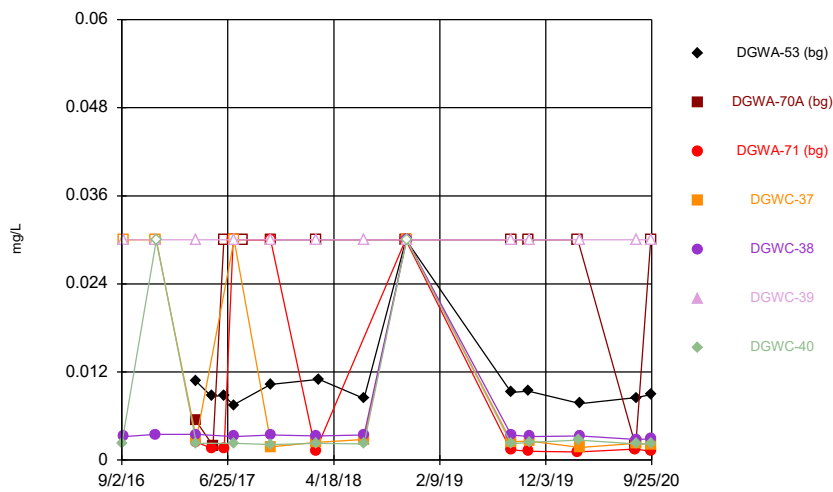
Constituent: Lead Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



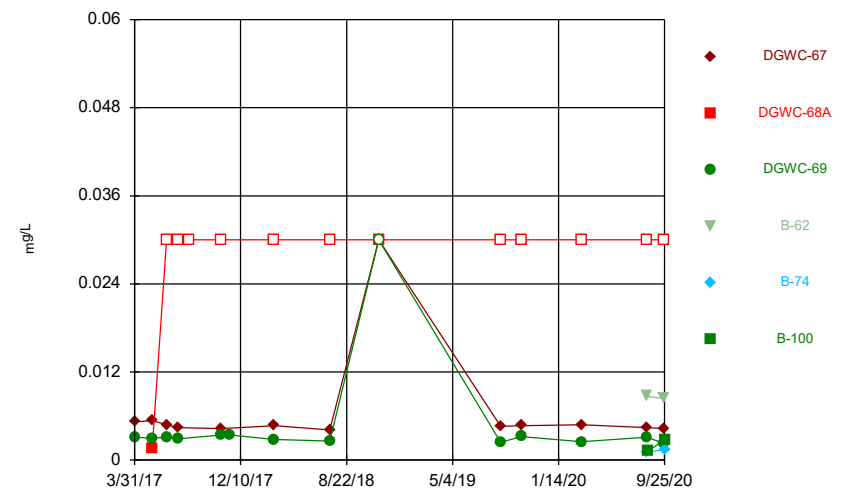
Constituent: Lead Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



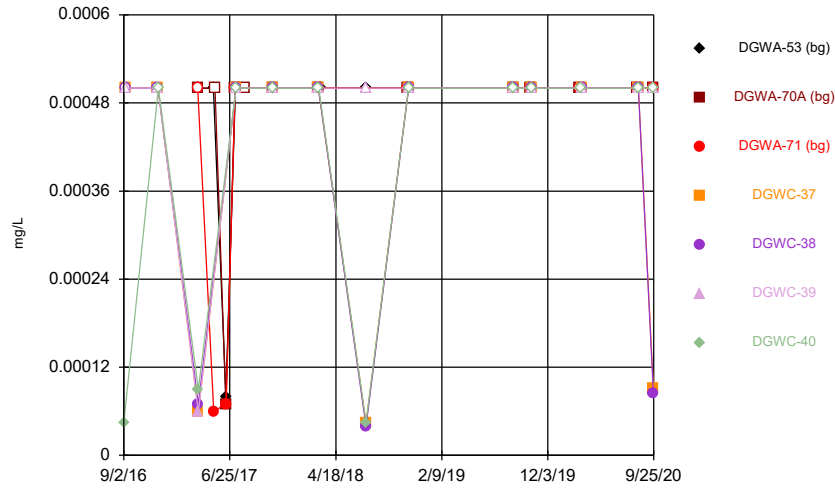
Constituent: Lithium Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



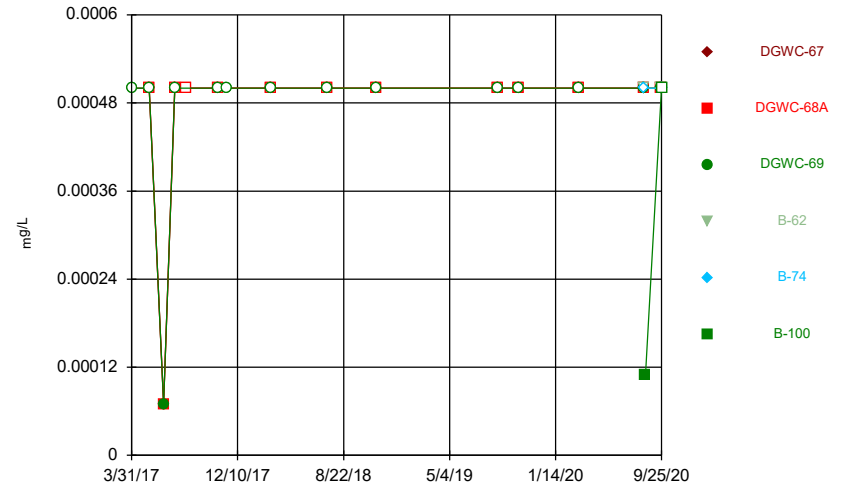
Constituent: Lithium Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



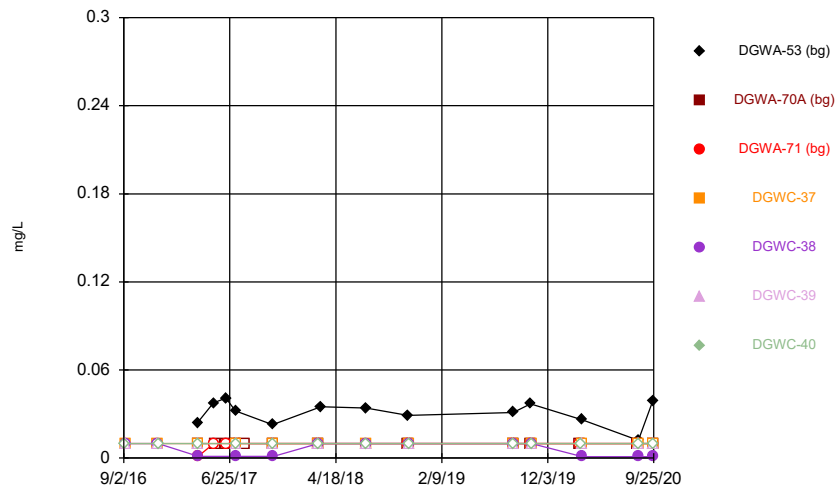
Constituent: Mercury Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



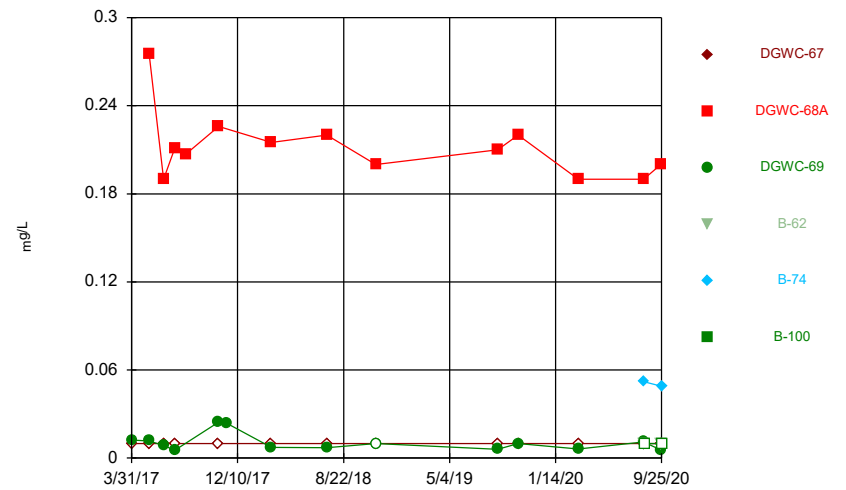
Constituent: Mercury Analysis Run 11/4/2020 3:04 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



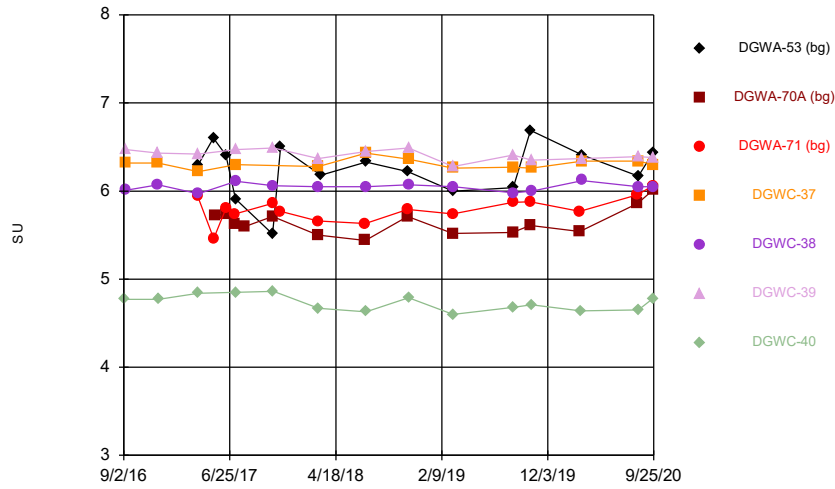
Constituent: Molybdenum Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



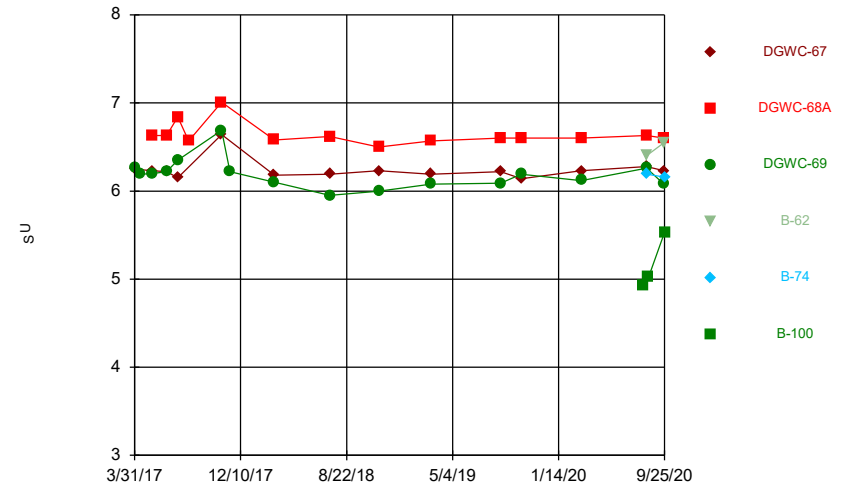
Constituent: Molybdenum Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



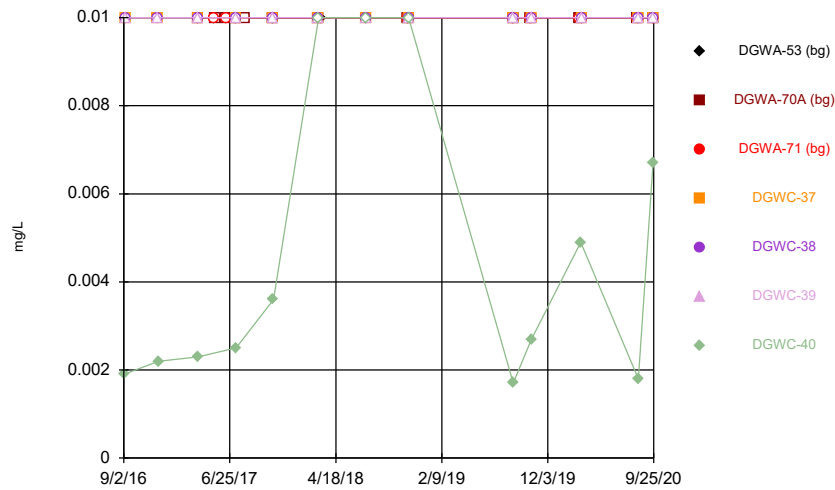
Constituent: pH Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



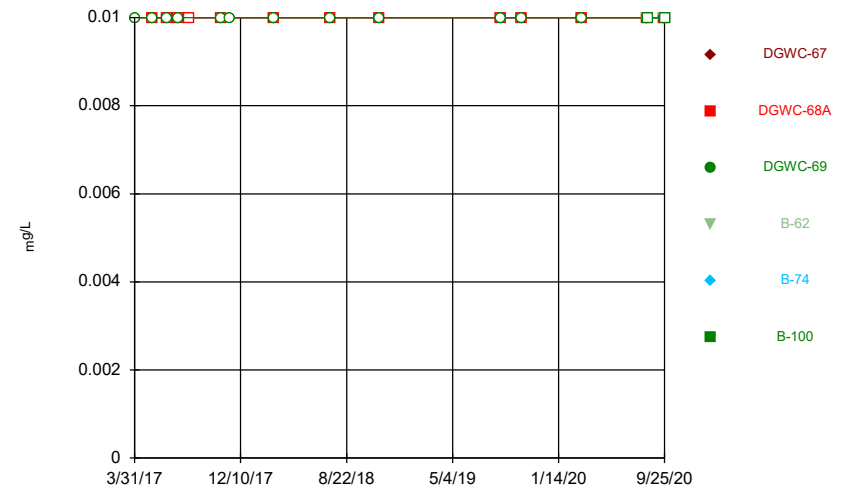
Constituent: pH Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



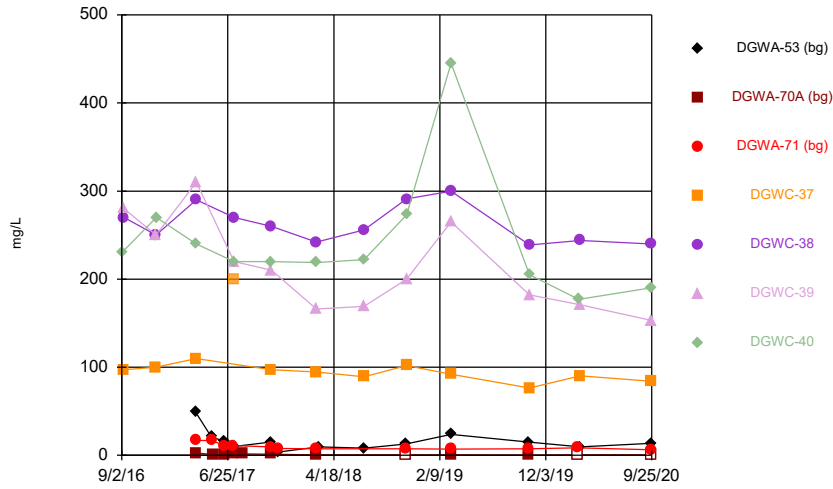
Constituent: Selenium Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



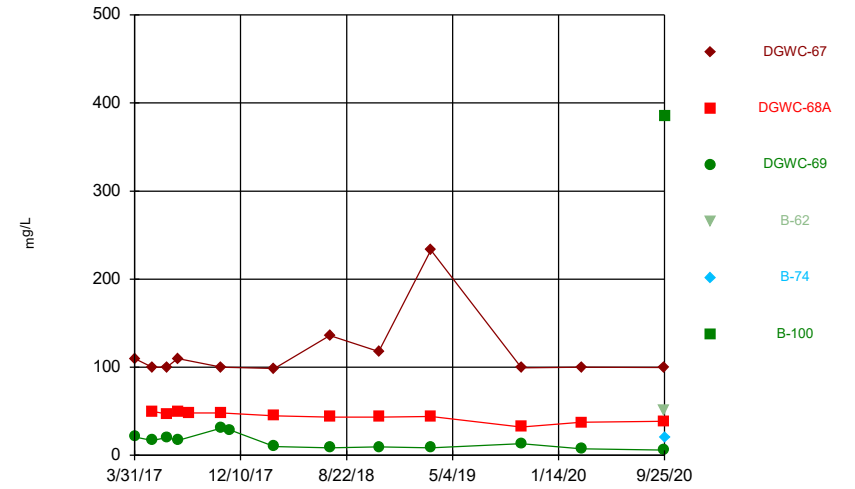
Constituent: Selenium Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



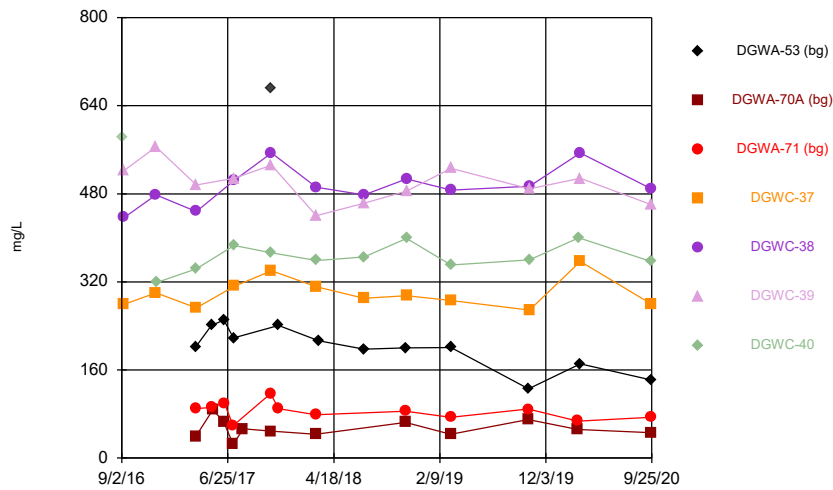
Constituent: Sulfate Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



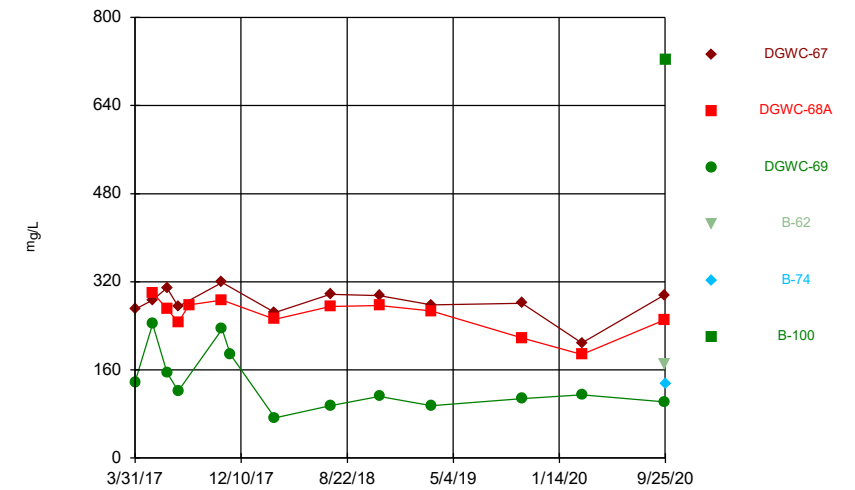
Constituent: Sulfate Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



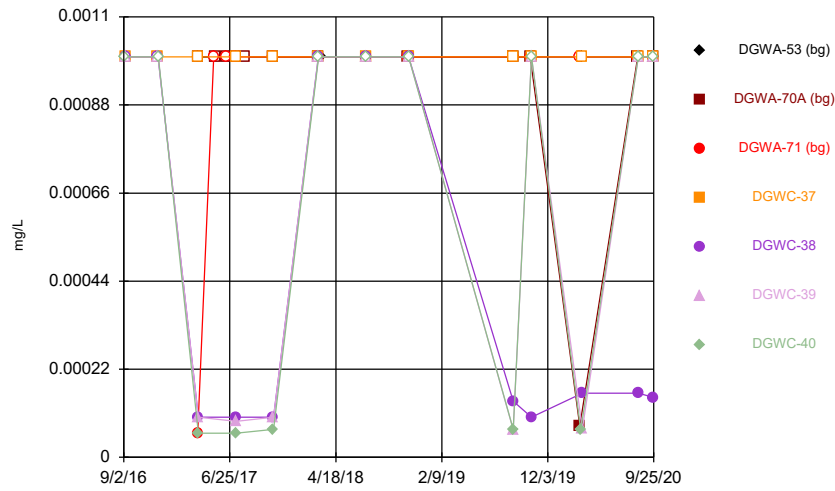
Constituent: TDS Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



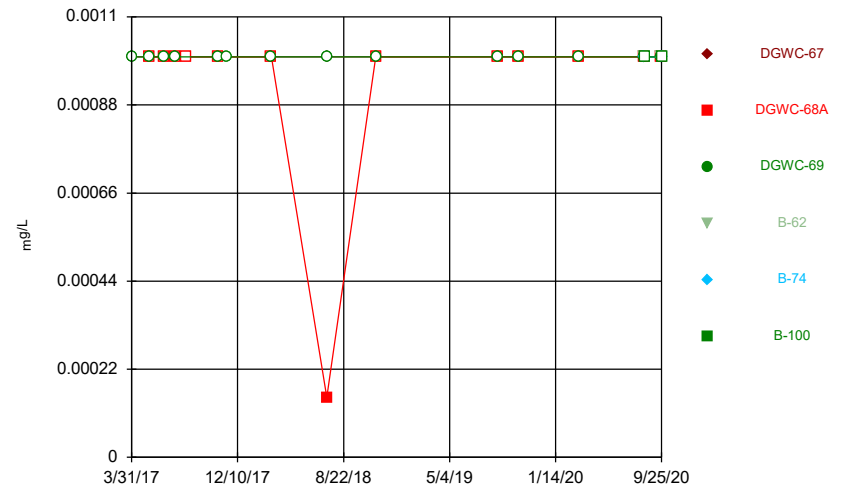
Constituent: TDS Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



Constituent: Thallium Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



Constituent: Thallium Analysis Run 11/4/2020 3:05 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series

Constituent: Antimony (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							<0.003		
9/8/2016				<0.003	<0.003	<0.003			
12/7/2016				<0.003	<0.003	<0.003			
12/8/2016							<0.003		
3/28/2017	<0.003	<0.003	0.0007 (J)						
3/30/2017				<0.003	<0.003	<0.003	<0.003		
3/31/2017								0.0004 (J)	
5/11/2017	<0.003								
5/12/2017			<0.003					<0.003	<0.003
5/15/2017		<0.003							
6/15/2017	0.0006 (J)	<0.003							
6/16/2017			0.0007 (J)					0.0008 (J)	0.0008 (J)
7/11/2017		<0.003	<0.003						
7/12/2017	<0.003								
7/13/2017				<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
8/8/2017		<0.003							<0.003
10/24/2017	<0.003	<0.003	<0.003						
10/26/2017				<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
2/27/2018		<0.003	<0.003						
3/1/2018				<0.003	<0.003	<0.003			
3/2/2018							<0.003	<0.003	<0.003
3/8/2018	<0.003								
7/12/2018	<0.003			<0.003	<0.003	<0.003	<0.003		
7/13/2018								0.0023 (J)	<0.003
11/6/2018		<0.003	<0.003						
11/7/2018	<0.003								
11/8/2018				<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
8/27/2019		<0.003	<0.003						
8/28/2019	<0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/15/2019		<0.003	<0.003						
10/16/2019	<0.003								
3/2/2020		<0.003	0.0018 (J)						
3/4/2020							<0.003		
3/9/2020	<0.003			<0.003	<0.003	<0.003		<0.003	<0.003
8/11/2020		0.0013 (J)	0.0018 (J)						
8/13/2020	0.0003 (J)			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
9/22/2020	<0.003	<0.003	<0.003						
9/23/2020							<0.003	<0.003	<0.003
9/24/2020				<0.003	<0.003				
9/25/2020						<0.003			

Time Series

Constituent: Antimony (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	<0.003			
5/12/2017	<0.003			
6/16/2017	0.0007 (J)			
7/13/2017	<0.003			
10/26/2017	<0.003			
11/15/2017	<0.003			
3/2/2018	<0.003			
7/13/2018	<0.003			
11/8/2018	<0.003			
8/28/2019	<0.003			
3/9/2020	<0.003			
8/13/2020	0.0019 (J)	<0.003		
8/14/2020			<0.003	
8/17/2020				0.0013 (J)
9/23/2020	<0.003			
9/24/2020		0.00046 (J)		
9/25/2020			<0.003	<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							<0.005		
9/8/2016				<0.005	<0.005	<0.005			
12/7/2016				0.0019 (J)	<0.005	<0.005			
12/8/2016							<0.005		
3/28/2017	0.0005 (J)	<0.005	<0.005						
3/30/2017				<0.005	<0.005	0.0007 (J)	0.0006 (J)		
3/31/2017								<0.005	
5/11/2017	0.0005 (J)								
5/12/2017			0.0004 (J)					<0.005	<0.005
5/15/2017		<0.005							
6/15/2017	<0.005	<0.005							
6/16/2017			<0.005					<0.005	<0.005
7/11/2017		<0.005	<0.005						
7/12/2017	<0.005								
7/13/2017				<0.005	0.0005 (J)	0.0009 (J)	<0.005	<0.005	<0.005
8/8/2017		<0.005							<0.005
10/24/2017	<0.005	<0.005	<0.005						
10/26/2017				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2/27/2018		<0.005	<0.005						
3/1/2018				<0.005	<0.005	0.0011 (J)			
3/2/2018							0.0011 (J)	<0.005	<0.005
3/8/2018	<0.005								
7/12/2018	<0.005			<0.005	<0.005	0.00057 (J)	<0.005		
7/13/2018								<0.005	<0.005
11/6/2018		<0.005	<0.005						
11/7/2018	<0.005 (J)								
11/8/2018				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005 (J)
8/27/2019		<0.005	<0.005						
8/28/2019	<0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10/15/2019		0.00052 (J)	0.00071 (J)						
10/16/2019	0.0018 (J)								<0.005
10/17/2019								0.00042 (J)	
10/18/2019				<0.005	<0.005	0.00075 (J)	<0.005		
3/2/2020		<0.005	<0.005						
3/4/2020							0.00065 (J)		
3/9/2020	0.00068 (J)			<0.005	<0.005	0.00039 (J)		<0.005	<0.005
8/11/2020		<0.005	<0.005						
8/13/2020	<0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9/22/2020	0.00093 (J)	<0.005	<0.005						
9/23/2020							<0.005	<0.005	<0.005
9/24/2020				<0.005	<0.005				
9/25/2020						0.00087 (J)			

Time Series

Constituent: Arsenic (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.0239			
4/12/2017	0.0077			
5/12/2017	0.0097			
6/16/2017	0.0113			
7/13/2017	0.0029 (J)			
10/26/2017	0.114			
11/15/2017	0.164			
3/2/2018	0.0127			
7/13/2018	0.017			
11/8/2018	0.02			
8/28/2019	0.025			
10/16/2019	0.023			
3/9/2020	0.029			
7/23/2020				<0.005
8/13/2020	0.029	<0.005		
8/14/2020			0.01	
8/17/2020				<0.005
9/23/2020	0.032			
9/24/2020		<0.005		
9/25/2020			0.012	<0.005

Time Series

Constituent: Barium (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.0171		
9/8/2016				0.123	0.0333	0.0978			
12/7/2016				0.125	0.0336	0.0844			
12/8/2016							0.0163		
3/28/2017	0.134	0.0166	0.0378						
3/30/2017				0.11	0.0325	0.0858	0.0177		
3/31/2017								0.111	
5/11/2017	0.126								
5/12/2017			0.04					0.127	0.089
5/15/2017		0.0181							
6/15/2017	0.14	0.0277							
6/16/2017			0.0369					0.11	0.0855
7/11/2017		0.0306	0.0362						
7/12/2017	0.173								
7/13/2017				0.11	0.0332	0.0919	0.017	0.102	0.0859
8/8/2017		0.0277							0.0852
10/24/2017	0.109	0.0333	0.0313						
10/26/2017				0.112	0.0333	0.0899	0.0168	0.105	0.0878
2/27/2018		0.0341	0.0287						
3/1/2018				0.102	0.0333	0.0742			
3/2/2018							0.0169	0.104	0.0878
3/8/2018	0.19								
7/12/2018	0.18			0.11	0.034	0.094	0.018		
7/13/2018								0.11	0.091
11/6/2018		0.037	0.026						
11/7/2018	0.15								
11/8/2018				0.11	0.035	0.1	0.017	0.11	0.092
8/27/2019		0.037	0.027						
8/28/2019	0.087			0.086	0.033	0.099	0.017	0.11	0.089
10/15/2019		0.034	0.024						
10/16/2019	0.077								0.089
10/17/2019								0.1	
10/18/2019				0.079	0.032	0.1	0.019		
3/2/2020		0.035	0.026						
3/4/2020							0.018		
3/9/2020	0.099			0.092	0.032	0.076		0.11	0.088
8/11/2020		0.041	0.026						
8/13/2020	0.046			0.088	0.032	0.089	0.018	0.095	0.088
9/22/2020	0.07	0.038	0.024						
9/23/2020							0.019	0.1	0.094
9/24/2020				0.094	0.032				
9/25/2020						0.1			

Time Series

Constituent: Barium (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.0872			
5/12/2017	0.0929			
6/16/2017	0.1			
7/13/2017	0.0985			
10/26/2017	0.136			
11/15/2017	0.107			
3/2/2018	0.0671			
7/13/2018	0.074			
11/8/2018	0.072			
8/28/2019	0.061			
10/16/2019	0.1			
3/9/2020	0.057			
8/13/2020	0.13	0.026		
8/14/2020			0.077	
8/17/2020				0.015
9/23/2020	0.055			
9/24/2020		0.025		
9/25/2020			0.066	0.022

Time Series

Constituent: Beryllium (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.0028 (J)		
9/8/2016				<0.003	<0.003	<0.003			
12/7/2016				<0.003	<0.003	<0.003			
12/8/2016							0.0026 (J)		
3/28/2017	<0.003	<0.003	9E-05 (J)						
3/30/2017				<0.003	<0.003	<0.003	0.003		
3/31/2017								<0.003	
5/11/2017	<0.003								
5/12/2017			<0.003					<0.003	<0.003
5/15/2017		<0.003							
6/15/2017	<0.003	<0.003							
6/16/2017			0.0001 (J)					<0.003	<0.003
7/11/2017		<0.003	<0.003						
7/12/2017	<0.003								
7/13/2017				<0.003	<0.003	<0.003	0.003 (J)	<0.003	<0.003
8/8/2017		<0.003							<0.003
10/24/2017	<0.003	<0.003	<0.003						
10/26/2017				<0.003	<0.003	<0.003	0.0027 (J)	<0.003	<0.003
2/27/2018		<0.003	<0.003						
3/1/2018				<0.003	<0.003	<0.003			
3/2/2018							0.0033	<0.003	<0.003
3/8/2018	<0.003								
7/12/2018	<0.003			7E-05 (J)	<0.003	<0.003	0.0032		
7/13/2018								<0.003	8.4E-05 (J)
11/6/2018		<0.003 (J)	<0.003 (J)						
11/7/2018	<0.003								
11/8/2018				<0.003	<0.003	<0.003	<0.003 (J)	<0.003	<0.003
8/27/2019		7.9E-05 (J)	<0.003						
8/28/2019	<0.003			8.6E-05 (J)	<0.003	<0.003	0.0032	<0.003	<0.003
10/15/2019		<0.003	8.8E-05 (J)						
10/16/2019	<0.003								<0.003
10/17/2019								<0.003	
10/18/2019				<0.003	<0.003	<0.003	0.0033		
3/2/2020		9.6E-05 (J)	0.0001 (J)						
3/4/2020							0.0039		
3/9/2020	<0.003			<0.003	<0.003	<0.003		<0.003	<0.003
8/11/2020		0.00013 (J)	0.00011 (J)						
8/13/2020	<0.003			0.0001 (J)	<0.003	<0.003	0.0033	<0.003	<0.003
9/22/2020	<0.003	6.8E-05 (J)	6.9E-05 (J)						
9/23/2020							0.0031	<0.003	<0.003
9/24/2020				8.8E-05 (J)	5.8E-05 (J)				
9/25/2020						<0.003			

Time Series

Constituent: Beryllium (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	7E-05 (J)			
5/12/2017	<0.003			
6/16/2017	<0.003			
7/13/2017	<0.003			
10/26/2017	<0.003			
11/15/2017	<0.003			
3/2/2018	<0.003			
7/13/2018	5.8E-05 (J)			
11/8/2018	<0.003			
8/28/2019	<0.003			
10/16/2019	<0.003			
3/9/2020	7.5E-05 (J)			
8/13/2020	6.3E-05 (J)	0.00011 (J)		
8/14/2020			7.6E-05 (J)	
8/17/2020				0.0004 (J)
9/23/2020	6.1E-05 (J)			
9/24/2020		0.00013 (J)		
9/25/2020			9.7E-05 (J)	0.00035 (J)

Time Series

Constituent: Boron (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.895		
9/8/2016				1.58	2.69	3.35			
12/7/2016				2.01	3.08	3.63			
12/8/2016							0.841		
3/28/2017	0.0612	0.0067 (J)	0.0097 (J)						
3/30/2017				1.47	3.19	3.57	0.937		
3/31/2017								2.91	
5/11/2017	0.0805								
5/12/2017			0.0082 (J)					3.24	1.8
5/15/2017		0.0073 (J)							
6/15/2017	0.0725	<0.1							
6/16/2017			0.0085 (J)					3.42	1.88
7/11/2017		<0.1	0.0077 (J)						
7/12/2017	0.0735								
7/13/2017				2.1	3.09	3.41	0.933	3.46	1.97
8/8/2017		<0.1							2.1
10/24/2017	0.077	0.0082 (J)	0.0083 (J)						
10/26/2017				1.86	2.92	3.41	0.873	3.21	2.05
2/27/2018		0.0062 (J)	0.0069 (J)						
3/1/2018				1.87	3.08	2.86			
3/2/2018							0.974	3.49	2.05
3/8/2018	0.13 (J)								
7/12/2018	0.076			1.5	2.8	3	0.92		
7/13/2018								3.1	1.7
11/6/2018		<0.04 (J)	<0.04 (J)						
11/7/2018	0.073								
11/8/2018				1.4	3.4	3.4	0.8	3.5	1.8
3/12/2019		0.0073 (J)	0.0068 (J)						
3/13/2019	0.08			1.8	2.9	3.4	0.8	3.5	1.9
10/15/2019		<0.1	0.0054 (J)						
10/16/2019	0.059								1.5
10/17/2019								3.6	
10/18/2019				1.3	3.1	3.6	0.9		
3/2/2020		0.0055 (J)	0.01 (J)						
3/4/2020							0.86		
3/9/2020	0.08 (J)			1.8	3	2.9		3.6	1.8
9/22/2020	0.056 (J)	<0.1	<0.1						
9/23/2020							0.76	3.2	1.7
9/24/2020				1.6	2.9				
9/25/2020						3.3			

Time Series

Constituent: Boron (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.407			
4/12/2017	0.207			
5/12/2017	0.311			
6/16/2017	0.381			
7/13/2017	0.323			
10/26/2017	0.779			
11/15/2017	0.667			
3/2/2018	0.0478			
7/13/2018	0.043			
11/8/2018	0.054			
3/13/2019	0.028 (J)			
10/16/2019	0.38			
3/9/2020	0.035 (J)			
9/23/2020	0.041 (J)			
9/24/2020		0.074 (J)		
9/25/2020			0.3	0.27

Time Series

Constituent: Cadmium (mg/L) Analysis Run 11/4/2020 3:07 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.0008 (J)		
9/8/2016				0.0002 (J)	0.0002 (J)	<0.0025			
12/7/2016				0.0001 (J)	0.0002 (J)	<0.0025			
12/8/2016							0.0007 (J)		
3/28/2017	<0.0025	<0.0025	<0.0025						
3/30/2017				0.0001 (J)	0.0002 (J)	<0.0025	0.0007 (J)		
3/31/2017								<0.0025	
5/11/2017	8E-05 (J)								
5/12/2017			<0.0025					<0.0025	8E-05 (J)
5/15/2017		<0.0025							
6/15/2017	<0.0025	<0.0025							
6/16/2017			<0.0025					<0.0025	<0.0025
7/11/2017		<0.0025	<0.0025						
7/12/2017	<0.0025								
7/13/2017				<0.0025	0.0002 (J)	<0.0025	0.0008 (J)	<0.0025	<0.0025
8/8/2017		<0.0025							<0.0025
10/24/2017	<0.0025	<0.0025	<0.0025						
10/26/2017				<0.0025	0.0002 (J)	<0.0025	0.0008 (J)	<0.0025	<0.0025
2/27/2018		<0.0025	<0.0025						
3/1/2018				<0.0025	<0.0025	<0.0025			
3/2/2018							<0.0025	<0.0025	<0.0025
3/8/2018	<0.0025								
7/12/2018	0.00013 (J)			<0.0025	0.00024 (J)	<0.0025	0.00087 (J)		
7/13/2018								<0.0025	0.00019 (J)
11/6/2018		<0.0025	<0.0025						
11/7/2018	<0.0025								
11/8/2018				<0.0025	<0.001 (J)	<0.0025	<0.001 (J)	<0.0025	<0.001 (J)
8/27/2019		<0.0025	<0.0025						
8/28/2019	<0.0025			<0.0025	0.0003 (J)	<0.0025	0.00087 (J)	0.00017 (J)	0.00017 (J)
10/15/2019		<0.0025	<0.0025						
10/16/2019	<0.0025								0.00017 (J)
10/17/2019								<0.0025	
10/18/2019				<0.0025	0.00016 (J)	<0.0025	0.00088 (J)		
3/2/2020		0.00041 (J)	<0.0025						
3/4/2020							0.00093 (J)		
3/9/2020	<0.0025			<0.0025	0.00017 (J)	<0.0025		0.00021 (J)	0.00026 (J)
8/11/2020		<0.0025	<0.0025						
8/13/2020	<0.0025			<0.0025	0.00021 (J)	<0.0025	0.00084 (J)	0.00015 (J)	0.00021 (J)
9/22/2020	<0.0025	<0.0025	<0.0025						
9/23/2020							0.0008 (J)	0.00018 (J)	0.00024 (J)
9/24/2020				0.00027 (J)	0.00081 (J)				
9/25/2020						<0.0025			

Time Series

Constituent: Cadmium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.0001 (J)			
5/12/2017	0.0002 (J)			
6/16/2017	0.0002 (J)			
7/13/2017	<0.0025			
10/26/2017	<0.0025			
11/15/2017	<0.0025			
3/2/2018	<0.0025			
7/13/2018	<0.0025			
11/8/2018	<0.0025			
8/28/2019	<0.0025			
10/16/2019	0.00017 (J)			
3/9/2020	<0.0025			
8/13/2020	<0.0025	<0.0025		
8/14/2020			0.00026 (J)	
8/17/2020				0.00059 (J)
9/23/2020	<0.0025			
9/24/2020		<0.0025		
9/25/2020			0.00017 (J)	0.00027 (J)

Time Series

Constituent: Calcium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							39.6		
9/8/2016				52.5	70.3	87.2			
12/7/2016				29.7	38.4	96.7			
12/8/2016							37.9		
3/28/2017	30.8	5.14	8.31						
3/30/2017				62.6	80.3	98.9	43.9		
3/31/2017								39.9	
5/11/2017	35.8								
5/12/2017			8.04					43.6	51.7
5/15/2017		6.5							
6/15/2017	36	5.38							
6/16/2017			7.66					42.5	47.9
7/11/2017		5.96	7.71						
7/12/2017	40.3								
7/13/2017				64.1	90.8	95	46.2	43.7	52.3
8/8/2017		5.2							46.3
10/24/2017	30.3	4.93	6.86						
10/26/2017				60.8	81.3	90.6	41.8	40.4	48.2
2/27/2018		<25	<25						
3/1/2018				57	81.8	79.6			
3/2/2018							43.2	40.1	48.9
3/8/2018	39.8								
7/12/2018	34.7			59.1	86.7	89.8	47.1		
7/13/2018								43.3	52.4
11/6/2018		5.5	5.7						
11/7/2018	28.6								
11/8/2018				53.6	86.6	89	43.5	40.1	46.8
3/12/2019		5.1	5.5						
3/13/2019	26.7			54.8	85.3	96.3	41	41.2	47.5
10/15/2019		5.1	5.1						
10/16/2019	17.7								49.7
10/17/2019								46.9	
10/18/2019				52.5	97.8	108	44.9		
3/2/2020		5.3	5.8						
3/4/2020							49.6		
3/9/2020	23.7			64.2	91.9	100		46.9	54
9/22/2020	15.5	5	5.4						
9/23/2020							41.9	42	50.2
9/24/2020				55.9	84.1				
9/25/2020						92.5			

Time Series

Constituent: Calcium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	18.6 (J)			
5/12/2017	18.9 (J)			
6/16/2017	17.7			
7/13/2017	17.6			
10/26/2017	33.3			
11/15/2017	30.6			
3/2/2018	8.09			
7/13/2018	7.9			
11/8/2018	8.5			
3/13/2019	7.6			
10/16/2019	16.2			
3/9/2020	8.6			
9/23/2020	8			
9/24/2020		28.8		
9/25/2020			18.6	44.7

Time Series

Constituent: Chloride (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							20		
9/8/2016				6.2	7.4	9.2			
12/7/2016				6.1	7.4	8.9			
12/8/2016							18		
3/28/2017	3.7	3.8	3.6						
3/30/2017				6.3	7.7	8.7	20		
3/31/2017								5.7	
5/11/2017	2.3								
5/12/2017			3.8					5.6	4.2
5/15/2017		2.2							
6/15/2017	2.6	2							
6/16/2017			3.4					5.5	4.2
7/11/2017		2.1	3.1						
7/12/2017	2.3								
7/13/2017				6.5	7.5	8.4	21	5.2	4.4
8/8/2017		2.2							4.2
10/24/2017	2.7	2.4	3.2						
10/26/2017				6.4	8.2	8.3	21	6	4.4
11/15/2017	2.2		3.1						
2/27/2018		2.5	3.2						
3/1/2018				6.3	8.1	8.1			
3/2/2018							19.5	5.8	4.2
3/8/2018	2.4								
7/12/2018	2.2			5.8	8	7.7	19.9		
7/13/2018								5.9	4
11/6/2018		2.3	2.6						
11/7/2018	2.3								
11/8/2018				5.8	8.1	7.7	19.3	6.1	<0.25
3/12/2019		2.5	3.3						
3/13/2019	3.6			6.9	9.1	8.2	19.7	6.8	4.6
10/15/2019		2.2	3.3						
10/16/2019	2								4.2
10/17/2019								6.9	
10/18/2019				5.8	8.6	8	19.2		
3/2/2020		1.9	3						
3/4/2020							20.6		
3/9/2020	1.8			6	8.1	7.5		6.7	3.6
9/22/2020	1.6	1.9	5.2						
9/23/2020							19.7	7.1	3.6
9/24/2020				5.6	8.2				
9/25/2020						7.9			

Time Series

Constituent: Chloride (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	4.4			
5/12/2017	4.4			
6/16/2017	4.7			
7/13/2017	4.7			
10/26/2017	4.2			
11/15/2017	4.7			
3/2/2018	6.4			
7/13/2018	5.3			
11/8/2018	5.9			
3/13/2019	6.2			
10/16/2019	4.7			
3/9/2020	5.7			
9/23/2020	4.7			
9/24/2020		5.7		
9/25/2020			6	13.2

Time Series

Constituent: Chromium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							<0.01		
9/8/2016				<0.01	<0.01	<0.01			
12/7/2016				<0.01	<0.01	<0.01			
12/8/2016							<0.01		
3/28/2017	<0.01	0.0008 (J)	0.0023 (J)						
3/30/2017				<0.01	<0.01	<0.01	0.0007 (J)		
3/31/2017								0.0005 (J)	
5/11/2017	<0.01								
5/12/2017			0.0004 (J)					0.0007 (J)	<0.01
5/15/2017		0.0006 (J)							
6/15/2017	<0.01	0.0006 (J)							
6/16/2017			0.0005 (J)					<0.01	<0.01
7/11/2017		0.0005 (J)	<0.01						
7/12/2017	<0.01								
7/13/2017				<0.01	<0.01	<0.01	0.0006 (J)	<0.01	0.0005 (J)
8/8/2017		0.0005 (J)							<0.01
10/24/2017	<0.01	0.0005 (J)	<0.01						
10/26/2017				0.0007 (J)	0.0005 (J)	<0.01	0.0007 (J)	<0.01	<0.01
2/27/2018		<0.01	<0.01						
3/1/2018				<0.01	<0.01	<0.01			
3/2/2018							<0.01	<0.01	<0.01
3/8/2018	<0.01								
7/12/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
7/13/2018								<0.01	<0.01
11/6/2018		<0.01	<0.01						
11/7/2018	<0.01								
11/8/2018				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
8/27/2019		0.00071 (J)	0.0018 (J)						
8/28/2019	<0.01			<0.01	<0.01	<0.01	0.00061 (J)	<0.01	<0.01
10/15/2019		0.034 (O)	0.0025 (J)						
10/16/2019	<0.01								<0.01
10/17/2019								<0.01	
10/18/2019				<0.01	0.00092 (J)	<0.01	0.00078 (J)		
3/2/2020		0.0013 (J)	0.00045 (J)						
3/4/2020							0.0011 (J)		
3/9/2020	<0.01			<0.01	0.00044 (J)	<0.01		0.00088 (J)	<0.01
8/11/2020		0.0016 (J)	0.0006 (J)						
8/13/2020	<0.01			0.00058 (J)	<0.01	<0.01	0.00072 (J)	<0.01	<0.01
9/22/2020	<0.01	0.00089 (J)	<0.01						
9/23/2020							0.0011 (J)	<0.01	<0.01
9/24/2020				<0.01	<0.01				
9/25/2020						<0.01			

Time Series

Constituent: Chromium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	<0.01			
5/12/2017	<0.01			
6/16/2017	<0.01			
7/13/2017	<0.01			
10/26/2017	<0.01			
11/15/2017	<0.01			
3/2/2018	<0.01			
7/13/2018	<0.01			
11/8/2018	<0.01			
8/28/2019	0.00049 (J)			
10/16/2019	<0.01			
3/9/2020	0.0012 (J)			
8/13/2020	<0.01	<0.01		
8/14/2020			<0.01	
8/17/2020				<0.01
9/23/2020	0.0011 (J)			
9/24/2020		<0.01		
9/25/2020			<0.01	0.00094 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.0382		
9/8/2016				<0.005	0.0015 (J)	0.0068 (J)			
12/7/2016				0.0005 (J)	0.0017 (J)	0.0071 (J)			
12/8/2016							0.0318		
3/28/2017	0.025	0.0034 (J)	0.0033 (J)						
3/30/2017				<0.005	0.0016 (J)	0.006 (J)	0.0364		
3/31/2017								0.0064 (J)	
5/11/2017	0.0281								
5/12/2017			0.0016 (J)					0.0037 (J)	0.0015 (J)
5/15/2017		0.0024 (J)							
6/15/2017	0.0322	0.0014 (J)							
6/16/2017			0.0011 (J)					0.0041 (J)	0.0003 (J)
7/11/2017		0.0007 (J)	0.0008 (J)						
7/12/2017	0.0247								
7/13/2017				0.0003 (J)	0.0016 (J)	0.0063 (J)	0.0394	0.0037 (J)	0.0005 (J)
8/8/2017		0.0007 (J)							<0.005
10/24/2017	0.0267	<0.005	0.0004 (J)						
10/26/2017				0.0003 (J)	0.0016 (J)	0.0062 (J)	0.0371	0.0022 (J)	<0.005
2/27/2018		<0.005	<0.005						
3/1/2018				<0.005	<0.005	<0.005			
3/2/2018							0.0425	<0.005	<0.005
3/8/2018	0.027								
7/12/2018	0.024			<0.005	0.0015 (J)	0.0059 (J)	0.044		
7/13/2018								0.0017 (J)	<0.005
11/6/2018		<0.005	<0.005						
11/7/2018	0.018								
11/8/2018				<0.005	<0.01 (J)	<0.01 (J)	0.036	<0.01 (J)	<0.005
8/27/2019		<0.005	<0.005						
8/28/2019	0.013			<0.005	0.0016 (J)	0.0067	0.044	0.0013 (J)	<0.005
10/15/2019		0.00064 (J)	<0.005						
10/16/2019	0.009								<0.005
10/17/2019								0.0013 (J)	
10/18/2019				<0.005	0.0016 (J)	0.007	0.043		
3/2/2020		0.00037 (J)	<0.005						
3/4/2020							0.055		
3/9/2020	0.016			<0.005	0.0016 (J)	0.007		0.0015 (J)	<0.005
8/11/2020		0.0012 (J)	<0.005						
8/13/2020	0.0051			<0.005	0.0014 (J)	0.006	0.044	0.0015 (J)	<0.005
9/22/2020	0.011	<0.005	<0.005						
9/23/2020							0.046	0.0011 (J)	<0.005
9/24/2020				<0.005	0.0013 (J)				
9/25/2020						0.0061			

Time Series

Constituent: Cobalt (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.0022 (J)			
5/12/2017	0.0016 (J)			
6/16/2017	0.0009 (J)			
7/13/2017	0.0004 (J)			
10/26/2017	0.0031 (J)			
11/15/2017	0.0028 (J)			
3/2/2018	<0.005			
7/13/2018	<0.005			
11/8/2018	<0.005			
8/28/2019	<0.005			
10/16/2019	<0.005			
3/9/2020	<0.005			
7/23/2020				0.086
8/3/2020				0.087
8/13/2020	<0.005	<0.005		
8/14/2020			0.0023 (J)	
8/17/2020				0.077
9/23/2020	<0.005			
9/24/2020		<0.005		
9/25/2020			0.0028 (J)	0.034

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							1.44		
9/8/2016				0.827 (U)	1.48	1.44			
12/7/2016				0.56 (U)	0.22 (U)	2.16			
12/8/2016							2.56		
3/28/2017	6.36	0.866 (U)	0.257 (U)						
3/30/2017				0.302 (U)	0.519 (U)	0.264 (U)	0.0844 (U)		
3/31/2017								0.404 (U)	
5/11/2017	3.45								
5/12/2017			0.165 (U)					0.206 (U)	1.18
5/15/2017		0.288 (U)							
6/15/2017	4.58	1.01 (U)							
6/16/2017			0.732 (U)					0.966 (U)	0.332 (U)
7/11/2017		0.254 (U)	0.461 (U)						
7/12/2017	4.37								
7/13/2017				0.731 (U)	1.11	0.517 (U)	0.963 (U)	0.387 (U)	0.304 (U)
8/8/2017		1.48							1.4
10/24/2017	4.46	0.472 (U)	0.724 (U)						
10/26/2017				1.04 (U)	1.13 (U)	0.875 (U)	0.748 (U)	0.619 (U)	0.477 (U)
2/27/2018		1.22	0.714 (U)						
3/1/2018				0.344 (U)	0.985 (U)	1.24			
3/2/2018							0.485 (U)	1.31	1.13
3/8/2018	2.14								
7/10/2018		0.362 (U)	0.426 (U)						
7/12/2018	4.65			0.566 (U)	0.615 (U)	0.935 (U)	0.231 (U)		
7/13/2018								0.667 (U)	0.407 (U)
11/6/2018		0.859 (U)	0.455 (U)						
11/7/2018	3.05								
11/8/2018				0.623 (U)	0.58 (U)	1.15 (U)	0.465 (U)	0.911 (U)	0.393 (U)
8/27/2019		1.97	1.3 (U)						
8/28/2019	2.68			1.24 (U)	0.517 (U)	1.15 (U)	0.592 (U)	0.751 (U)	1.77
10/15/2019		0.319 (U)	1.21 (U)						
10/16/2019	1.89								2.12
1/6/2020				2.01	0.527 (U)	1.4	1.6	0.965 (U)	
3/2/2020		0.419 (U)	1.3						
3/4/2020							1.62		
3/9/2020	3.51			0.499 (U)	1.04	1.36		0.819 (U)	1.33
8/11/2020		0.812 (U)	0.965 (U)						
8/13/2020	1.04			0.99	0.132 (U)	0.626 (U)	1.6	0.897 (U)	1.46
9/22/2020	2.27	0.45 (U)	0.216 (U)						
9/23/2020							1.28 (U)	0.131 (U)	0.563 (U)
9/24/2020				1.03 (U)	0.593 (U)				
9/25/2020						0.181 (U)			

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	1.39			
5/12/2017	1.29			
6/16/2017	1.61			
7/13/2017	1.14			
10/26/2017	2.04			
11/15/2017	1.99			
3/2/2018	0.918 (U)			
7/13/2018	1.36 (U)			
11/8/2018	0.719 (U)			
8/28/2019	1.38			
10/16/2019	0.826 (U)			
3/9/2020	1.39			
8/13/2020	2.66	1.63		
8/14/2020			1.67	
8/17/2020				1.4 (U)
9/23/2020	1.8			
9/24/2020		1.28 (U)		
9/25/2020			1.29 (U)	0.799 (U)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.5		
9/8/2016				0.08 (J)	0.1 (J)	0.17 (J)			
12/7/2016				0.21 (J)	0.27 (J)	0.33			
12/8/2016							0.35		
3/28/2017	0.12 (J)	1.2 (o)	0.06 (J)						
3/30/2017				0.05 (J)	0.12 (J)	0.17 (J)	0.21 (J)		
3/31/2017								0.02 (J)	
5/11/2017	0.07 (J)								
5/12/2017			<0.1					<0.1	0.37
5/15/2017		0.005 (J)							
6/15/2017	0.19 (J)	0.02 (J)							
6/16/2017			0.008 (J)					0.03 (J)	0.12 (J)
7/11/2017		0.06 (J)	0.007 (J)						
7/12/2017	0.1 (J)								
7/13/2017				0.06 (J)	0.13 (J)	0.14 (J)	0.2 (J)	0.03 (J)	0.12 (J)
8/8/2017		0.04 (J)							0.11 (J)
10/24/2017	0.06 (J)	<0.1	<0.1						
10/26/2017				0.08 (J)	0.47	0.54	0.5	<0.1	0.11 (J)
11/15/2017	0.05 (J)		<0.1						
2/27/2018		<0.1	<0.1						
3/1/2018				0.22	<0.1	0.13			
3/2/2018							0.33	<0.1	0.23
3/8/2018	<0.1								
7/12/2018	0.071 (J)			0.32	0.23 (J)	0.13 (J)	0.57		
7/13/2018								0.25 (J)	0.099 (J)
11/6/2018		<0.1	<0.1						
11/7/2018	<0.1								
11/8/2018				<0.1	<0.1	<0.3 (J)	<0.3 (J)	0.5	<0.3 (J)
3/12/2019		0.039 (J)	<0.1						
3/13/2019	0.13 (J)			0.08 (J)	0.084 (J)	0.085 (J)	0.15 (J)	0.07 (J)	0.12 (J)
8/27/2019		<0.1	<0.1						
8/28/2019	0.42			0.074 (J)	0.066 (J)	0.086 (J)	0.14	<0.1	0.1
10/15/2019		<0.1	<0.1						
10/16/2019	0.11 (J)								0.093 (J)
10/17/2019								0.038 (J)	
10/18/2019				0.075 (J)	0.073 (J)	0.14 (J)	0.13 (J)		
3/2/2020		<0.1	<0.1						
3/4/2020							0.11 (J)		
3/9/2020	0.1 (J)			0.054 (J)	0.064 (J)	0.075 (J)		<0.1	0.082 (J)
8/11/2020		<0.1	<0.1						
8/13/2020	0.062 (J)			0.068 (J)	0.06 (J)	0.076 (J)	0.16	<0.1	0.076 (J)
9/22/2020	0.099 (J)	<0.1	<0.1						
9/23/2020							0.054 (J)	<0.1	0.07 (J)
9/24/2020				0.061 (J)	0.057 (J)				
9/25/2020						0.086 (J)			

Time Series

Constituent: Fluoride (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.16 (J)			
5/12/2017	0.12 (J)			
6/16/2017	0.16 (J)			
7/13/2017	0.13 (J)			
10/26/2017	0.29 (J)			
11/15/2017	0.28 (J)			
3/2/2018	0.18			
7/13/2018	0.19 (J)			
11/8/2018	<0.3 (J)			
3/13/2019	0.086 (J)			
8/28/2019	0.07 (J)			
10/16/2019	0.13 (J)			
3/9/2020	0.068 (J)			
8/13/2020	0.084 (J)	0.11		
8/14/2020			0.16	
8/17/2020				<0.1
9/23/2020	0.064 (J)			
9/24/2020		0.093 (J)		
9/25/2020			0.14	<0.1

Time Series

Constituent: Lead (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							<0.005		
9/8/2016				<0.005	<0.005	<0.005			
12/7/2016				<0.005	<0.005	<0.005			
12/8/2016							<0.005		
3/28/2017	<0.005	9E-05 (J)	<0.005						
3/30/2017				0.0014 (J)	<0.005	<0.005	7E-05 (J)		
3/31/2017								<0.005	
5/11/2017	<0.005								
5/12/2017			8E-05 (J)					9E-05 (J)	<0.005
5/15/2017		0.0001 (J)							
6/15/2017	<0.005	0.0002 (J)							
6/16/2017			<0.005					<0.005	<0.005
7/11/2017		<0.005	<0.005						
7/12/2017	<0.005								
7/13/2017				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
8/8/2017		7E-05 (J)							<0.005
10/24/2017	<0.005	<0.005	<0.005						
10/26/2017				<0.005	0.0001 (J)	<0.005	7E-05 (J)	<0.005	<0.005
2/27/2018		<0.005	<0.005						
3/1/2018				<0.005	<0.005	<0.005			
3/2/2018							<0.005	<0.005	<0.005
3/8/2018	<0.005								
7/12/2018	<0.005			<0.005	<0.005	<0.005	<0.005		
7/13/2018								<0.005	<0.005
11/6/2018		<0.005	<0.005						
11/7/2018	<0.005								
11/8/2018				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
8/27/2019		7.8E-05 (J)	<0.005						
8/28/2019	<0.005			6.1E-05 (J)	<0.005	8E-05 (J)	8.1E-05 (J)	<0.005	<0.005
10/15/2019		<0.005	<0.005						
10/16/2019	<0.005								<0.005
10/17/2019								<0.005	
10/18/2019				<0.005	7.4E-05 (J)	<0.005	0.00015 (J)		
3/2/2020		7.4E-05 (J)	<0.005						
3/4/2020							0.00017 (J)		
3/9/2020	<0.005			<0.005	6.1E-05 (J)	<0.005		4.7E-05 (J)	<0.005
8/11/2020		0.0003 (J)	<0.005						
8/13/2020	<0.005			<0.005	<0.005	<0.005	4.9E-05 (J)	5.6E-05 (J)	<0.005
9/22/2020	<0.005	7.8E-05 (J)	<0.005						
9/23/2020							0.00028 (J)	<0.005	0.00035 (J)
9/24/2020				<0.005	0.00014 (J)				
9/25/2020						0.00022 (J)			

Time Series

Constituent: Lead (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	<0.005			
5/12/2017	0.0001 (J)			
6/16/2017	<0.005			
7/13/2017	<0.005			
10/26/2017	<0.005			
11/15/2017	9E-05 (J)			
3/2/2018	<0.005			
7/13/2018	<0.005			
11/8/2018	<0.005			
8/28/2019	<0.005			
10/16/2019	<0.005			
3/9/2020	9E-05 (J)			
8/13/2020	5.9E-05 (J)	<0.005		
8/14/2020			<0.005	
8/17/2020				8.8E-05 (J)
9/23/2020	0.00017 (J)			
9/24/2020		<0.005		
9/25/2020			4.1E-05 (J)	0.00021 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.0022 (J)		
9/8/2016				<0.03	0.0032 (J)	<0.03			
12/7/2016				<0.03	0.0035 (J)	<0.03			
12/8/2016							<0.03		
3/28/2017	0.0108 (J)	0.0054 (J)	0.0025 (J)						
3/30/2017				0.0029 (J)	0.0035 (J)	<0.03	0.0023 (J)		
3/31/2017								0.0052 (J)	
5/11/2017	0.0087 (J)								
5/12/2017			0.0016 (J)					0.0054 (J)	0.0016 (J)
5/15/2017		0.002 (J)							
6/15/2017	0.0088 (J)	<0.03							
6/16/2017			0.0016 (J)					0.0048 (J)	<0.03
7/11/2017		<0.03	<0.03						
7/12/2017	0.0075 (J)								
7/13/2017				<0.03	0.0032 (J)	<0.03	0.0023 (J)	0.0044 (J)	<0.03
8/8/2017		<0.03							<0.03
10/24/2017	0.0103 (J)	<0.03	<0.03						
10/26/2017				0.0018 (J)	0.0034 (J)	<0.03	0.0021 (J)	0.0043 (J)	<0.03
2/27/2018		<0.03	0.0013 (J)						
3/1/2018				0.0024 (J)	0.0033 (J)	<0.03			
3/2/2018							0.0023 (J)	0.0047 (J)	<0.03
3/8/2018	0.011 (J)								
7/12/2018	0.0084 (J)			0.0028 (J)	0.0034 (J)	<0.03	0.0022 (J)		
7/13/2018								0.0041 (J)	<0.03
11/6/2018		<0.03	<0.03						
11/7/2018	<0.03								
11/8/2018				<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
8/27/2019		<0.03	0.0014 (J)						
8/28/2019	0.0092 (J)			0.0025 (J)	0.0034 (J)	<0.03	0.0022 (J)	0.0046 (J)	<0.03
10/15/2019		<0.03	0.0012 (J)						
10/16/2019	0.0094 (J)								<0.03
10/17/2019								0.0047 (J)	
10/18/2019				0.0026 (J)	0.0032 (J)	<0.03	0.0024 (J)		
3/2/2020		<0.03	0.0011 (J)						
3/4/2020							0.0027 (J)		
3/9/2020	0.0077 (J)			0.0017 (J)	0.0033 (J)	<0.03		0.0048 (J)	<0.03
8/11/2020		0.0019 (J)	0.0015 (J)						
8/13/2020	0.0085 (J)			0.0023 (J)	0.0028 (J)	<0.03	0.0022 (J)	0.0044 (J)	<0.03
9/22/2020	0.0089 (J)	<0.03	0.0012 (J)						
9/23/2020							0.0022 (J)	0.0043 (J)	<0.03
9/24/2020				0.0021 (J)	0.0029 (J)				
9/25/2020						<0.03			

Time Series

Constituent: Lithium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.0031 (J)			
5/12/2017	0.003 (J)			
6/16/2017	0.0031 (J)			
7/13/2017	0.0029 (J)			
10/26/2017	0.0034 (J)			
11/15/2017	0.0034 (J)			
3/2/2018	0.0028 (J)			
7/13/2018	0.0026 (J)			
11/8/2018	<0.03			
8/28/2019	0.0024 (J)			
10/16/2019	0.0032 (J)			
3/9/2020	0.0025 (J)			
8/13/2020	0.0031 (J)	0.0087 (J)		
8/14/2020			0.0011 (J)	
8/17/2020				0.0013 (J)
9/23/2020	0.0023 (J)			
9/24/2020		0.0084 (J)		
9/25/2020			0.0014 (J)	0.0027 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							4.4E-05 (J)		
9/8/2016				<0.0005	<0.0005	<0.0005			
12/7/2016				<0.0005	<0.0005	<0.0005			
12/8/2016							<0.0005		
3/28/2017	<0.0005	<0.0005	<0.0005						
3/30/2017				6E-05 (J)	7E-05 (J)	5.9E-05 (J)	9E-05 (J)		
3/31/2017								<0.0005	
5/11/2017	<0.0005								
5/12/2017			6E-05 (J)					<0.0005	<0.0005
5/15/2017		<0.0005							
6/15/2017	8E-05 (J)	7E-05 (J)							
6/16/2017			7E-05 (J)					7E-05 (J)	7E-05 (J)
7/11/2017		<0.0005	<0.0005						
7/12/2017	<0.0005								
7/13/2017				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8/8/2017		<0.0005							<0.0005
10/24/2017	<0.0005	<0.0005	<0.0005						
10/26/2017				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
2/27/2018		<0.0005	<0.0005						
3/1/2018				<0.0005	<0.0005	<0.0005			
3/2/2018							<0.0005	<0.0005	<0.0005
3/8/2018	<0.0005								
7/12/2018	<0.0005			4.4E-05 (J)	4E-05 (J)	<0.0005	4.5E-05 (J)		
7/13/2018								<0.0005	<0.0005
11/6/2018		<0.0005	<0.0005						
11/7/2018	<0.0005								
11/8/2018				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8/27/2019		<0.0005	<0.0005						
8/28/2019	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10/15/2019		<0.0005	<0.0005						
10/16/2019	<0.0005								<0.0005
10/17/2019								<0.0005	
10/18/2019				<0.0005	<0.0005	<0.0005	<0.0005		
3/2/2020		<0.0005	<0.0005						
3/4/2020							<0.0005		
3/9/2020	<0.0005			<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
8/11/2020		<0.0005	<0.0005						
8/13/2020	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
9/22/2020	<0.0005	<0.0005	<0.0005						
9/23/2020							<0.0005	<0.0005	<0.0005
9/24/2020				9.1E-05 (J)	8.5E-05 (J)				
9/25/2020						<0.0005			

Time Series

Constituent: Mercury (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	<0.0005			
5/12/2017	<0.0005			
6/16/2017	7E-05 (J)			
7/13/2017	<0.0005			
10/26/2017	<0.0005			
11/15/2017	<0.0005			
3/2/2018	<0.0005			
7/13/2018	<0.0005			
11/8/2018	<0.0005			
8/28/2019	<0.0005			
10/16/2019	<0.0005			
3/9/2020	<0.0005			
8/13/2020	<0.0005	<0.0005		
8/14/2020			<0.0005	
8/17/2020				0.00011 (J)
9/23/2020	<0.0005			
9/24/2020		<0.0005		
9/25/2020			<0.0005	<0.0005

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							<0.01		
9/8/2016				<0.01	<0.01	<0.01			
12/7/2016				<0.01	<0.01	<0.01			
12/8/2016							<0.01		
3/28/2017	0.0242	<0.01	0.0009 (J)						
3/30/2017				<0.01	0.0011 (J)	<0.01	<0.01		
3/31/2017								<0.01	
5/11/2017	0.0375								
5/12/2017			<0.01					<0.01	0.275
5/15/2017		<0.01							
6/15/2017	0.0409	<0.01							
6/16/2017			<0.01					<0.01	0.19
7/11/2017		<0.01	<0.01						
7/12/2017	0.0321								
7/13/2017				<0.01	0.0012 (J)	<0.01	<0.01	<0.01	0.211
8/8/2017		<0.01							0.207
10/24/2017	0.0227	<0.01	<0.01						
10/26/2017				<0.01	0.0011 (J)	<0.01	<0.01	<0.01	0.226
2/27/2018		<0.01	<0.01						
3/1/2018				<0.01	<0.01	<0.01			
3/2/2018							<0.01	<0.01	0.215
3/8/2018	0.035								
7/12/2018	0.034			<0.01	<0.01	<0.01	<0.01		
7/13/2018								<0.01	0.22
11/6/2018		<0.01	<0.01						
11/7/2018	0.029								
11/8/2018				<0.01	<0.01	<0.01	<0.01	<0.01	0.2
8/27/2019		<0.01	<0.01						
8/28/2019	0.031			<0.01	<0.01	<0.01	<0.01	<0.01	0.21
10/15/2019		<0.01	<0.01						
10/16/2019	0.037								0.22
10/17/2019								<0.01	
10/18/2019				<0.01	<0.01	<0.01	<0.01		
3/2/2020		<0.01	<0.01						
3/4/2020							<0.01		
3/9/2020	0.026			<0.01	0.001 (J)	<0.01		<0.01	0.19
8/11/2020		<0.01	<0.01						
8/13/2020	0.012			<0.01	0.00098 (J)	<0.01	<0.01	<0.01	0.19
9/22/2020	0.039	<0.01	<0.01						
9/23/2020							<0.01	<0.01	0.2
9/24/2020				<0.01	0.001 (J)				
9/25/2020						<0.01			

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	0.0124			
5/12/2017	0.0117			
6/16/2017	0.0087 (J)			
7/13/2017	0.0053 (J)			
10/26/2017	0.0244			
11/15/2017	0.0237			
3/2/2018	0.0072 (J)			
7/13/2018	0.007 (J)			
11/8/2018	<0.01 (J)			
8/28/2019	0.0059 (J)			
10/16/2019	0.01			
3/9/2020	0.0062 (J)			
8/13/2020	0.011	<0.01		
8/14/2020			0.052	
8/17/2020				<0.01
9/23/2020	0.0056 (J)			
9/24/2020		<0.01		
9/25/2020			0.049	<0.01

Time Series

Constituent: pH (SU) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							4.77		
9/8/2016				6.32	6.01	6.47			
12/7/2016				6.32	6.07	6.43			
12/8/2016							4.77		
3/28/2017	6.29		5.94						
3/30/2017				6.22	5.97	6.42	4.84		
3/31/2017								6.25	
5/11/2017	6.6								
5/12/2017			5.46					6.23	6.63
5/15/2017		5.72							
6/15/2017	6.41	5.74							
6/16/2017			5.81					6.22	6.63
7/11/2017		5.62	5.74						
7/12/2017	5.91								
7/13/2017				6.3	6.11	6.47	4.85	6.15	6.84
8/8/2017		5.6							6.57
10/24/2017	5.51	5.71	5.86						
10/26/2017					6.06	6.49	4.86	6.64	7.01
11/15/2017	6.5		5.77						
2/27/2018		5.5	5.66						
3/1/2018				6.28	6.05	6.37			
3/2/2018							4.67	6.18	6.58
3/8/2018	6.18								
7/10/2018		5.44	5.63						
7/12/2018	6.33			6.43	6.05	6.45	4.63		
7/13/2018								6.19	6.62
11/6/2018		5.71	5.79						
11/7/2018	6.22								
11/8/2018				6.36	6.07	6.49	4.79	6.23	6.5
3/12/2019		5.52	5.74						
3/13/2019	6			6.26	6.05	6.28	4.6	6.19	6.57
8/27/2019		5.53	5.87						
8/28/2019	6.04			6.27	5.98	6.41	4.68	6.22	6.6
10/15/2019		5.61	5.88						
10/16/2019	6.69								6.6
10/17/2019								6.14	
10/18/2019				6.26	6	6.35	4.71		
3/2/2020		5.54	5.77						
3/4/2020							4.64		
3/9/2020	6.41 (D)			6.34	6.12	6.37		6.23	6.6
8/11/2020		5.86	5.96						
8/13/2020	6.17			6.34	6.05	6.39	4.65	6.28	6.63
9/22/2020	6.43	6.01	6.06						
9/23/2020							4.78	6.23	6.6
9/24/2020				6.3	6.05				
9/25/2020						6.38			

Time Series

Constituent: pH (SU) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	6.26			
4/12/2017	6.19			
5/12/2017	6.2			
6/16/2017	6.22			
7/13/2017	6.35			
10/26/2017	6.69			
11/15/2017	6.22			
3/2/2018	6.1			
7/13/2018	5.95			
11/8/2018	6			
3/13/2019	6.08			
8/28/2019	6.09			
10/16/2019	6.19			
3/9/2020	6.12			
8/3/2020				4.93
8/13/2020	6.26	6.4		
8/14/2020			6.19	
8/17/2020				5.02
9/23/2020	6.08			
9/24/2020		6.55		
9/25/2020			6.16	5.53

Time Series

Constituent: Selenium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							0.0019 (J)		
9/8/2016				<0.01	<0.01	<0.01			
12/7/2016				<0.01	<0.01	<0.01			
12/8/2016							0.0022 (J)		
3/28/2017	<0.01	<0.01	<0.01						
3/30/2017				<0.01	<0.01	<0.01	0.0023 (J)		
3/31/2017								<0.01	
5/11/2017	<0.01								
5/12/2017			<0.01					<0.01	<0.01
5/15/2017		<0.01							
6/15/2017	<0.01	<0.01							
6/16/2017			<0.01					<0.01	<0.01
7/11/2017		<0.01	<0.01						
7/12/2017	<0.01								
7/13/2017				<0.01	<0.01	<0.01	0.0025 (J)	<0.01	<0.01
8/8/2017		<0.01							<0.01
10/24/2017	<0.01	<0.01	<0.01						
10/26/2017				<0.01	<0.01	<0.01	0.0036 (J)	<0.01	<0.01
2/27/2018		<0.01	<0.01						
3/1/2018				<0.01	<0.01	<0.01			
3/2/2018							<0.01	<0.01	<0.01
3/8/2018	<0.01								
7/12/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
7/13/2018								<0.01	<0.01
11/6/2018		<0.01	<0.01						
11/7/2018	<0.01								
11/8/2018				<0.01	<0.01	<0.01	<0.01 (J)	<0.01	<0.01
8/27/2019		<0.01	<0.01						
8/28/2019	<0.01			<0.01	<0.01	<0.01	0.0017 (J)	<0.01	<0.01
10/15/2019		<0.01	<0.01						
10/16/2019	<0.01								<0.01
10/17/2019								<0.01	
10/18/2019				<0.01	<0.01	<0.01	0.0027 (J)		
3/2/2020		<0.01	<0.01						
3/4/2020							0.0049 (J)		
3/9/2020	<0.01			<0.01	<0.01	<0.01		<0.01	<0.01
8/11/2020		<0.01	<0.01						
8/13/2020	<0.01			<0.01	<0.01	<0.01	0.0018 (J)	<0.01	<0.01
9/22/2020	<0.01	<0.01	<0.01						
9/23/2020							0.0067 (J)	<0.01	<0.01
9/24/2020				<0.01	<0.01				
9/25/2020						<0.01			

Time Series

Constituent: Selenium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	<0.01			
5/12/2017	<0.01			
6/16/2017	<0.01			
7/13/2017	<0.01			
10/26/2017	<0.01			
11/15/2017	<0.01			
3/2/2018	<0.01			
7/13/2018	<0.01			
11/8/2018	<0.01			
8/28/2019	<0.01			
10/16/2019	<0.01			
3/9/2020	<0.01			
8/13/2020	<0.01	<0.01		
8/14/2020			<0.01	
8/17/2020				<0.01
9/23/2020	<0.01			
9/24/2020		<0.01		
9/25/2020			<0.01	<0.01

Time Series

Constituent: Sulfate (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							230		
9/8/2016				97	270	280			
12/7/2016				100	250	250			
12/8/2016							270		
3/28/2017	49	2.7	17						
3/30/2017				110	290	310	240		
3/31/2017								110	
5/11/2017	21								
5/12/2017			17					100	50
5/15/2017		1							
6/15/2017	16	0.86 (J)							
6/16/2017			11					100	47
7/11/2017		1.4	11						
7/12/2017	10								
7/13/2017				200 (o)	270	220	220	110	49
8/8/2017		1.5							48
10/24/2017	15	1.4	9.6						
10/26/2017				97	260	210	220	100	48
11/15/2017	3.8		7.8						
2/27/2018		0.54 (J)	7.4						
3/1/2018				94.6	242	166			
3/2/2018							219	98.5	44.7
3/8/2018	9.7								
7/12/2018	8			89.2	256	169	222		
7/13/2018								136	43.3
11/6/2018		<1 (J)	7.3						
11/7/2018	12.8								
11/8/2018				102	291	200	273	118	43.5
3/12/2019		0.35 (J)	7						
3/13/2019	23.7			92.2	300	265	445	233	44.1
10/15/2019		0.16 (J)	7.4						
10/16/2019	15.1								32.1
10/17/2019								99.4	
10/18/2019				76.4	239	182	205		
3/2/2020		<1	8.5						
3/4/2020							177		
3/9/2020	9.5			90.3	244	171		100	37.4
9/22/2020	13.5	<1	6.5						
9/23/2020							190	99.8	38.7
9/24/2020				84.1	240				
9/25/2020						153			

Time Series

Constituent: Sulfate (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	21			
5/12/2017	17			
6/16/2017	20			
7/13/2017	17			
10/26/2017	31			
11/15/2017	29			
3/2/2018	10.1			
7/13/2018	8.6			
11/8/2018	9.7			
3/13/2019	8.4			
10/16/2019	13.3			
3/9/2020	7.6			
9/23/2020	5.9			
9/24/2020		50.6		
9/25/2020			20.1	385

Time Series

Constituent: TDS (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							583 (o)		
9/8/2016				279	437	522			
12/7/2016				300	478	565			
12/8/2016							319		
3/28/2017	202	39	90						
3/30/2017				273	448	496	344		
3/31/2017								270	
5/11/2017	241								
5/12/2017			92					287	300
5/15/2017		88							
6/15/2017	251	65							
6/16/2017			100					309	271
7/11/2017		25	59						
7/12/2017	218								
7/13/2017				312	504	508	386	275	246
8/8/2017		53							278
10/24/2017	671 (o)	49	117						
10/26/2017				340	554	532	373	319	287
11/15/2017	241		90						
2/27/2018		43	79						
3/1/2018				311	492	440			
3/2/2018							359	264	252
3/8/2018	213								
7/12/2018	198			290	478	463	365		
7/13/2018								297	275
11/6/2018		65	85						
11/7/2018	200								
11/8/2018				295	507	485	399	295	277
3/12/2019		43	74						
3/13/2019	201			286	487	526	351	278	267
10/15/2019		70	89						
10/16/2019	126								218
10/17/2019								281	
10/18/2019				269	494	489	360		
3/2/2020		52	67						
3/4/2020							400		
3/9/2020	171			357	554	508		209	188
9/22/2020	142	46	74						
9/23/2020							357	296	251
9/24/2020				280	489				
9/25/2020						460			

Time Series

Constituent: TDS (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	138			
5/12/2017	243			
6/16/2017	155			
7/13/2017	122			
10/26/2017	234			
11/15/2017	188			
3/2/2018	73			
7/13/2018	95			
11/8/2018	112			
3/13/2019	95			
10/16/2019	108			
3/9/2020	115			
9/23/2020	102			
9/24/2020		170		
9/25/2020			134	724

Time Series

Constituent: Thallium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A
9/2/2016							<0.001		
9/8/2016				<0.001	<0.001	<0.001			
12/7/2016				<0.001	<0.001	<0.001			
12/8/2016							<0.001		
3/28/2017	<0.001	<0.001	6E-05 (J)						
3/30/2017				<0.001	0.0001 (J)	0.0001 (J)	6E-05 (J)		
3/31/2017								<0.001	
5/11/2017	<0.001								
5/12/2017			<0.001					<0.001	<0.001
5/15/2017		<0.001							
6/15/2017	<0.001	<0.001							
6/16/2017			<0.001					<0.001	<0.001
7/11/2017		<0.001	<0.001						
7/12/2017	<0.001								
7/13/2017				<0.001	0.0001 (J)	9E-05 (J)	6E-05 (J)	<0.001	<0.001
8/8/2017		<0.001							<0.001
10/24/2017	<0.001	<0.001	<0.001						
10/26/2017				<0.001	0.0001 (J)	0.0001 (J)	7E-05 (J)	<0.001	<0.001
2/27/2018		<0.001	<0.001						
3/1/2018				<0.001	<0.001	<0.001			
3/2/2018							<0.001	<0.001	<0.001
3/8/2018	<0.001								
7/12/2018	<0.001			<0.001	<0.001	<0.001	<0.001		
7/13/2018								<0.001	0.00015 (J)
11/6/2018		<0.001	<0.001						
11/7/2018	<0.001								
11/8/2018				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8/27/2019		<0.001	<0.001						
8/28/2019	<0.001			<0.001	0.00014 (J)	6.9E-05 (J)	7E-05 (J)	<0.001	<0.001
10/15/2019		<0.001	<0.001						
10/16/2019	<0.001								<0.001
10/17/2019								<0.001	
10/18/2019				<0.001	0.0001 (J)	<0.001	<0.001		
3/2/2020		7.8E-05 (J)	<0.001						
3/4/2020							6.8E-05 (J)		
3/9/2020	<0.001			<0.001	0.00016 (J)	7.1E-05 (J)		<0.001	<0.001
8/11/2020		<0.001	<0.001						
8/13/2020	<0.001			<0.001	0.00016 (J)	<0.001	<0.001	<0.001	<0.001
9/22/2020	<0.001	<0.001	<0.001						
9/23/2020							<0.001	<0.001	<0.001
9/24/2020				<0.001	0.00015 (J)				
9/25/2020						<0.001			

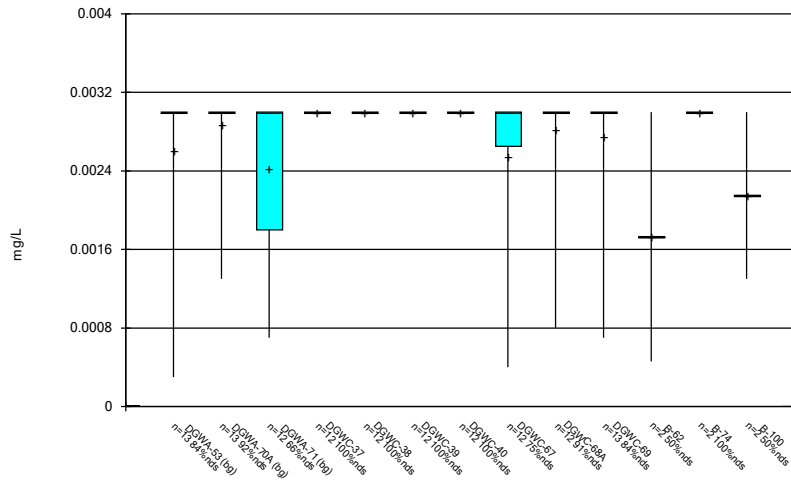
Time Series

Constituent: Thallium (mg/L) Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-69	B-62	B-74	B-100
3/31/2017	<0.001			
5/12/2017	<0.001			
6/16/2017	<0.001			
7/13/2017	<0.001			
10/26/2017	<0.001			
11/15/2017	<0.001			
3/2/2018	<0.001			
7/13/2018	<0.001			
11/8/2018	<0.001			
8/28/2019	<0.001			
10/16/2019	<0.001			
3/9/2020	<0.001			
8/13/2020	<0.001	<0.001		
8/14/2020			<0.001	
8/17/2020				<0.001
9/23/2020	<0.001			
9/24/2020		<0.001		
9/25/2020			<0.001	<0.001

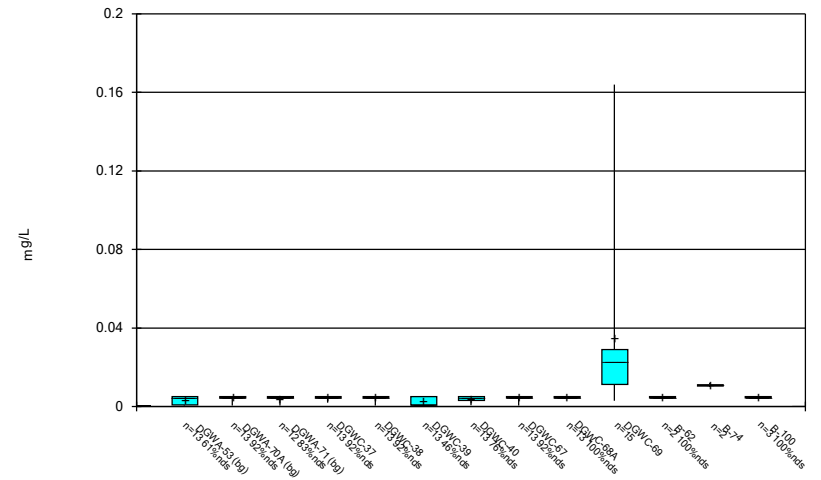
FIGURE B.

Box & Whiskers Plot



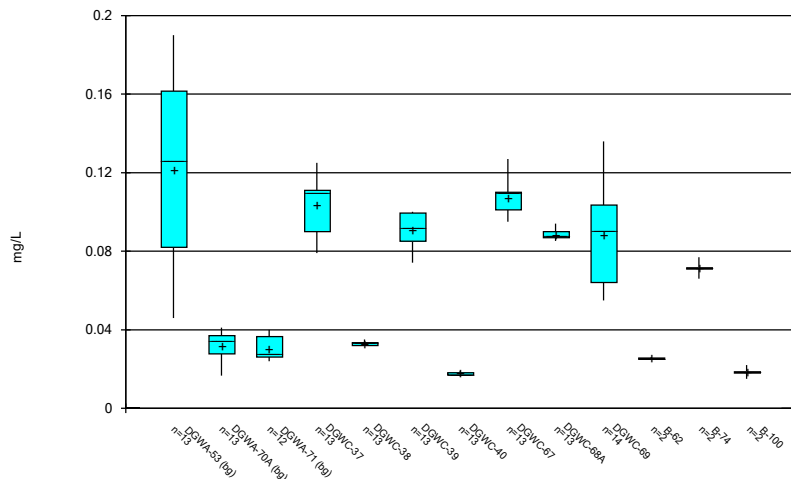
Constituent: Antimony Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



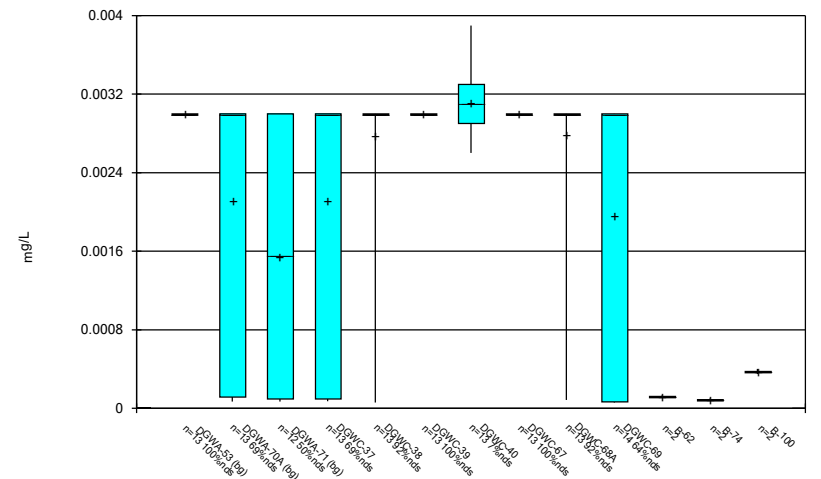
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 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



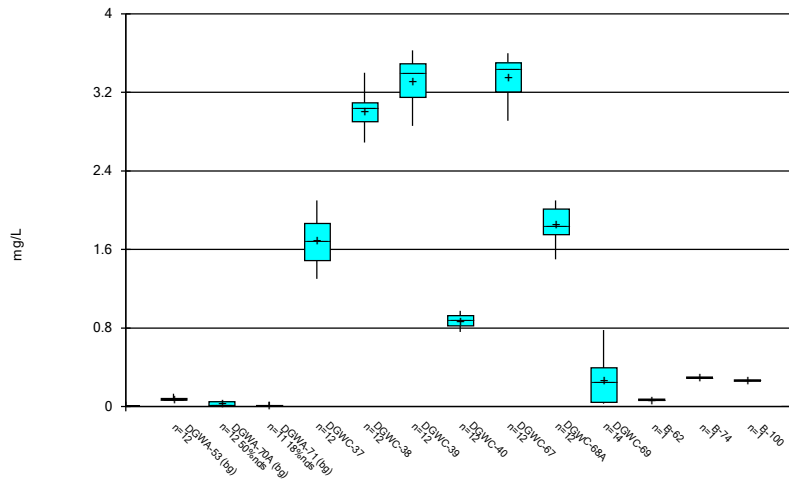
Constituent: Barium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



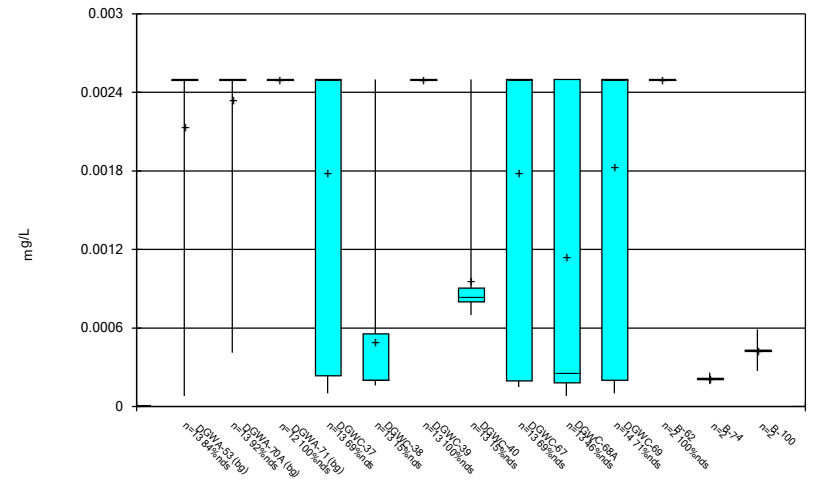
Constituent: Beryllium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



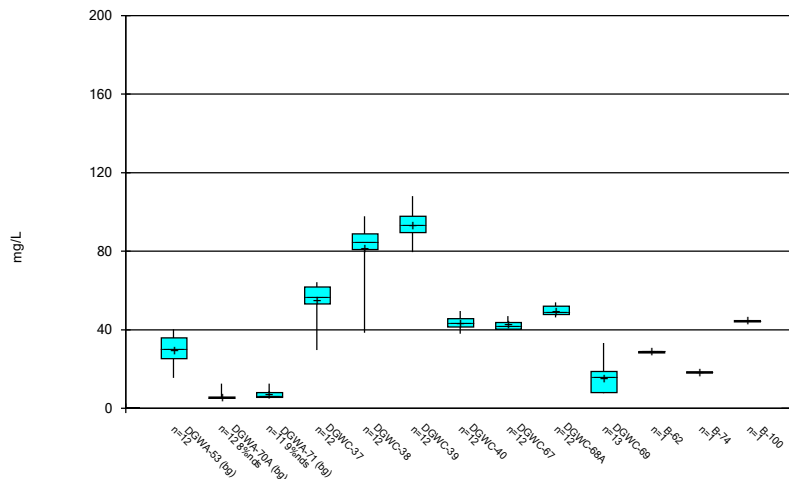
Constituent: Boron Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



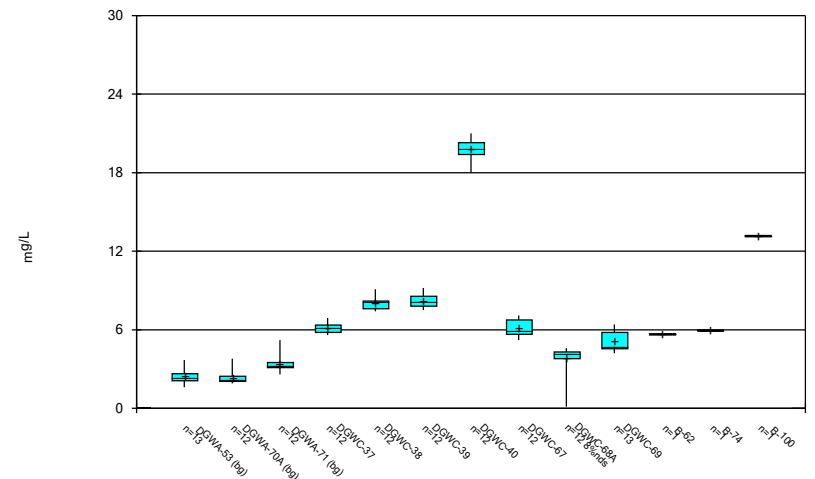
Constituent: Cadmium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



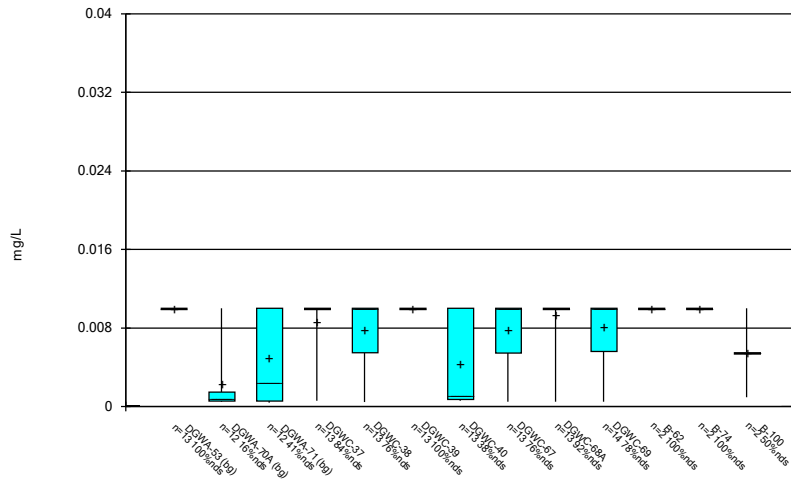
Constituent: Calcium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



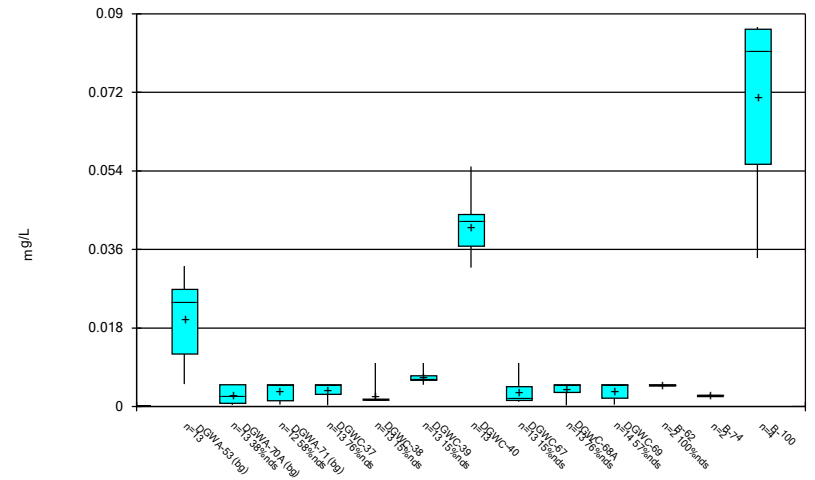
Constituent: Chloride Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



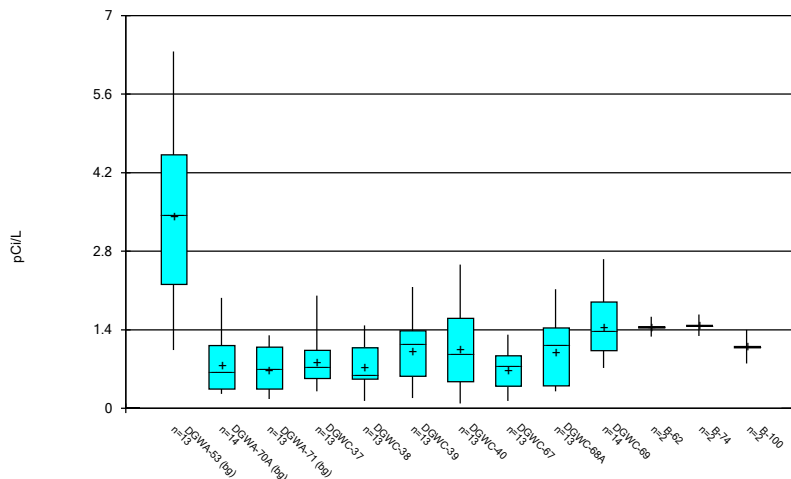
Constituent: Chromium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



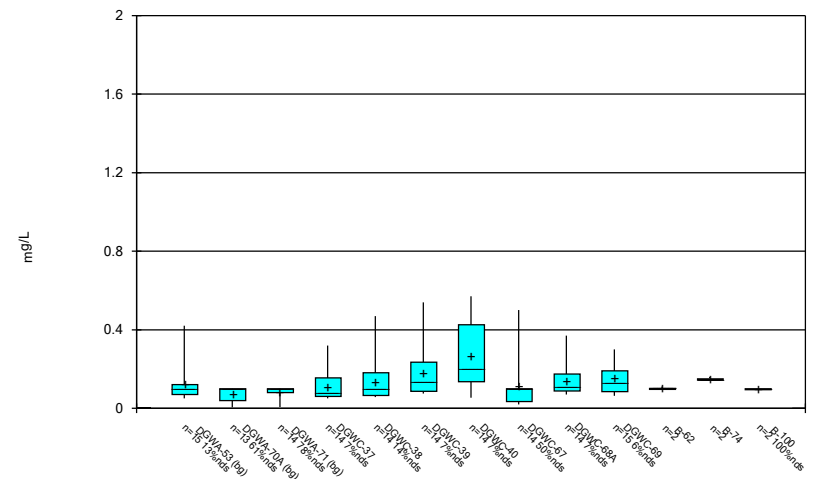
Constituent: Cobalt Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



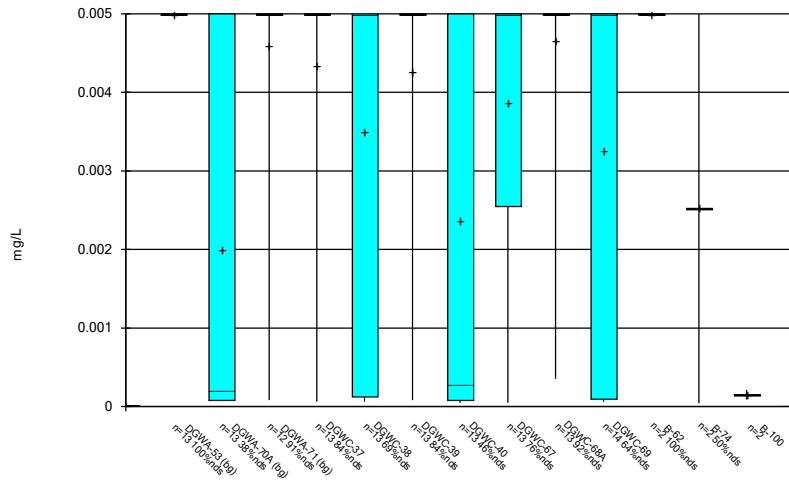
Constituent: Combined Radium 226 + 228 Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



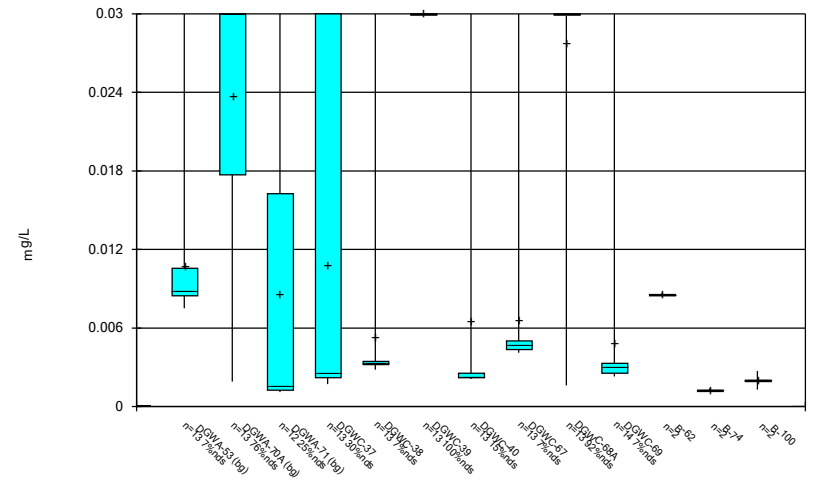
Constituent: Fluoride Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



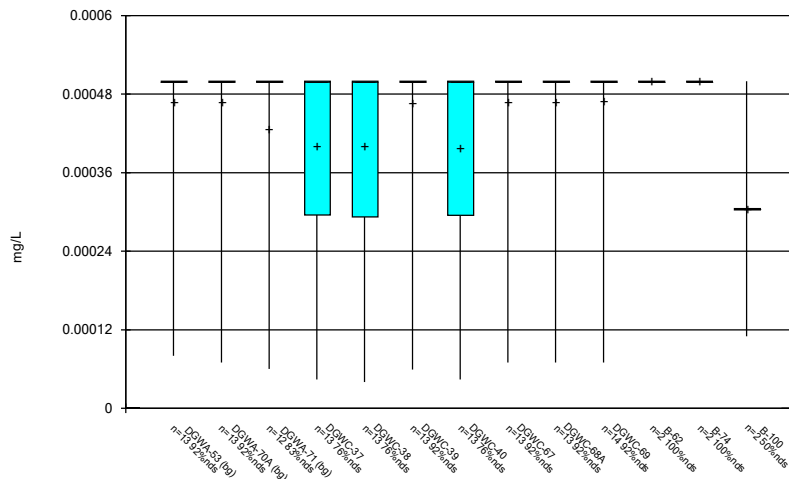
Constituent: Lead Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



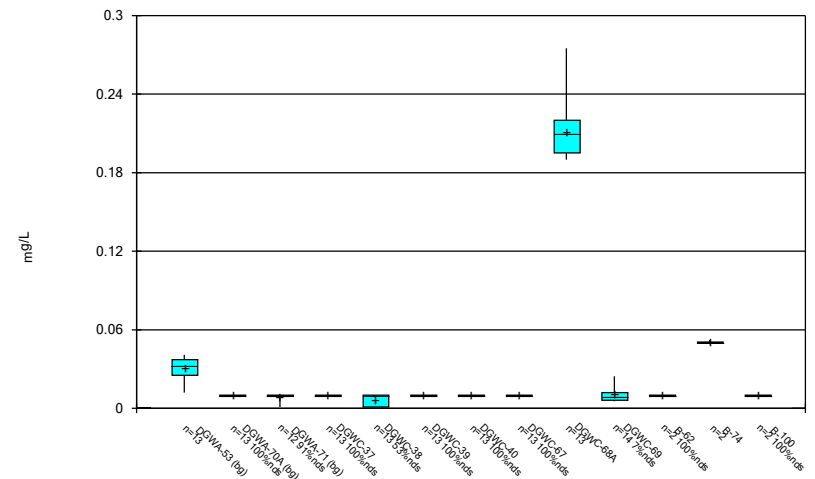
Constituent: Lithium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



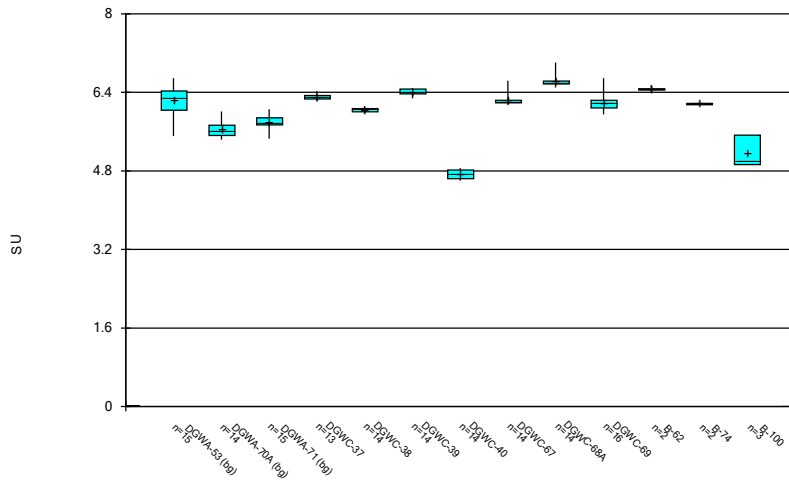
Constituent: Mercury Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



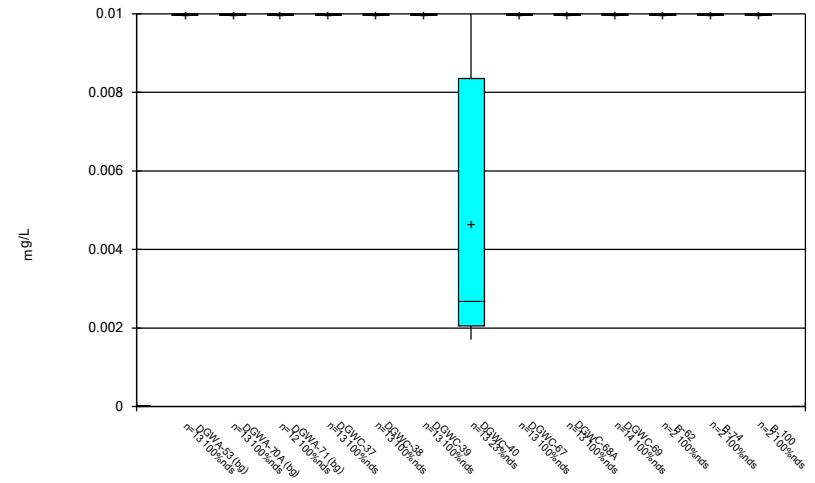
Constituent: Molybdenum Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



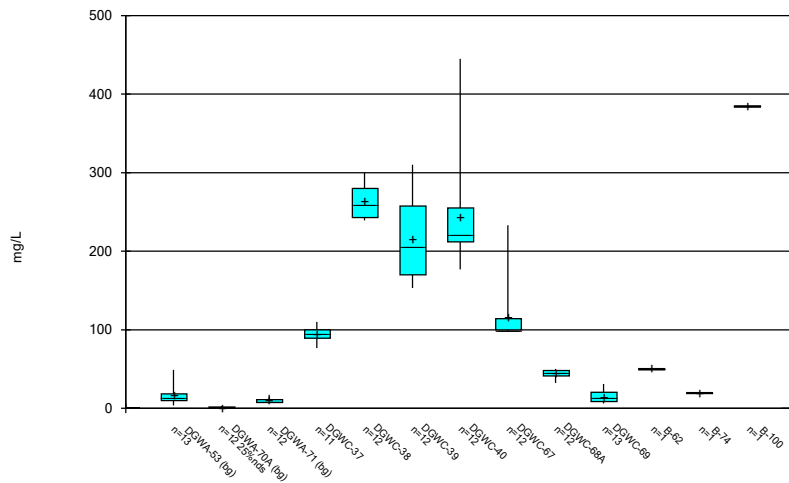
Constituent: pH Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



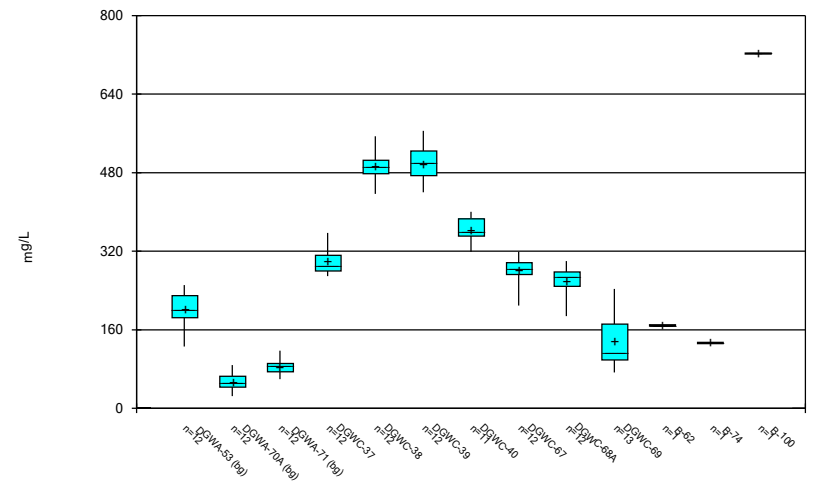
Constituent: Selenium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



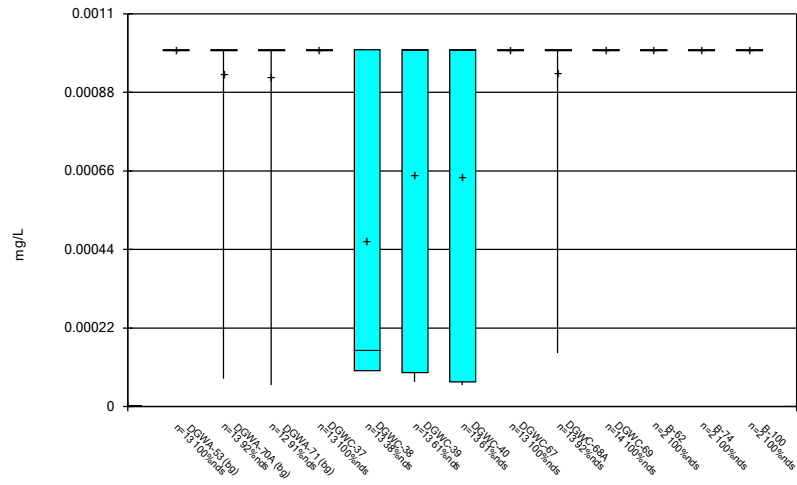
Constituent: Sulfate Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



Constituent: TDS Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



Constituent: Thallium Analysis Run 11/4/2020 3:08 PM View: Descriptive AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

FIGURE C.

Outlier Summary

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/4/2020, 3:00 PM

	DGWA-70A Chromium (mg/L)	DGWA-70A Fluoride (mg/L)	DGWC-37 Sulfate (mg/L)	DGWA-53 TDS (mg/L)	DGWC-40 TDS (mg/L)
9/2/2016					583 (o)
3/28/2017	1.2 (o)				
7/13/2017		200 (o)			
10/24/2017				671 (o)	
10/15/2019	0.034 (O)				

FIGURE D.

Interwell Prediction Limit Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/4/2020, 3:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	9/24/2020	1.6	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	9/24/2020	2.9	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	9/25/2020	3.3	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	9/23/2020	0.76	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	9/23/2020	3.2	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	9/23/2020	1.7	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40	n/a	9/24/2020	55.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40	n/a	9/24/2020	84.1	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40	n/a	9/25/2020	92.5	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40	n/a	9/23/2020	41.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40	n/a	9/23/2020	42	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40	n/a	9/23/2020	50.2	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	4.3	n/a	9/24/2020	5.6	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.3	n/a	9/24/2020	8.2	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.3	n/a	9/25/2020	7.9	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.3	n/a	9/23/2020	19.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.3	n/a	9/23/2020	7.1	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.3	n/a	9/23/2020	4.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
pH (SU)	DGWC-40	6.6	5.3	9/23/2020	4.78	Yes	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	31	n/a	9/24/2020	84.1	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	31	n/a	9/24/2020	240	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	31	n/a	9/25/2020	153	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	31	n/a	9/23/2020	190	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	31	n/a	9/23/2020	99.8	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	31	n/a	9/23/2020	38.7	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	280	n/a	9/24/2020	489	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	280	n/a	9/25/2020	460	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	280	n/a	9/23/2020	357	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	280	n/a	9/23/2020	296	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2

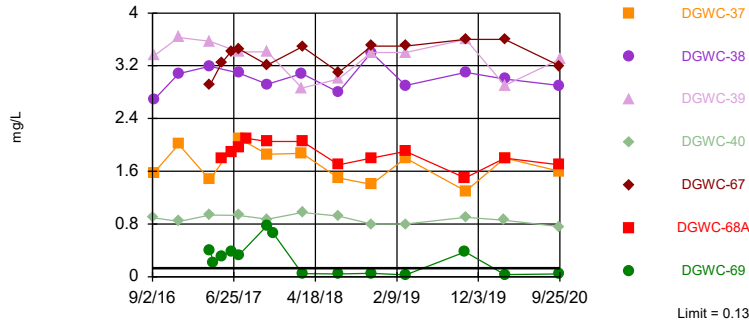
Interwell Prediction Limit Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/4/2020, 3:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	9/24/2020	1.6	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	9/24/2020	2.9	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	9/25/2020	3.3	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	9/23/2020	0.76	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	9/23/2020	3.2	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	9/23/2020	1.7	Yes	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-69	0.13	n/a	9/23/2020	0.041J	No	35	n/a	n/a	22.86	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40	n/a	9/24/2020	55.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40	n/a	9/24/2020	84.1	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40	n/a	9/25/2020	92.5	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40	n/a	9/23/2020	41.9	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40	n/a	9/23/2020	42	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40	n/a	9/23/2020	50.2	Yes	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-69	40	n/a	9/23/2020	8	No	35	n/a	n/a	5.714	n/a	n/a	0.001441	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	4.3	n/a	9/24/2020	5.6	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.3	n/a	9/24/2020	8.2	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.3	n/a	9/25/2020	7.9	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.3	n/a	9/23/2020	19.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.3	n/a	9/23/2020	7.1	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	4.3	n/a	9/23/2020	3.6	No	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.3	n/a	9/23/2020	4.7	Yes	37	1.634	0.2181	0	None	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	DGWC-37	0.42	n/a	9/24/2020	0.061J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-38	0.42	n/a	9/24/2020	0.057J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-39	0.42	n/a	9/25/2020	0.086J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-40	0.42	n/a	9/23/2020	0.054J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-67	0.42	n/a	9/23/2020	0.1ND	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-68A	0.42	n/a	9/23/2020	0.07J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-69	0.42	n/a	9/23/2020	0.064J	No	42	n/a	n/a	50	n/a	n/a	0.001046	NP Inter (normality) 1 of 2
pH (SU)	DGWC-37	6.6	5.3	9/24/2020	6.3	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-38	6.6	5.3	9/24/2020	6.05	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-39	6.6	5.3	9/25/2020	6.38	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-40	6.6	5.3	9/23/2020	4.78	Yes	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-67	6.6	5.3	9/23/2020	6.23	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-68A	6.6	5.3	9/23/2020	6.6	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
pH (SU)	DGWC-69	6.6	5.3	9/23/2020	6.08	No	44	5.903	0.3302	0	None	No	0.0005373	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	31	n/a	9/24/2020	84.1	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	31	n/a	9/24/2020	240	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	31	n/a	9/25/2020	153	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	31	n/a	9/23/2020	190	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	31	n/a	9/23/2020	99.8	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	31	n/a	9/23/2020	38.7	Yes	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-69	31	n/a	9/23/2020	5.9	No	37	2.639	1.476	8.108	None	sqrt(x)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-37	280	n/a	9/24/2020	280	No	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	280	n/a	9/24/2020	489	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	280	n/a	9/25/2020	460	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	280	n/a	9/23/2020	357	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	280	n/a	9/23/2020	296	Yes	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-68A	280	n/a	9/23/2020	251	No	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-69	280	n/a	9/23/2020	102	No	36	4.642	0.9577	0	None	x^(1/3)	0.001075	Param Inter 1 of 2

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A

Prediction Limit
Interwell Non-parametric

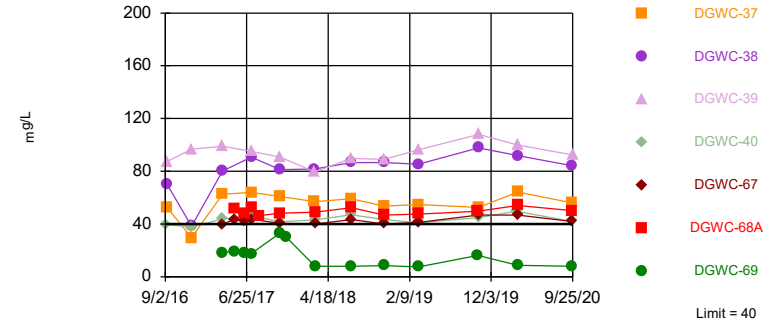


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 35 background values. 22.86% NDs. Annual per-constituent alpha = 0.01998. Individual comparison alpha = 0.001441 (1 of 2). Comparing 7 points to limit.

Constituent: Boron Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A

Prediction Limit
Interwell Non-parametric

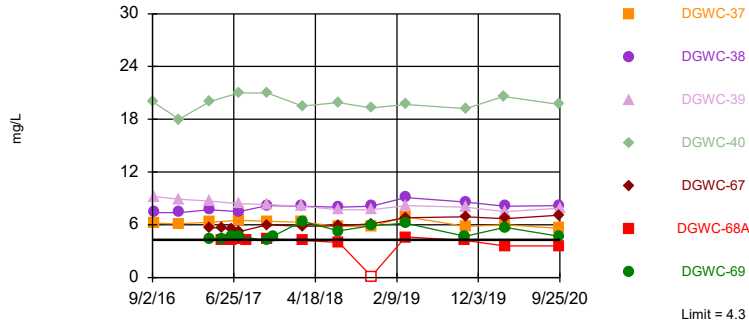


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 35 background values. 5.714% NDs. Annual per-constituent alpha = 0.01998. Individual comparison alpha = 0.001441 (1 of 2). Comparing 7 points to limit.

Constituent: Calcium Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-69

Prediction Limit
Interwell Parametric

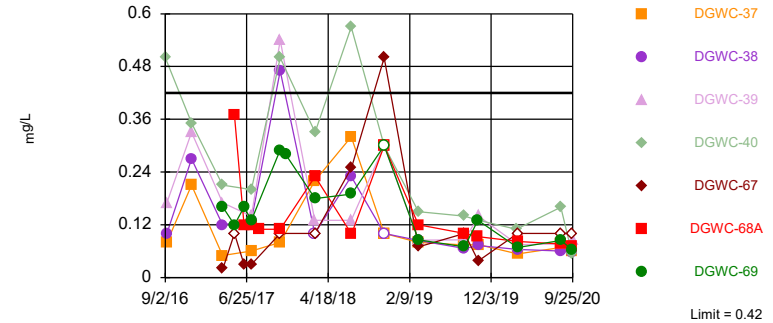


Background Data Summary (based on square root transformation): Mean=1.634, Std. Dev.=0.2181, n=37. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9429, critical = 0.914. Kappa = 1.985 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Chloride Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Within Limit

Prediction Limit
Interwell Non-parametric

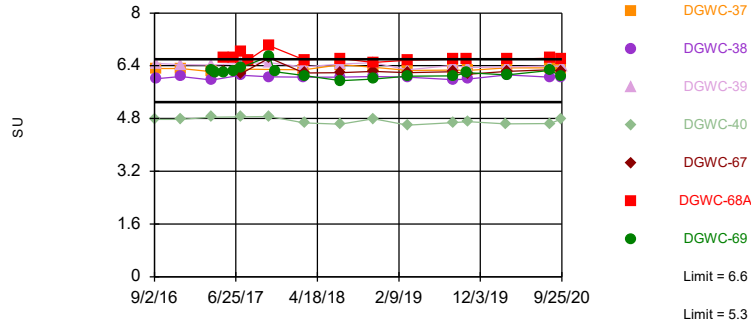


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. 50% NDs. Annual per-constituent alpha = 0.01455. Individual comparison alpha = 0.001046 (1 of 2). Comparing 7 points to limit.

Constituent: Fluoride Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limits: DGWC-40

Prediction Limit
Interwell Parametric

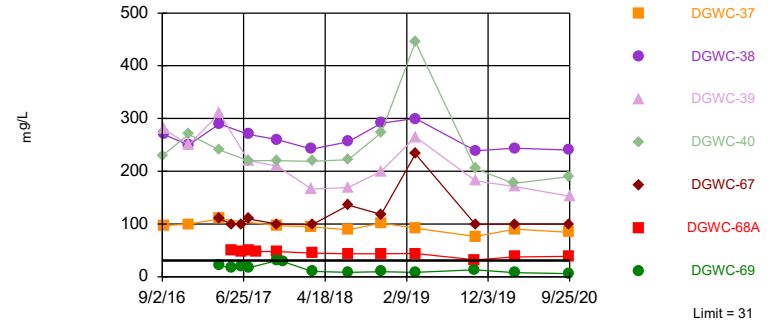


Background Data Summary: Mean=5.903, Std. Dev.=0.3302, n=44. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9275, critical = 0.924. Kappa = 1.959 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005373. Comparing 7 points to limit.

Constituent: pH Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A

Prediction Limit
Interwell Parametric

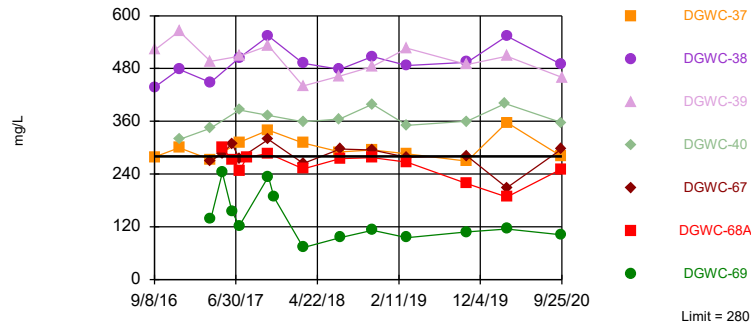


Background Data Summary (based on square root transformation): Mean=2.639, Std. Dev.=1.476, n=37, 8.108% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9367, critical = 0.914. Kappa = 1.985 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-38, DGWC-39, DGWC-40, DGWC-67

Prediction Limit
Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=4.642, Std. Dev.=0.9577, n=36. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9221, critical = 0.912. Kappa = 1.99 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: TDS Analysis Run 11/4/2020 3:01 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-70A (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69
9/2/2016	0.895								
9/8/2016		3.35	2.69	1.58					
12/7/2016		3.63	3.08	2.01					
12/8/2016	0.841								
3/28/2017					0.0097 (J)	0.0067 (J)	0.0612		
3/30/2017	0.937	3.57	3.19	1.47					
3/31/2017								2.91	0.407
4/12/2017									0.207
5/11/2017							0.0805		
5/12/2017					0.0082 (J)			3.24	0.311
5/15/2017						0.0073 (J)			
6/15/2017						<0.1	0.0725		
6/16/2017					0.0085 (J)			3.42	0.381
7/11/2017					0.0077 (J)	<0.1			
7/12/2017							0.0735		
7/13/2017	0.933	3.41	3.09	2.1				3.46	0.323
8/8/2017						<0.1			
10/24/2017					0.0083 (J)	0.0082 (J)	0.077		
10/26/2017	0.873	3.41	2.92	1.86				3.21	0.779
11/15/2017									0.667
2/27/2018					0.0069 (J)	0.0062 (J)			
3/1/2018		2.86	3.08	1.87					
3/2/2018	0.974							3.49	0.0478
3/8/2018							0.13 (J)		
7/12/2018	0.92	3	2.8	1.5			0.076		
7/13/2018								3.1	0.043
11/6/2018					<0.04 (J)	<0.04 (J)			
11/7/2018							0.073		
11/8/2018	0.8	3.4	3.4	1.4				3.5	0.054
3/12/2019					0.0068 (J)	0.0073 (J)			
3/13/2019	0.8	3.4	2.9	1.8			0.08	3.5	0.028 (J)
10/15/2019					0.0054 (J)	<0.1			
10/16/2019							0.059		0.38
10/17/2019								3.6	
10/18/2019	0.9	3.6	3.1	1.3					
3/2/2020					0.01 (J)	0.0055 (J)			
3/4/2020	0.86								
3/9/2020		2.9	3	1.8			0.08 (J)	3.6	0.035 (J)
9/22/2020					<0.1	<0.1	0.056 (J)		
9/23/2020	0.76							3.2	0.041 (J)
9/24/2020			2.9	1.6					
9/25/2020		3.3							

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
4/12/2017	
5/11/2017	
5/12/2017	1.8
5/15/2017	
6/15/2017	
6/16/2017	1.88
7/11/2017	
7/12/2017	
7/13/2017	1.97
8/8/2017	2.1
10/24/2017	
10/26/2017	2.05
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	2.05
3/8/2018	
7/12/2018	
7/13/2018	1.7
11/6/2018	
11/7/2018	
11/8/2018	1.8
3/12/2019	
3/13/2019	1.9
10/15/2019	
10/16/2019	1.5
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	1.8
9/22/2020	
9/23/2020	1.7
9/24/2020	
9/25/2020	

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-70A (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69
9/2/2016	39.6								
9/8/2016		87.2	70.3	52.5					
12/7/2016		96.7	38.4	29.7					
12/8/2016	37.9								
3/28/2017					8.31	5.14	30.8		
3/30/2017	43.9	98.9	80.3	62.6					
3/31/2017								39.9	18.6 (J)
5/11/2017							35.8		
5/12/2017					8.04			43.6	18.9 (J)
5/15/2017						6.5			
6/15/2017						5.38	36		
6/16/2017					7.66			42.5	17.7
7/11/2017					7.71	5.96			
7/12/2017							40.3		
7/13/2017	46.2	95	90.8	64.1				43.7	17.6
8/8/2017						5.2			
10/24/2017					6.86	4.93	30.3		
10/26/2017	41.8	90.6	81.3	60.8				40.4	33.3
11/15/2017									30.6
2/27/2018					<25	<25			
3/1/2018		79.6	81.8	57					
3/2/2018	43.2							40.1	8.09
3/8/2018							39.8		
7/12/2018	47.1	89.8	86.7	59.1			34.7		
7/13/2018								43.3	7.9
11/6/2018					5.7	5.5			
11/7/2018							28.6		
11/8/2018	43.5	89	86.6	53.6				40.1	8.5
3/12/2019					5.5	5.1			
3/13/2019	41	96.3	85.3	54.8			26.7	41.2	7.6
10/15/2019					5.1	5.1			
10/16/2019							17.7		16.2
10/17/2019								46.9	
10/18/2019	44.9	108	97.8	52.5					
3/2/2020					5.8	5.3			
3/4/2020	49.6								
3/9/2020		100	91.9	64.2			23.7	46.9	8.6
9/22/2020					5.4	5	15.5		
9/23/2020	41.9							42	8
9/24/2020			84.1	55.9					
9/25/2020		92.5							

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	51.7
5/15/2017	
6/15/2017	
6/16/2017	47.9
7/11/2017	
7/12/2017	
7/13/2017	52.3
8/8/2017	46.3
10/24/2017	
10/26/2017	48.2
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	48.9
3/8/2018	
7/12/2018	
7/13/2018	52.4
11/6/2018	
11/7/2018	
11/8/2018	46.8
3/12/2019	
3/13/2019	47.5
10/15/2019	
10/16/2019	49.7
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	54
9/22/2020	
9/23/2020	50.2
9/24/2020	
9/25/2020	

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-37	DGWC-38	DGWA-70A (bg)	DGWA-71 (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69
9/2/2016	20								
9/8/2016		9.2	6.2	7.4					
12/7/2016		8.9	6.1	7.4					
12/8/2016	18								
3/28/2017					3.8	3.6	3.7		
3/30/2017	20	8.7	6.3	7.7					
3/31/2017								5.7	4.4
5/11/2017							2.3		
5/12/2017						3.8		5.6	4.4
5/15/2017					2.2				
6/15/2017					2		2.6		
6/16/2017						3.4		5.5	4.7
7/11/2017					2.1	3.1			
7/12/2017							2.3		
7/13/2017	21	8.4	6.5	7.5				5.2	4.7
8/8/2017					2.2				
10/24/2017					2.4	3.2	2.7		
10/26/2017	21	8.3	6.4	8.2				6	4.2
11/15/2017						3.1	2.2		4.7
2/27/2018					2.5	3.2			
3/1/2018		8.1	6.3	8.1					
3/2/2018	19.5							5.8	6.4
3/8/2018							2.4		
7/12/2018	19.9	7.7	5.8	8			2.2		
7/13/2018								5.9	5.3
11/6/2018					2.3	2.6			
11/7/2018							2.3		
11/8/2018	19.3	7.7	5.8	8.1				6.1	5.9
3/12/2019					2.5	3.3			
3/13/2019	19.7	8.2	6.9	9.1			3.6	6.8	6.2
10/15/2019					2.2	3.3			
10/16/2019							2		4.7
10/17/2019								6.9	
10/18/2019	19.2	8	5.8	8.6					
3/2/2020					1.9	3			
3/4/2020	20.6								
3/9/2020		7.5	6	8.1			1.8	6.7	5.7
9/22/2020					1.9	5.2	1.6		
9/23/2020	19.7							7.1	4.7
9/24/2020			5.6	8.2					
9/25/2020		7.9							

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	4.2
5/15/2017	
6/15/2017	
6/16/2017	4.2
7/11/2017	
7/12/2017	
7/13/2017	4.4
8/8/2017	4.2
10/24/2017	
10/26/2017	4.4
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	4.2
3/8/2018	
7/12/2018	
7/13/2018	4
11/6/2018	
11/7/2018	
11/8/2018	<0.25
3/12/2019	
3/13/2019	4.6
10/15/2019	
10/16/2019	4.2
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	3.6
9/22/2020	
9/23/2020	3.6
9/24/2020	
9/25/2020	

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69	DGWC-68A
9/2/2016	0.5								
9/8/2016		0.17 (J)	0.1 (J)	0.08 (J)					
12/7/2016		0.33	0.27 (J)	0.21 (J)					
12/8/2016	0.35								
3/28/2017					0.06 (J)	0.12 (J)			
3/30/2017	0.21 (J)	0.17 (J)	0.12 (J)	0.05 (J)					
3/31/2017							0.02 (J)	0.16 (J)	
5/11/2017						0.07 (J)			
5/12/2017					<0.1		<0.1	0.12 (J)	0.37
5/15/2017									
6/15/2017						0.19 (J)			
6/16/2017					0.008 (J)		0.03 (J)	0.16 (J)	0.12 (J)
7/11/2017					0.007 (J)				
7/12/2017						0.1 (J)			
7/13/2017	0.2 (J)	0.14 (J)	0.13 (J)	0.06 (J)			0.03 (J)	0.13 (J)	0.12 (J)
8/8/2017									0.11 (J)
10/24/2017					<0.1	0.06 (J)			
10/26/2017	0.5	0.54	0.47	0.08 (J)			<0.1	0.29 (J)	0.11 (J)
11/15/2017					<0.1	0.05 (J)		0.28 (J)	
2/27/2018					<0.1				
3/1/2018		0.13	<0.1	0.22					
3/2/2018	0.33						<0.1	0.18	0.23
3/8/2018						<0.1			
7/12/2018	0.57	0.13 (J)	0.23 (J)	0.32		0.071 (J)			
7/13/2018							0.25 (J)	0.19 (J)	0.099 (J)
11/6/2018					<0.1				
11/7/2018						<0.1			
11/8/2018	<0.3 (J)	<0.3 (J)	<0.1	<0.1			0.5	<0.3 (J)	<0.3 (J)
3/12/2019					<0.1				
3/13/2019	0.15 (J)	0.085 (J)	0.084 (J)	0.08 (J)		0.13 (J)	0.07 (J)	0.086 (J)	0.12 (J)
8/27/2019					<0.1				
8/28/2019	0.14	0.086 (J)	0.066 (J)	0.074 (J)		0.42	<0.1	0.07 (J)	0.1
10/15/2019					<0.1				
10/16/2019						0.11 (J)		0.13 (J)	0.093 (J)
10/17/2019							0.038 (J)		
10/18/2019	0.13 (J)	0.14 (J)	0.073 (J)	0.075 (J)					
3/2/2020					<0.1				
3/4/2020	0.11 (J)								
3/9/2020		0.075 (J)	0.064 (J)	0.054 (J)		0.1 (J)	<0.1	0.068 (J)	0.082 (J)
8/11/2020					<0.1				
8/13/2020	0.16	0.076 (J)	0.06 (J)	0.068 (J)		0.062 (J)	<0.1	0.084 (J)	0.076 (J)
9/22/2020					<0.1	0.099 (J)			
9/23/2020	0.054 (J)						<0.1	0.064 (J)	0.07 (J)
9/24/2020			0.057 (J)	0.061 (J)					
9/25/2020		0.086 (J)							

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWA-70A (bg)

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	1.2 (o)
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	
5/15/2017	0.005 (J)
6/15/2017	0.02 (J)
6/16/2017	
7/11/2017	0.06 (J)
7/12/2017	
7/13/2017	
8/8/2017	0.04 (J)
10/24/2017	<0.1
10/26/2017	
11/15/2017	
2/27/2018	<0.1
3/1/2018	
3/2/2018	
3/8/2018	
7/12/2018	
7/13/2018	
11/6/2018	<0.1
11/7/2018	
11/8/2018	
3/12/2019	0.039 (J)
3/13/2019	
8/27/2019	<0.1
8/28/2019	
10/15/2019	<0.1
10/16/2019	
10/17/2019	
10/18/2019	
3/2/2020	<0.1
3/4/2020	
3/9/2020	
8/11/2020	<0.1
8/13/2020	
9/22/2020	<0.1
9/23/2020	
9/24/2020	
9/25/2020	

Prediction Limit

Constituent: pH (SU) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69	DGWC-68A
9/2/2016	4.77								
9/8/2016		6.47	6.01	6.32					
12/7/2016		6.43	6.07	6.32					
12/8/2016	4.77								
3/28/2017					5.94	6.29			
3/30/2017	4.84	6.42	5.97	6.22					
3/31/2017							6.25	6.26	
4/12/2017								6.19	
5/11/2017						6.6			
5/12/2017					5.46		6.23	6.2	6.63
5/15/2017									
6/15/2017						6.41			
6/16/2017					5.81		6.22	6.22	6.63
7/11/2017					5.74				
7/12/2017						5.91			
7/13/2017	4.85	6.47	6.11	6.3			6.15	6.35	6.84
8/8/2017									6.57
10/24/2017					5.86	5.51			
10/26/2017	4.86	6.49	6.06				6.64	6.69	7.01
11/15/2017					5.77	6.5		6.22	
2/27/2018					5.66				
3/1/2018		6.37	6.05	6.28					
3/2/2018	4.67						6.18	6.1	6.58
3/8/2018						6.18			
7/10/2018					5.63				
7/12/2018	4.63	6.45	6.05	6.43		6.33			
7/13/2018							6.19	5.95	6.62
11/6/2018					5.79				
11/7/2018						6.22			
11/8/2018	4.79	6.49	6.07	6.36			6.23	6	6.5
3/12/2019					5.74				
3/13/2019	4.6	6.28	6.05	6.26		6	6.19	6.08	6.57
8/27/2019					5.87				
8/28/2019	4.68	6.41	5.98	6.27		6.04	6.22	6.09	6.6
10/15/2019					5.88				
10/16/2019						6.69		6.19	6.6
10/17/2019							6.14		
10/18/2019	4.71	6.35	6	6.26					
3/2/2020					5.77				
3/4/2020	4.64								
3/9/2020		6.37	6.12	6.34		6.41 (D)	6.23	6.12	6.6
8/11/2020					5.96				
8/13/2020	4.65	6.39	6.05	6.34		6.17	6.28	6.26	6.63
9/22/2020					6.06	6.43			
9/23/2020	4.78						6.23	6.08	6.6
9/24/2020			6.05	6.3					
9/25/2020		6.38							

Prediction Limit

Constituent: pH (SU) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWA-70A (bg)

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
4/12/2017	
5/11/2017	
5/12/2017	
5/15/2017	5.72
6/15/2017	5.74
6/16/2017	
7/11/2017	5.62
7/12/2017	
7/13/2017	
8/8/2017	5.6
10/24/2017	5.71
10/26/2017	
11/15/2017	
2/27/2018	5.5
3/1/2018	
3/2/2018	
3/8/2018	
7/10/2018	5.44
7/12/2018	
7/13/2018	
11/6/2018	5.71
11/7/2018	
11/8/2018	
3/12/2019	5.52
3/13/2019	
8/27/2019	5.53
8/28/2019	
10/15/2019	5.61
10/16/2019	
10/17/2019	
10/18/2019	
3/2/2020	5.54
3/4/2020	
3/9/2020	
8/11/2020	5.86
8/13/2020	
9/22/2020	6.01
9/23/2020	
9/24/2020	
9/25/2020	

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-70A (bg)	DGWA-53 (bg)	DGWC-69	DGWC-67
9/2/2016	230								
9/8/2016		280	270	97					
12/7/2016		250	250	100					
12/8/2016	270								
3/28/2017					17	2.7	49		
3/30/2017	240	310	290	110					
3/31/2017								21	110
5/11/2017							21		
5/12/2017					17			17	100
5/15/2017						1			
6/15/2017						0.86 (J)	16		
6/16/2017					11			20	100
7/11/2017					11	1.4			
7/12/2017							10		
7/13/2017	220	220	270	200 (o)				17	110
8/8/2017						1.5			
10/24/2017					9.6	1.4	15		
10/26/2017	220	210	260	97				31	100
11/15/2017					7.8		3.8	29	
2/27/2018					7.4	0.54 (J)			
3/1/2018		166	242	94.6					
3/2/2018	219							10.1	98.5
3/8/2018							9.7		
7/12/2018	222	169	256	89.2			8		
7/13/2018								8.6	136
11/6/2018					7.3	<1 (J)			
11/7/2018							12.8		
11/8/2018	273	200	291	102				9.7	118
3/12/2019					7	0.35 (J)			
3/13/2019	445	265	300	92.2			23.7	8.4	233
10/15/2019					7.4	0.16 (J)			
10/16/2019							15.1	13.3	
10/17/2019									99.4
10/18/2019	205	182	239	76.4					
3/2/2020					8.5	<1			
3/4/2020	177								
3/9/2020		171	244	90.3			9.5	7.6	100
9/22/2020					6.5	<1	13.5		
9/23/2020	190							5.9	99.8
9/24/2020			240	84.1					
9/25/2020		153							

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	50
5/15/2017	
6/15/2017	
6/16/2017	47
7/11/2017	
7/12/2017	
7/13/2017	49
8/8/2017	48
10/24/2017	
10/26/2017	48
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	44.7
3/8/2018	
7/12/2018	
7/13/2018	43.3
11/6/2018	
11/7/2018	
11/8/2018	43.5
3/12/2019	
3/13/2019	44.1
10/15/2019	
10/16/2019	32.1
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	37.4
9/22/2020	
9/23/2020	38.7
9/24/2020	
9/25/2020	

Prediction Limit

Constituent: TDS (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-38	DGWC-39	DGWC-37	DGWC-40	DGWA-70A (bg)	DGWA-71 (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69
9/2/2016				583 (o)					
9/8/2016	437	522	279						
12/7/2016	478	565	300						
12/8/2016				319					
3/28/2017					39	90	202		
3/30/2017	448	496	273	344					
3/31/2017								270	138
5/11/2017							241		
5/12/2017						92		287	243
5/15/2017					88				
6/15/2017					65		251		
6/16/2017						100		309	155
7/11/2017					25	59			
7/12/2017							218		
7/13/2017	504	508	312	386				275	122
8/8/2017					53				
10/24/2017					49	117	671 (o)		
10/26/2017	554	532	340	373				319	234
11/15/2017						90	241		188
2/27/2018					43	79			
3/1/2018	492	440	311						
3/2/2018				359				264	73
3/8/2018							213		
7/12/2018	478	463	290	365			198		
7/13/2018								297	95
11/6/2018					65	85			
11/7/2018							200		
11/8/2018	507	485	295	399				295	112
3/12/2019					43	74			
3/13/2019	487	526	286	351			201	278	95
10/15/2019					70	89			
10/16/2019							126		108
10/17/2019								281	
10/18/2019	494	489	269	360					
3/2/2020					52	67			
3/4/2020				400					
3/9/2020	554	508	357				171	209	115
9/22/2020					46	74	142		
9/23/2020				357				296	102
9/24/2020	489		280						
9/25/2020		460							

Prediction Limit

Constituent: TDS (mg/L) Analysis Run 11/4/2020 3:03 PM View: Interwell PLs AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	300
5/15/2017	
6/15/2017	
6/16/2017	271
7/11/2017	
7/12/2017	
7/13/2017	246
8/8/2017	278
10/24/2017	
10/26/2017	287
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	252
3/8/2018	
7/12/2018	
7/13/2018	275
11/6/2018	
11/7/2018	
11/8/2018	277
3/12/2019	
3/13/2019	267
10/15/2019	
10/16/2019	218
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	188
9/22/2020	
9/23/2020	251
9/24/2020	
9/25/2020	

FIGURE E.

Trend Test Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 3:54 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Calcium (mg/L)	DGWA-53 (bg)	-5.213	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-71 (bg)	-0.9849	-35	-34	Yes	11	9.091	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-38	0.2409	39	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.3668	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4474	46	38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3438	-40	-38	Yes	12	25	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.262	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-3.602	-47	-38	Yes	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-53 (bg)	-26.46	-41	-38	Yes	12	0	n/a	n/a	0.01	NP

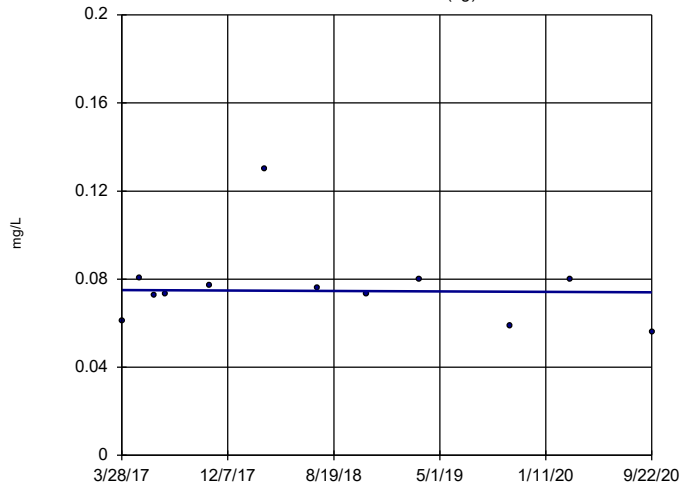
Trend Test Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 3:54 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	DGWA-53 (bg)	-0.0003249	-5	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-70A (bg)	0	1	38	No	12	50	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-71 (bg)	-0.00009656	-1	-34	No	11	18.18	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-37	-0.07542	-17	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-38	-0.00343	-2	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-39	-0.04541	-18	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-40	-0.02133	-23	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-67	0.07599	30	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-68A	-0.08493	-21	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-53 (bg)	-5.213	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-70A (bg)	-0.1112	-19	-38	No	12	8.333	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-71 (bg)	-0.9849	-35	-34	Yes	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-37	0.01881	1	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-38	4.727	34	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-39	1.118	10	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-40	1.329	20	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-67	0.5957	14	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-68A	0.619	12	38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-53 (bg)	-0.2527	-40	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-70A (bg)	-0.08248	-13	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-71 (bg)	-0.07123	-11	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-37	-0.1399	-20	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-38	0.2409	39	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.3668	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-40	-0.08192	-9	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4474	46	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-69	0.4041	29	43	No	13	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-53 (bg)	0.031	4	53	No	15	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-70A (bg)	0.004574	2	48	No	14	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-71 (bg)	0.06107	33	53	No	15	0	n/a	n/a	0.01	NP
pH (SU)	DGWC-40	-0.03104	-22	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-53 (bg)	-2.258	-20	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3438	-40	-38	Yes	12	25	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.262	-49	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-37	-4.184	-30	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-38	-6.806	-17	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-39	-25.77	-36	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-40	-10.08	-23	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-67	0	-5	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-3.602	-47	-38	Yes	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-53 (bg)	-26.46	-41	-38	Yes	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-70A (bg)	0	0	38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-71 (bg)	-5.475	-26	-38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-38	12.73	24	38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-39	-11.95	-19	-38	No	12	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-40	6.266	13	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-67	-3.218	-4	-38	No	12	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

DGWA-53 (bg)



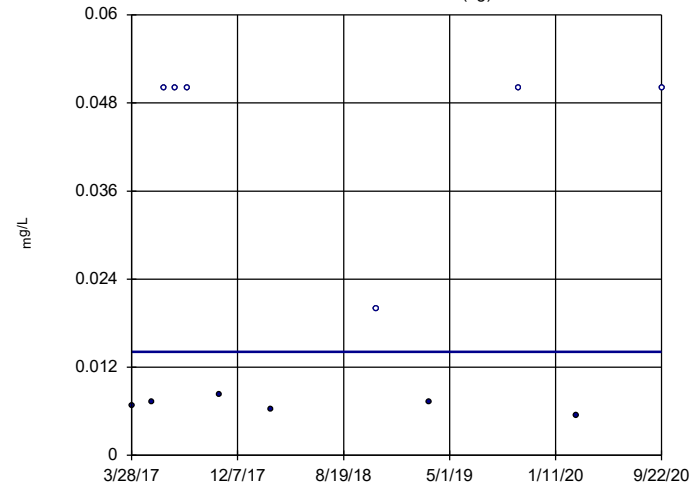
n = 12
 Slope = -0.0003249
 units per year.
 Mann-Kendall
 statistic = -5
 critical = -38
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Hollow symbols indicate censored values.

Sen's Slope Estimator

DGWA-70A (bg)



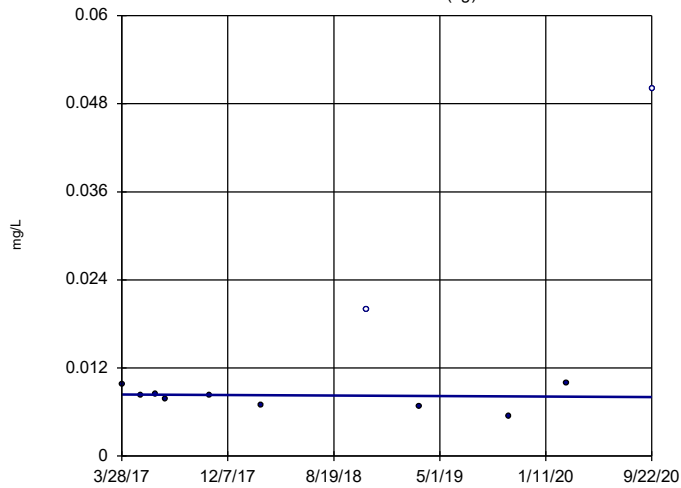
n = 12
 Slope = 0
 units per year.
 Mann-Kendall
 statistic = 1
 critical = 38
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Hollow symbols indicate censored values.

Sen's Slope Estimator

DGWA-71 (bg)

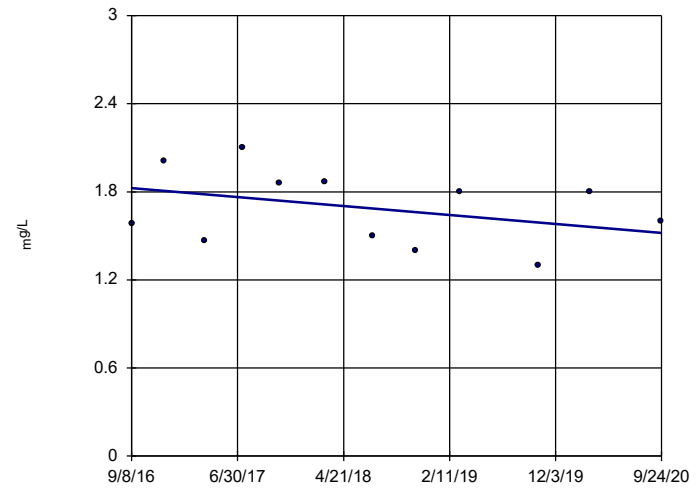


n = 11
 Slope = -0.00009656
 units per year.
 Mann-Kendall
 statistic = -1
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

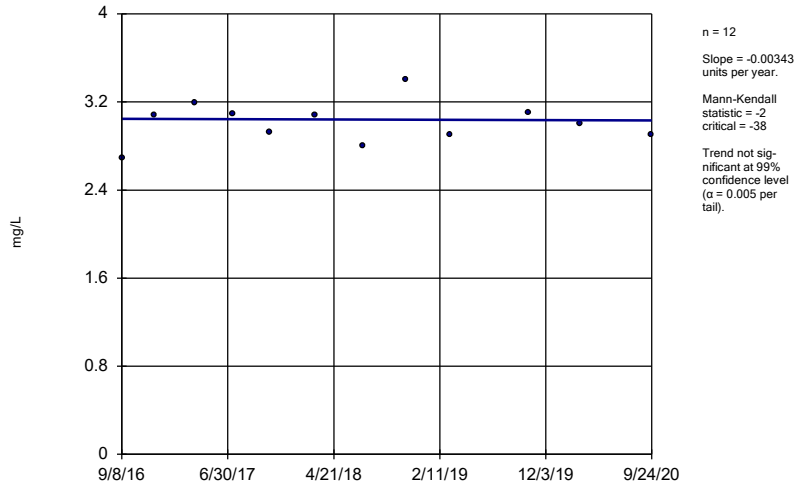
DGWC-37



n = 12
 Slope = -0.07542
 units per year.
 Mann-Kendall
 statistic = -17
 critical = -38
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

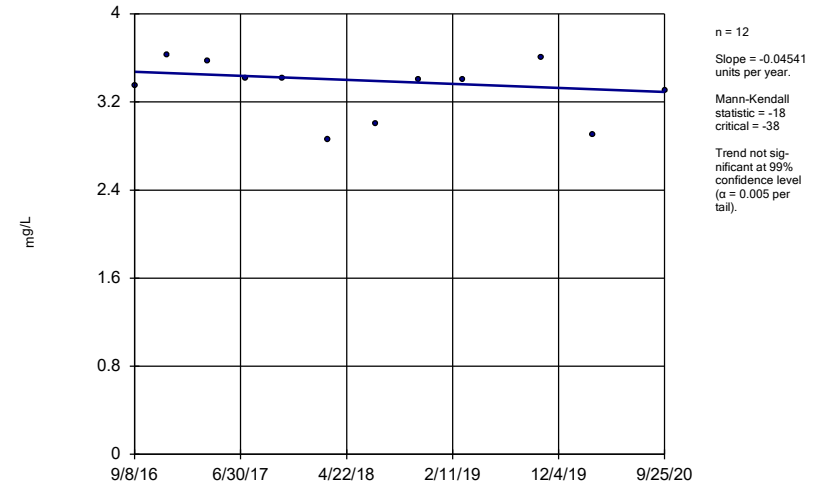
Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-38



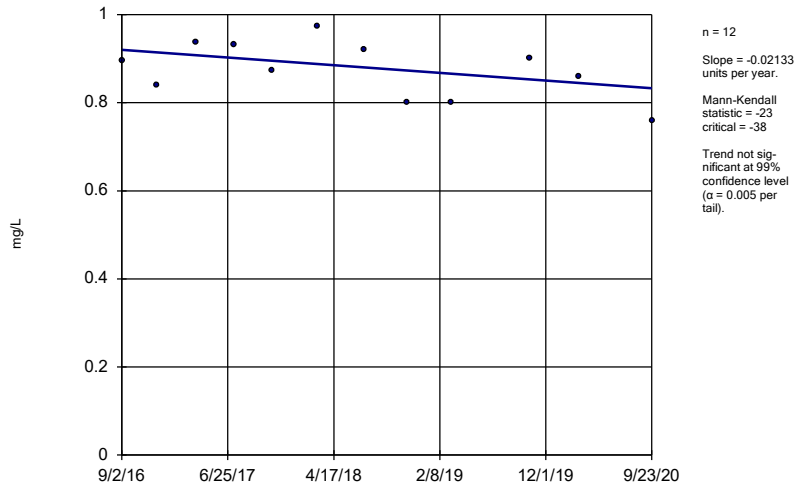
Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-39



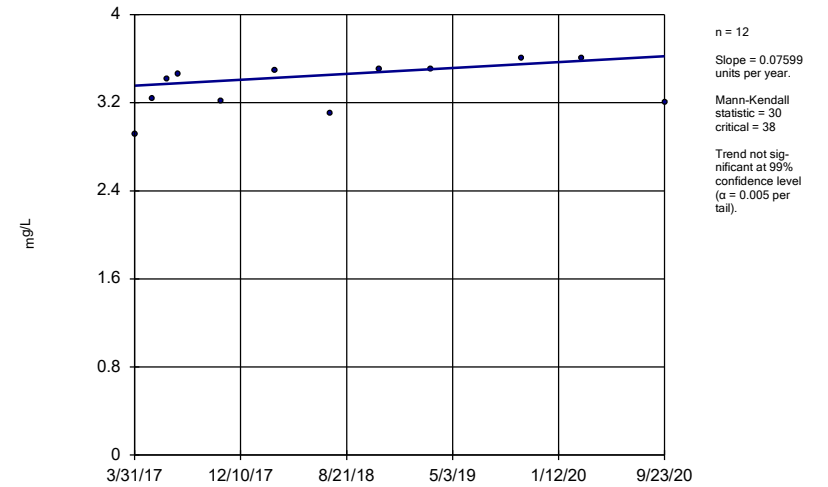
Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-40



Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

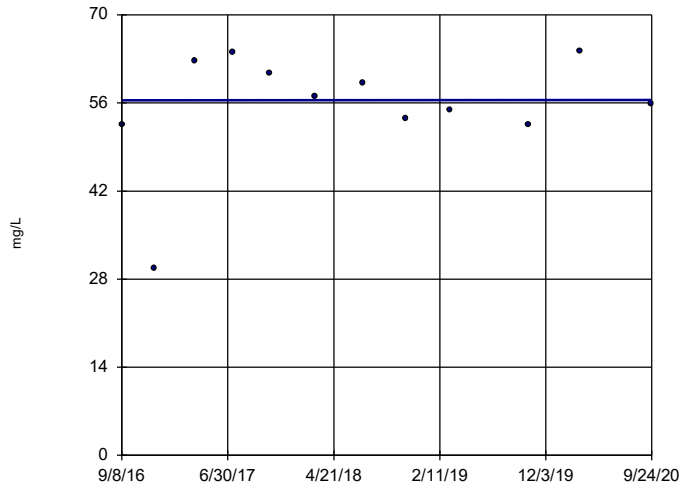
Sen's Slope Estimator
DGWC-67



Constituent: Boron Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-37

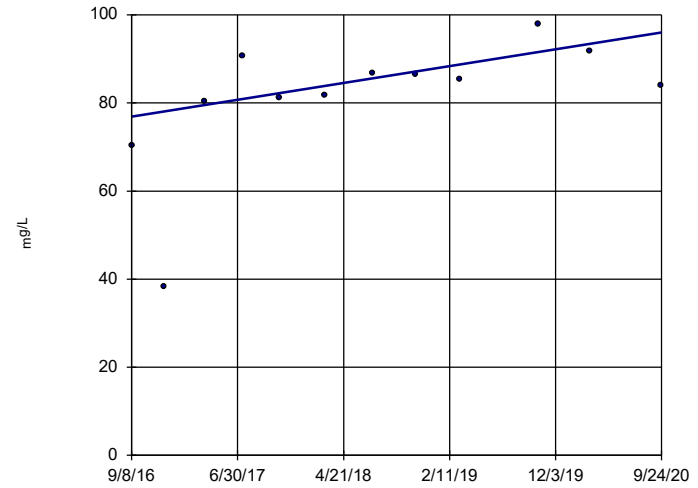


n = 12
 Slope = 0.01881 units per year.
 Mann-Kendall statistic = 1
 critical = 38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-38

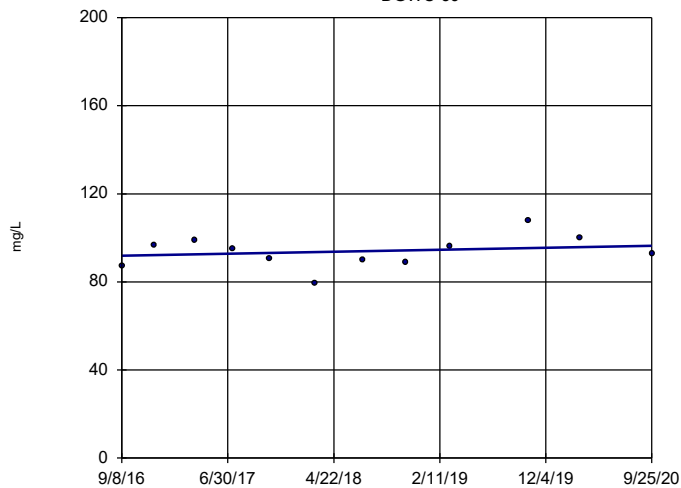


n = 12
 Slope = 4.727 units per year.
 Mann-Kendall statistic = 34
 critical = 38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-39

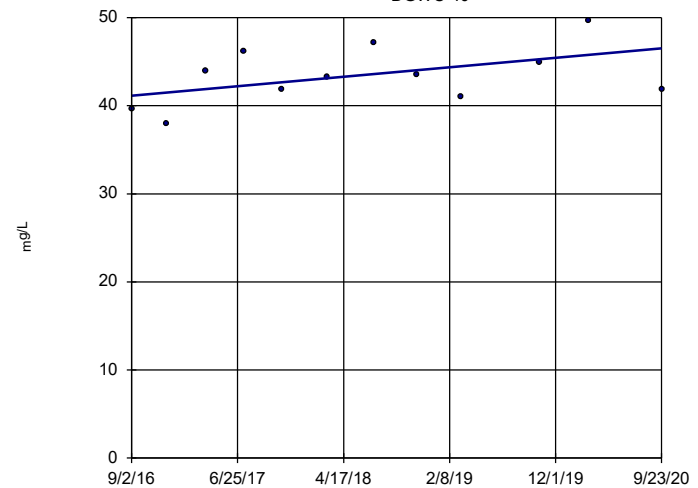


n = 12
 Slope = 1.118 units per year.
 Mann-Kendall statistic = 10
 critical = 38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-40

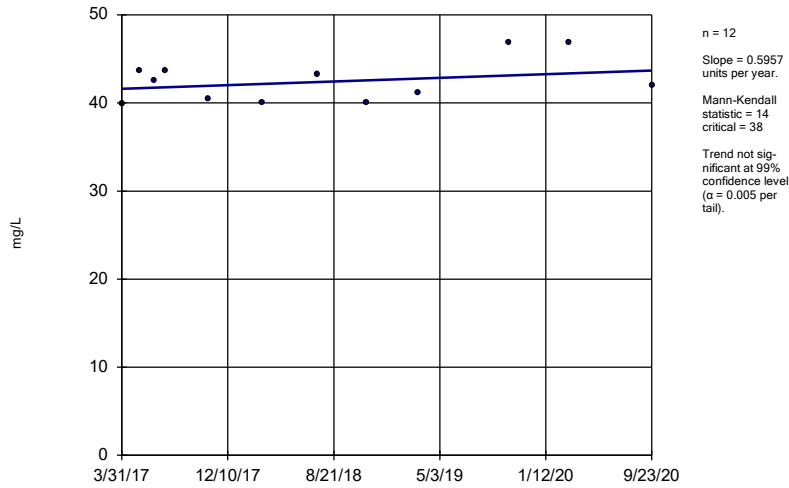


n = 12
 Slope = 1.329 units per year.
 Mann-Kendall statistic = 20
 critical = 38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

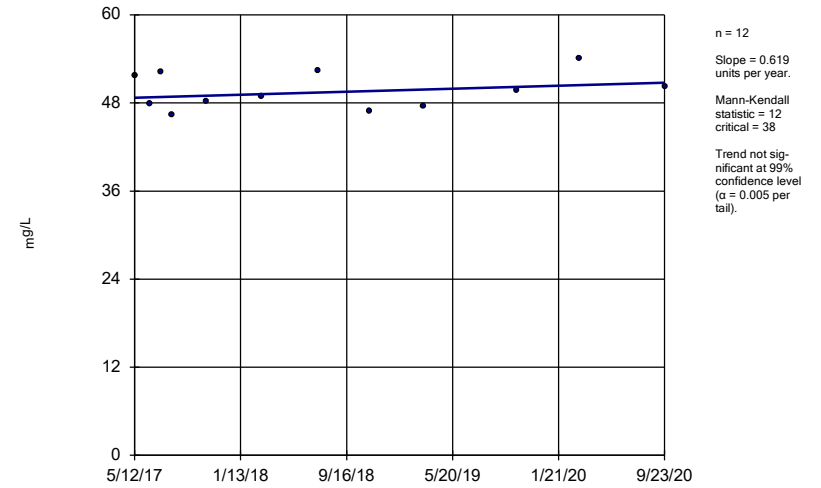
DGWC-67



Constituent: Calcium Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

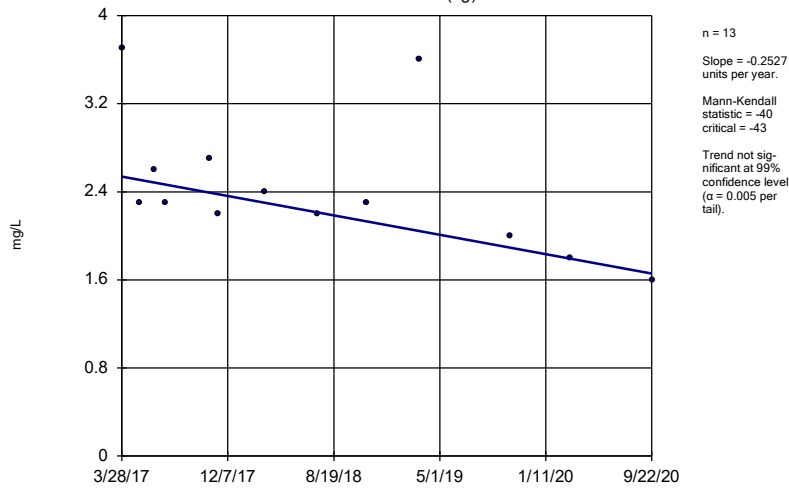
DGWC-68A



Constituent: Calcium Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

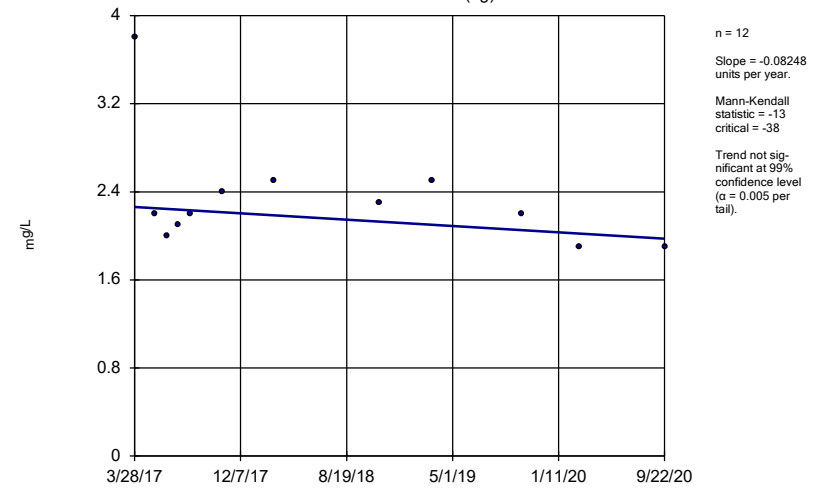
DGWA-53 (bg)



Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

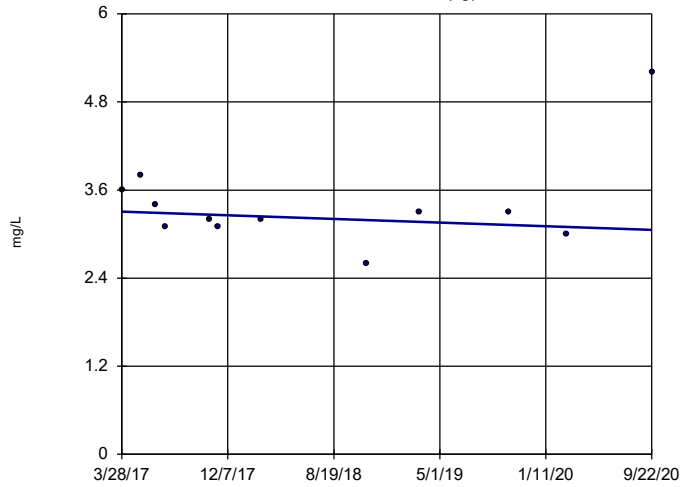
DGWA-70A (bg)



Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWA-71 (bg)

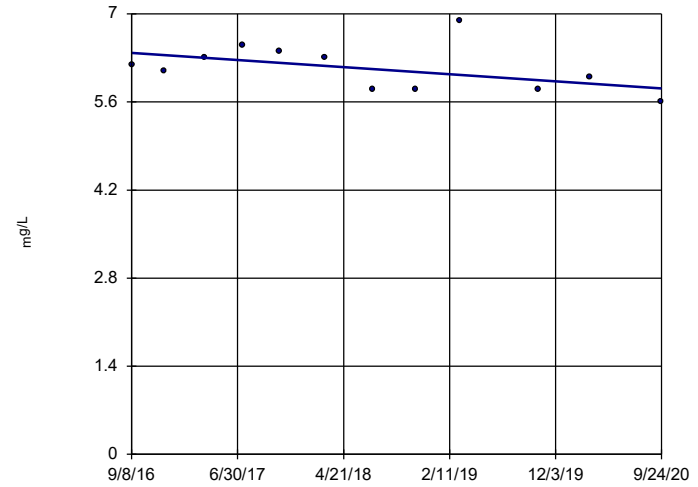


n = 12
 Slope = -0.07123 units per year.
 Mann-Kendall statistic = -11
 critical = -38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-37

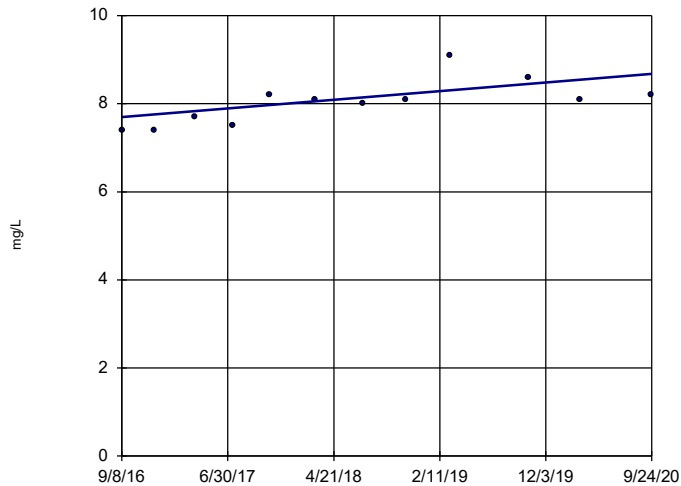


n = 12
 Slope = -0.1399 units per year.
 Mann-Kendall statistic = -20
 critical = -38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-38

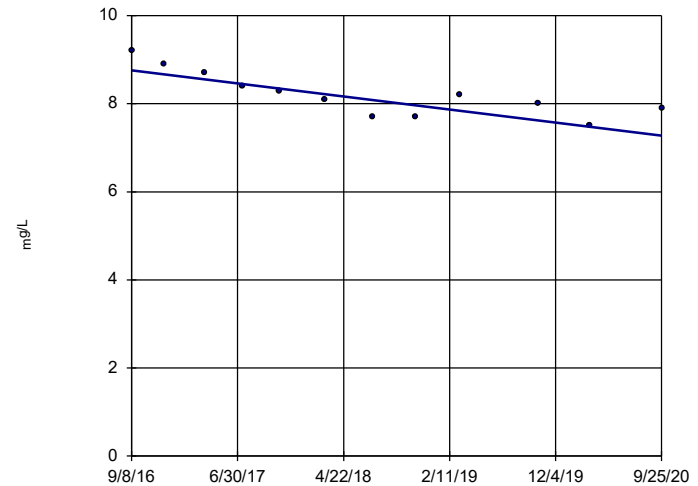


n = 12
 Slope = 0.2409 units per year.
 Mann-Kendall statistic = 39
 critical = 38
 Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-39

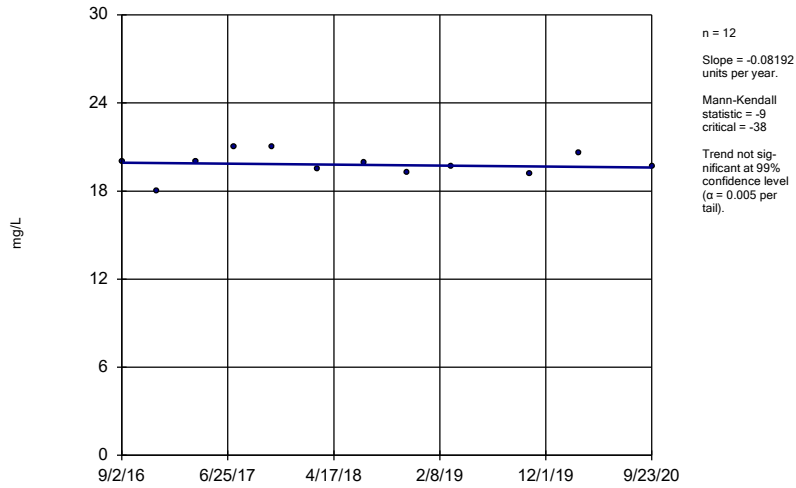


n = 12
 Slope = -0.3668 units per year.
 Mann-Kendall statistic = -49
 critical = -38
 Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

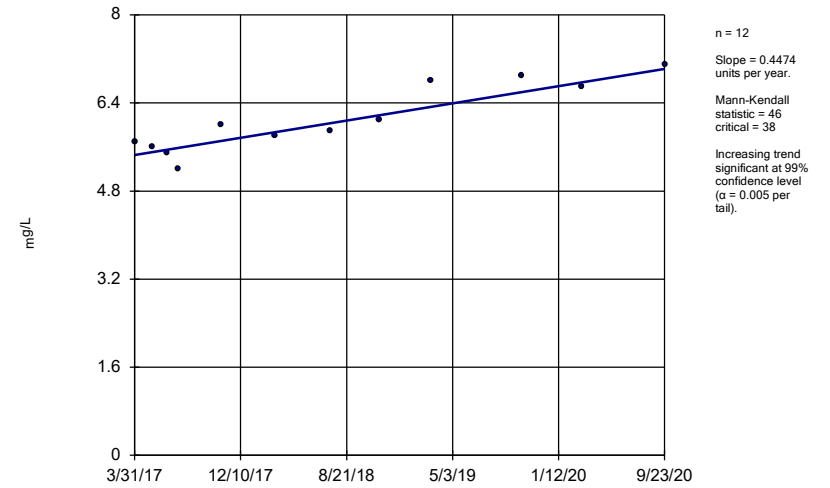
DGWC-40



Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

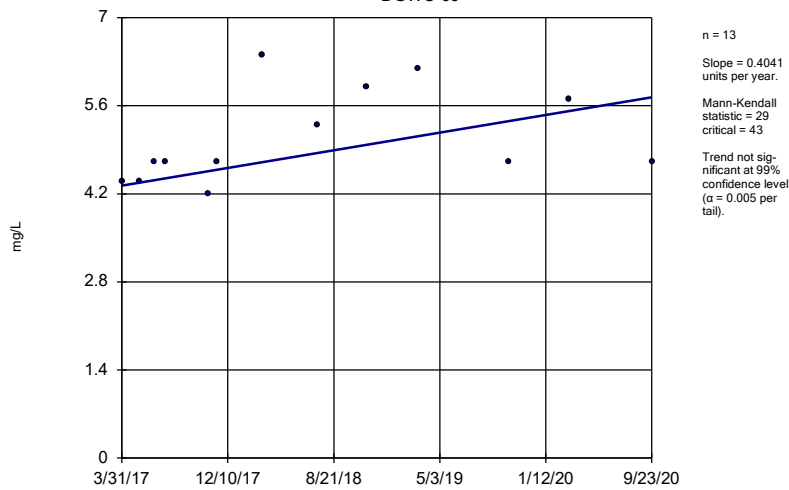
DGWC-67



Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

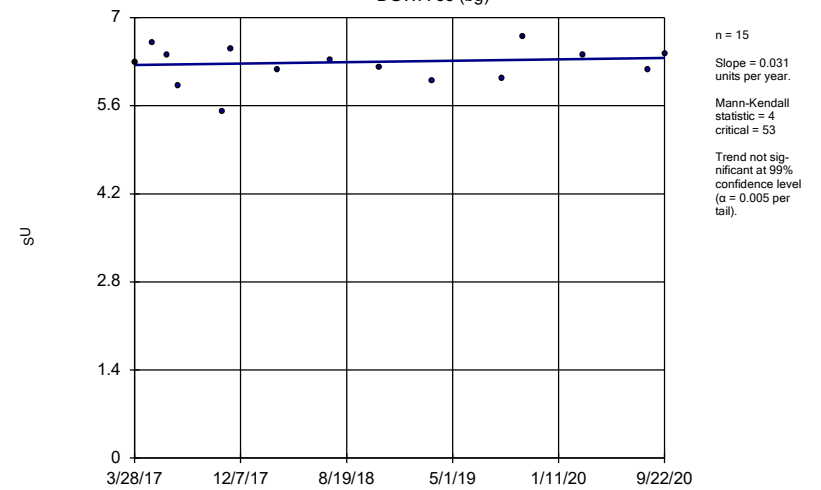
DGWC-69



Constituent: Chloride Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

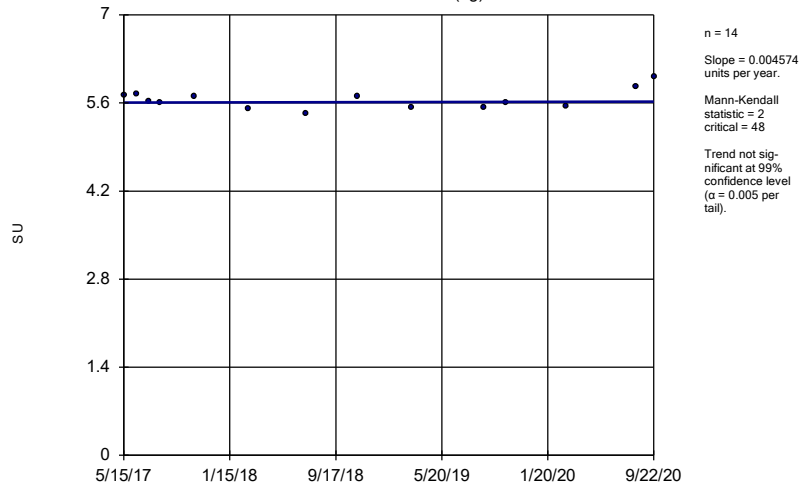
DGWA-53 (bg)



Constituent: pH Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

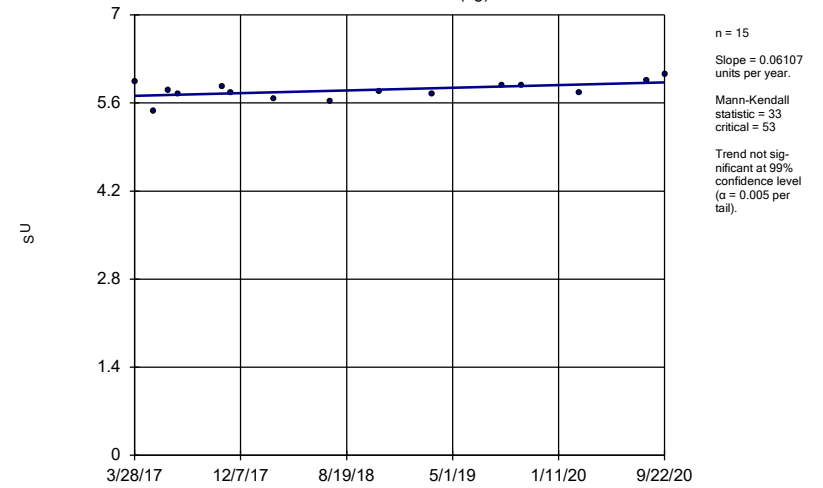
DGWA-70A (bg)



Constituent: pH Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

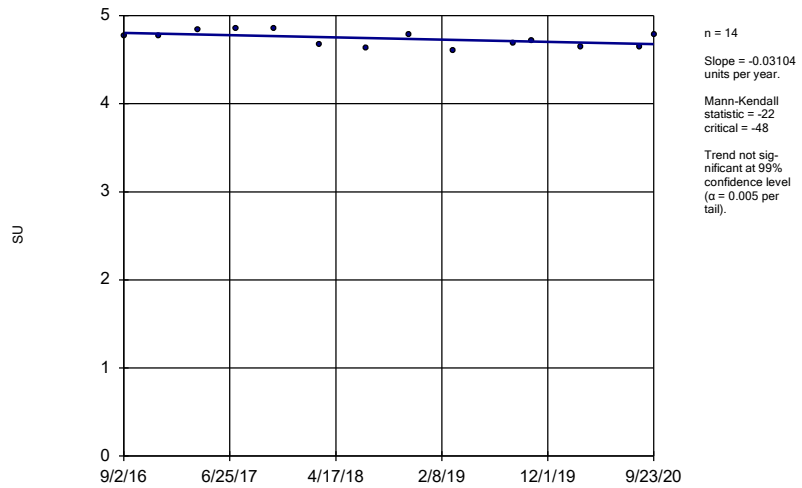
DGWA-71 (bg)



Constituent: pH Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

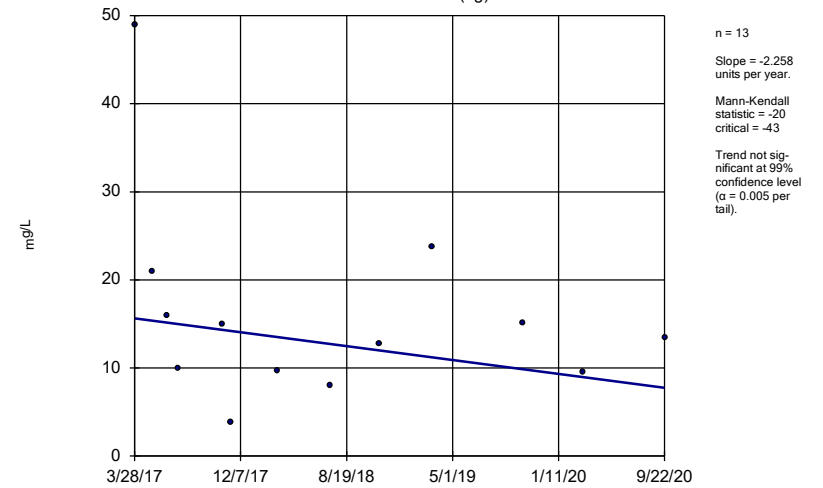
DGWC-40



Constituent: pH Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

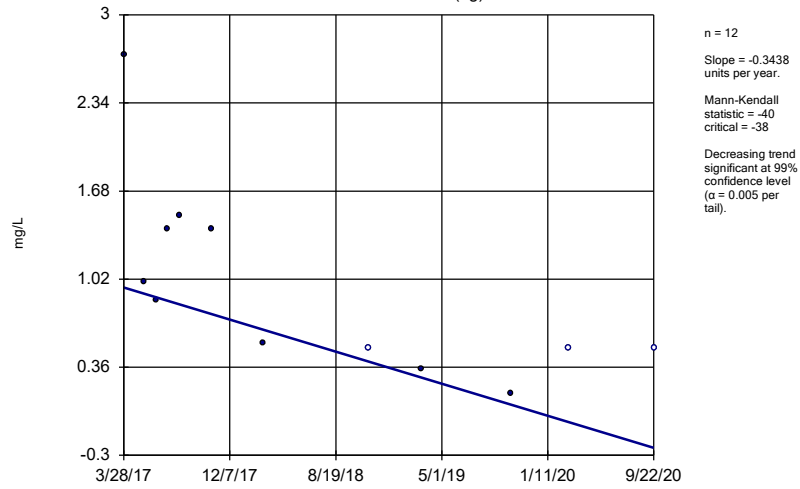
Sen's Slope Estimator

DGWA-53 (bg)



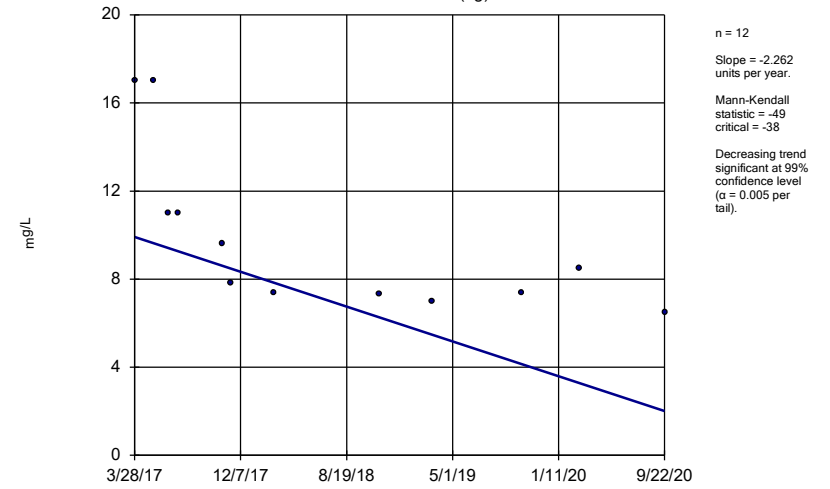
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
 DGWA-70A (bg)



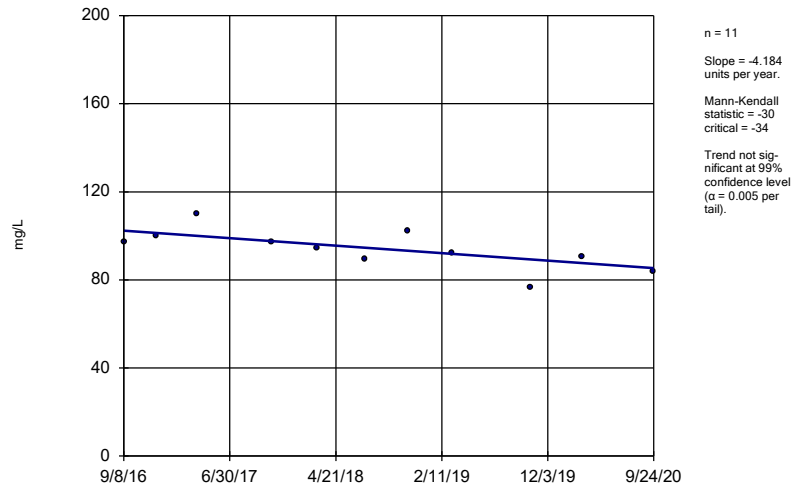
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
 DGWA-71 (bg)



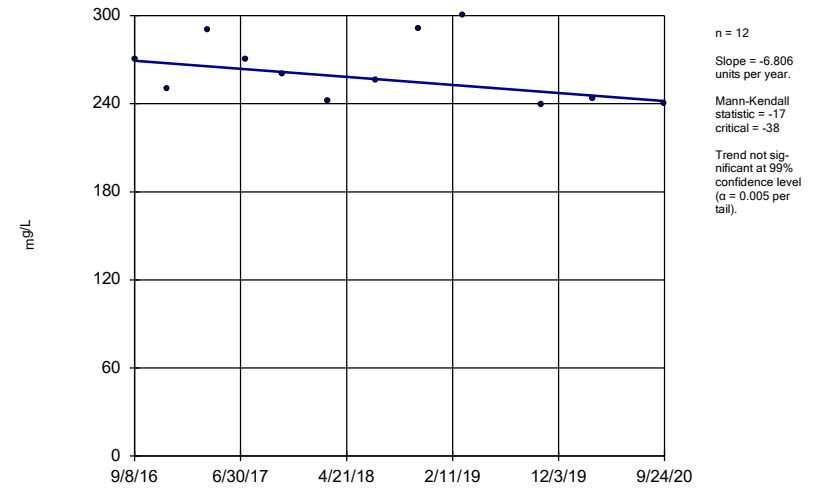
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
 DGWC-37



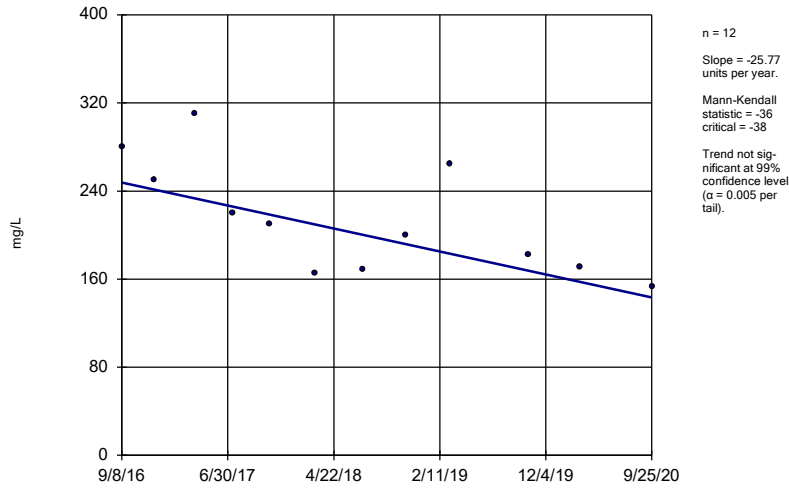
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
 DGWC-38



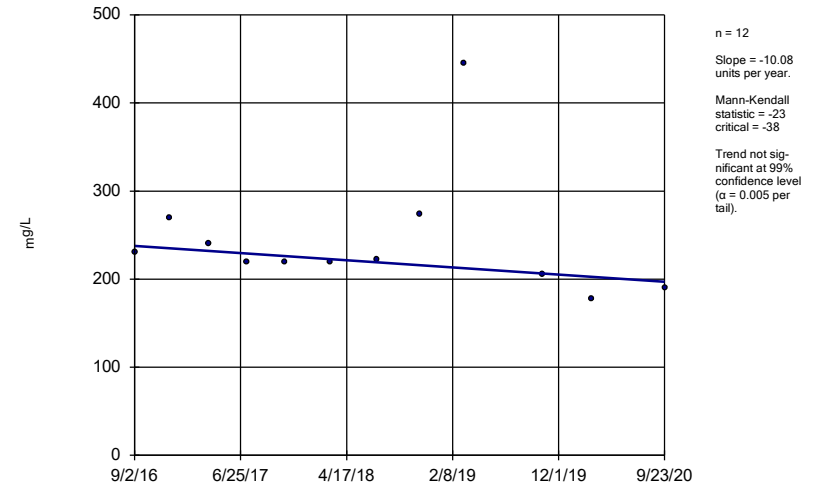
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-39



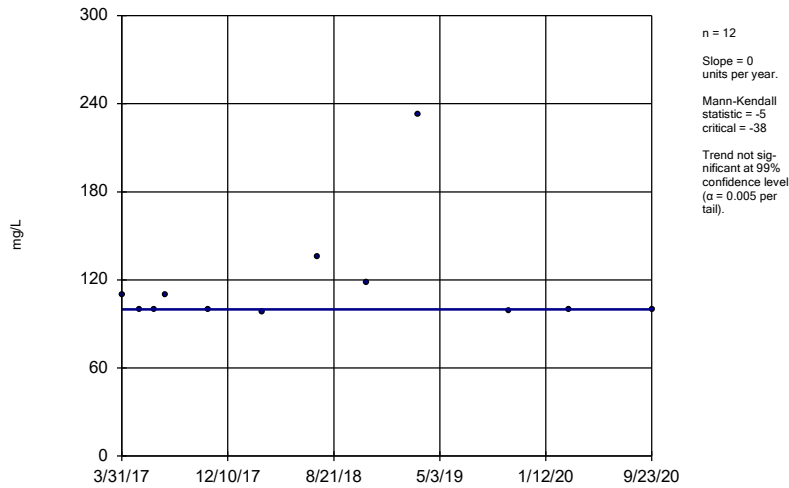
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-40



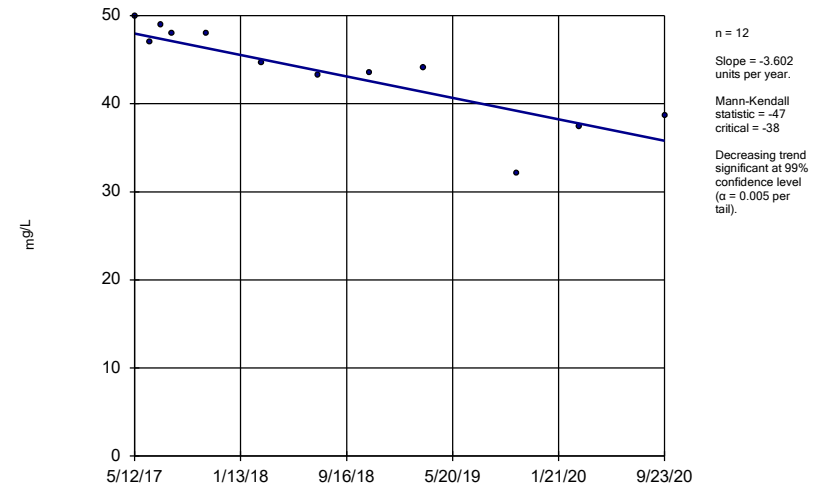
Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-67



Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

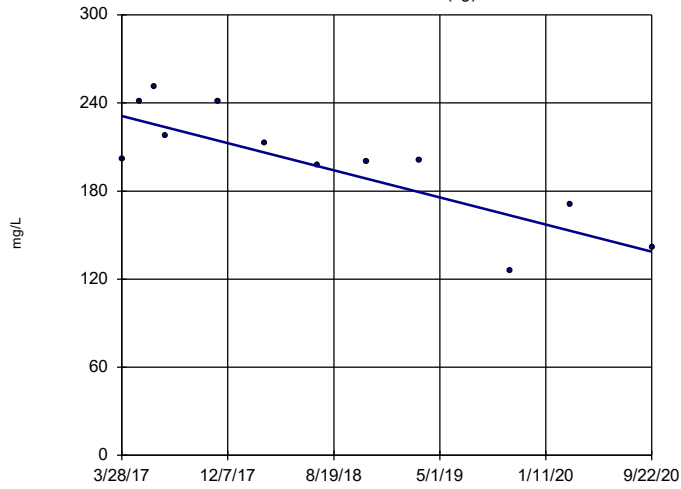
Sen's Slope Estimator
DGWC-68A



Constituent: Sulfate Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
Plant McDonough Client: Southern Company Data: McDonough AP

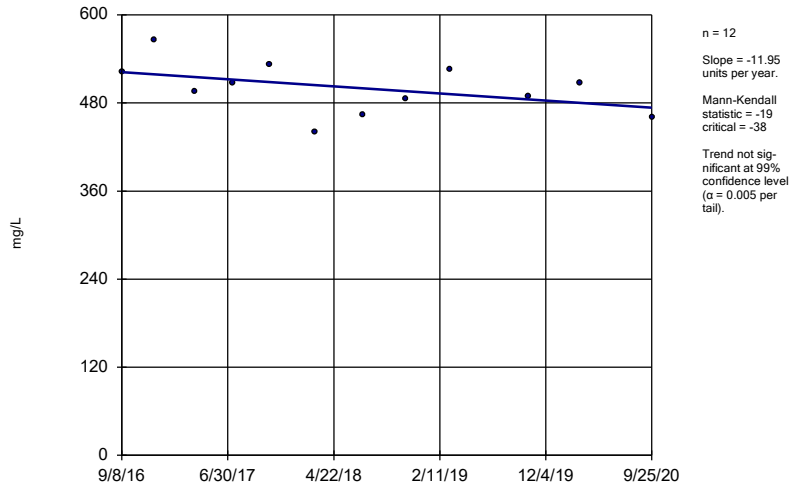
Sen's Slope Estimator

DGWA-53 (bg)



Sen's Slope Estimator

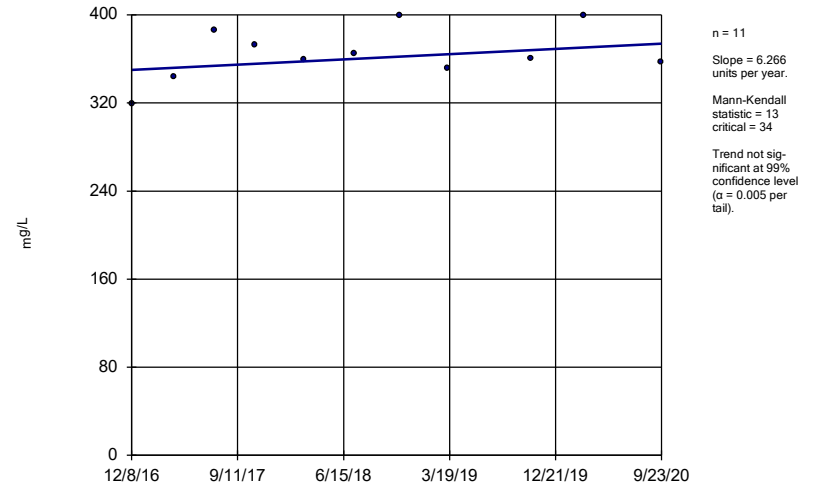
DGWC-39



Constituent: TDS Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

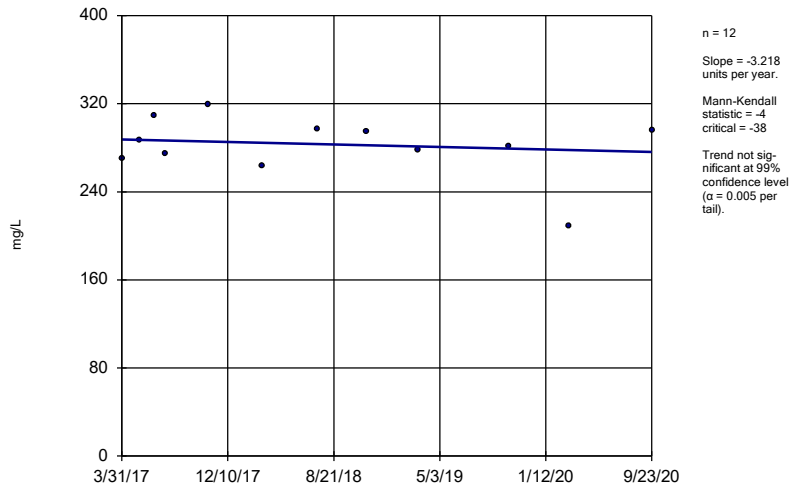
DGWC-40



Constituent: TDS Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-67



Constituent: TDS Analysis Run 10/29/2020 3:51 PM View: Trend Tests - Federal
 Plant McDonough Client: Southern Company Data: McDonough AP

FIGURE F.

Tolerance Limit Summary Table

Plant McDonough Client: Southern Company Data: McDonough AP Printed 11/4/2020, 3:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.0030	38	n/a	n/a	81.58	n/a	n/a	0.1424	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.0050	38	n/a	n/a	78.95	n/a	n/a	0.1424	NP Inter(NDs)
Barium (mg/L)	n/a	0.19	38	n/a	n/a	0	n/a	n/a	0.1424	NP Inter(normality)
Beryllium (mg/L)	n/a	0.0030	38	n/a	n/a	73.68	n/a	n/a	0.1424	NP Inter(normality)
Cadmium (mg/L)	n/a	0.0025	38	n/a	n/a	92.11	n/a	n/a	0.1424	NP Inter(NDs)
Chromium (mg/L)	n/a	0.010	37	n/a	n/a	54.05	n/a	n/a	0.1499	NP Inter(normality)
Cobalt (mg/L)	n/a	0.07	38	-5.867	1.496	31.58	Kaplan-Meier	ln(x)	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	n/a	5.9	40	1.062	0.3514	0	None	x^(1/3)	0.05	Inter
Fluoride (mg/L)	n/a	0.42	42	n/a	n/a	50	n/a	n/a	0.116	NP Inter(normality)
Lead (mg/L)	n/a	0.0050	38	n/a	n/a	76.32	n/a	n/a	0.1424	NP Inter(NDs)
Lithium (mg/L)	n/a	0.030	38	n/a	n/a	36.84	n/a	n/a	0.1424	NP Inter(normality)
Mercury (mg/L)	n/a	0.00050	38	n/a	n/a	89.47	n/a	n/a	0.1424	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.041	38	n/a	n/a	63.16	n/a	n/a	0.1424	NP Inter(normality)
Selenium (mg/L)	n/a	0.010	38	n/a	n/a	100	n/a	n/a	0.1424	NP Inter(NDs)
Thallium (mg/L)	n/a	0.0010	38	n/a	n/a	94.74	n/a	n/a	0.1424	NP Inter(NDs)

FIGURE G.

MCDONOUGH AP-1 GWPS TABLE					
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01	0.01
Barium, Total (mg/L)	2		0.19	2	2
Beryllium, Total (mg/L)	0.004		0.003	0.004	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005	0.005
Chromium, Total (mg/L)	0.1		0.01	0.1	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.032	0.032	0.032
Combined Radium, Total (pCi/L)	5		5.92	5.92	5.92
Fluoride, Total (mg/L)	4		0.42	4	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.041	0.1	0.041
Selenium, Total (mg/L)	0.05		0.01	0.05	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002	0.002

**Highlighted cells indicated Background is higher than MCLs or CCR-Rule Specified levels.*

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

FIGURE H.

Federal Confidence Interval Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	ln(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.1	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)

Federal Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-37	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-38	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-39	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-40	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No 12	0.002542	0.0009327	75	None	No	0.01	NP (normality)
Antimony (mg/L)	DGWC-68A	0.003	0.0008	0.006	No 12	0.002817	0.0006351	91.67	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.0019	0.006	No 13	0.002738	0.0006838	84.62	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.0019	0.01	No 13	0.004762	0.0008598	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.0005	0.01	No 13	0.004654	0.001248	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No 13	0.002714	0.002209	46.15	None	No	0.01	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No 13	0.004027	0.001853	76.92	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.00042	0.01	No 13	0.004648	0.00127	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-68A	0.005	0.005	0.01	No 13	0.005	0	100	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	In(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1138	0.09252	2	No 13	0.1032	0.0143	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03369	0.03234	2	No 13	0.03302	0.0009091	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09753	0.08432	2	No 13	0.09092	0.008879	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01815	0.0169	2	No 13	0.01752	0.0008408	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.1131	0.1014	2	No 13	0.1072	0.007854	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-68A	0.09052	0.08674	2	No 13	0.08863	0.00254	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1065	0.07028	2	No 14	0.08841	0.0256	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No 13	0.002103	0.0014	69.23	None	No	0.01	NP (normality)
Beryllium (mg/L)	DGWC-38	0.003	0.000058	0.004	No 13	0.002774	0.000816	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-39	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003353	0.002862	0.004	No 13	0.003108	0.0003303	7.692	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-67	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-68A	0.003	0.000084	0.004	No 13	0.002776	0.0008088	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.000063	0.004	No 14	0.001952	0.001459	64.29	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-37	0.0025	0.0002	0.005	No 13	0.001782	0.001121	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No 13	0.0004915	0.000659	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-39	0.0025	0.0025	0.005	No 13	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No 13	0.0009608	0.0004698	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00017	0.005	No 13	0.001785	0.001116	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No 13	0.00114	0.001141	46.15	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No 14	0.001834	0.001094	71.43	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-37	0.01	0.0007	0.1	No 13	0.00856	0.003515	84.62	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No 13	0.007835	0.004115	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-39	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No 13	0.004332	0.004667	38.46	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No 13	0.007852	0.004082	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.0005	0.1	No 13	0.009269	0.002635	92.31	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No 14	0.008056	0.003865	78.57	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0005	0.032	No 13	0.003931	0.002032	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0014	0.032	No 13	0.002462	0.00246	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-39	0.0071	0.0059	0.032	No 13	0.006623	0.001171	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.0064	0.0013	0.032	No 13	0.003346	0.002605	15.38	None	No	0.01	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.032	No 13	0.004023	0.001875	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0016	0.032	No 14	0.003643	0.001755	57.14	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.167	0.4891	5.92	No 13	0.8278	0.4555	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.017	0.4363	5.92	No 13	0.7268	0.3906	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.426	0.6196	5.92	No 13	1.023	0.5424	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.577	0.5261	5.92	No 13	1.051	0.7064	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9464	0.4432	5.92	No 13	0.6948	0.3384	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.445	0.5348	5.92	No 13	0.9897	0.6118	0	None	No	0.01	Param.

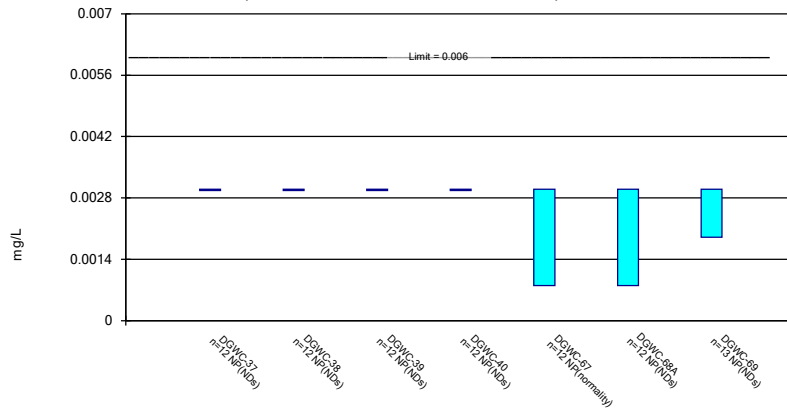
Federal Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.838	1.093	5.92	No 14	1.465	0.526	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.21	0.054	4	No 14	0.1059	0.08236	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-38	0.23	0.057	4	No 14	0.1303	0.1187	14.29	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-39	0.33	0.085	4	No 14	0.1649	0.1261	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-40	0.3518	0.134	4	No 14	0.2539	0.1665	7.143	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.07	0.03	4	No 14	0.092	0.1301	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-68A	0.15	0.082	4	No 14	0.1321	0.07898	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.1918	0.09644	4	No 15	0.1441	0.07038	6.667	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.015	No 13	0.004343	0.001626	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.015	No 13	0.00349	0.002357	69.23	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-39	0.005	0.00022	0.015	No 13	0.004254	0.001822	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.015	No 13	0.002375	0.002531	46.15	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-67	0.005	0.000056	0.015	No 13	0.003861	0.002164	76.92	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-68A	0.005	0.00035	0.015	No 13	0.004642	0.00129	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.015	No 14	0.003251	0.002436	64.29	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.04	No 13	0.01085	0.01329	30.77	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0029	0.04	No 13	0.005315	0.00742	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-39	0.03	0.03	0.04	No 13	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-40	0.0027	0.0021	0.04	No 13	0.006546	0.01041	15.38	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.04	No 13	0.006592	0.007043	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.0016	0.04	No 13	0.02782	0.007877	92.31	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.04	No 14	0.004843	0.007249	7.143	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0005	0.00006	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0005	0.00007	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0005	0.000059	0.002	No 13	0.0004661	0.0001223	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0005	0.000045	0.002	No 13	0.0003984	0.0001934	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0005	0.00007	0.002	No 14	0.0004693	0.0001149	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-37	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.001	0.1	No 13	0.005875	0.004637	53.85	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-39	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-40	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-67	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.1	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-69	0.01331	0.006682	0.1	No 14	0.01065	0.00614	7.143	None	ln(x)	0.01	Param.
Selenium (mg/L)	DGWC-37	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-38	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-39	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-40	0.01	0.0018	0.05	No 13	0.004638	0.003361	23.08	None	No	0.01	NP (normality)
Selenium (mg/L)	DGWC-67	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-68A	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-69	0.01	0.01	0.05	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-37	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 13	0.0004623	0.000443	38.46	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 13	0.0006485	0.0004629	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-40	0.001	0.000068	0.002	No 13	0.0006406	0.0004732	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-67	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.00015	0.002	No 13	0.0009346	0.0002357	92.31	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-69	0.001	0.001	0.002	No 14	0.001	0	100	None	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

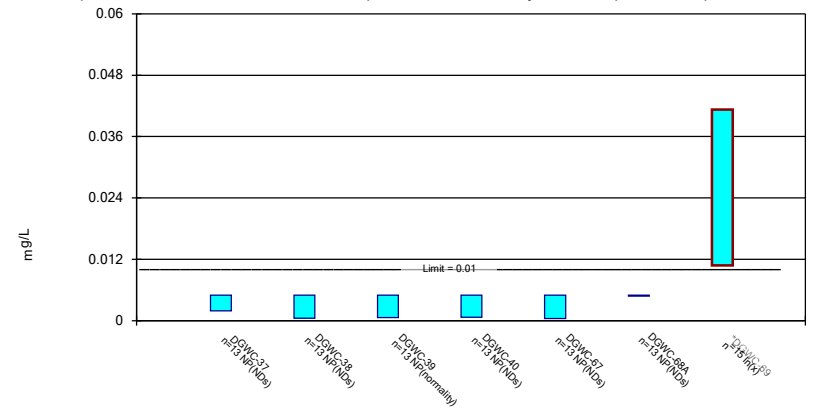
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

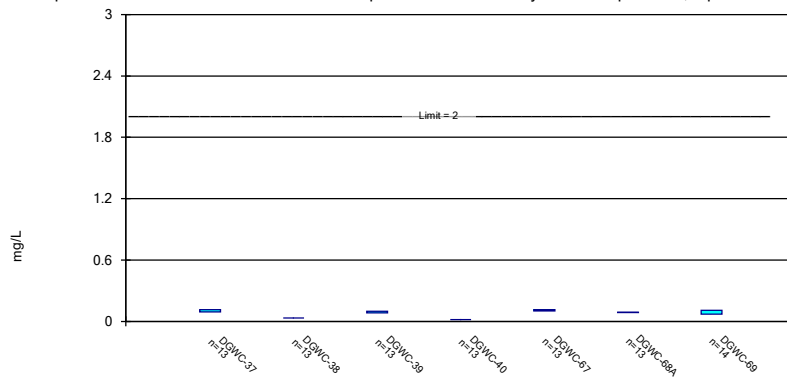
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric Confidence Interval

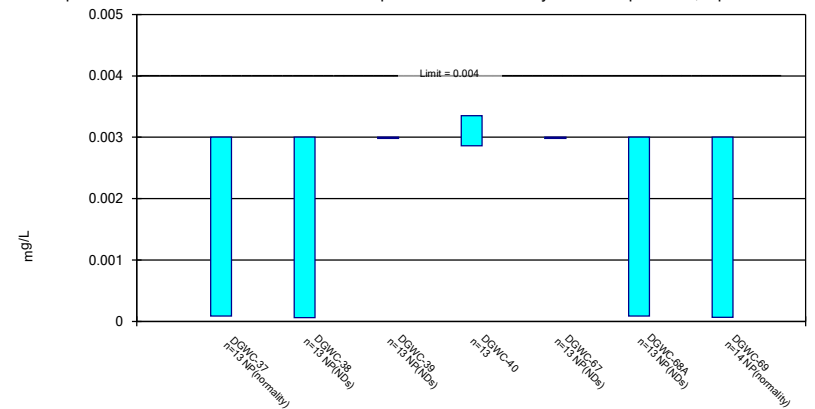
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

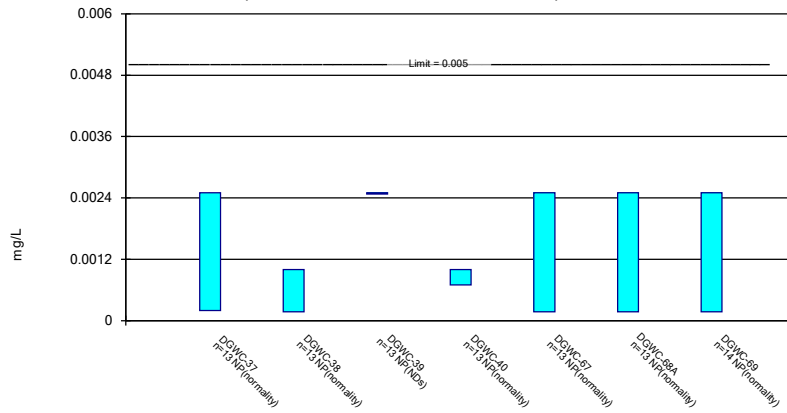
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

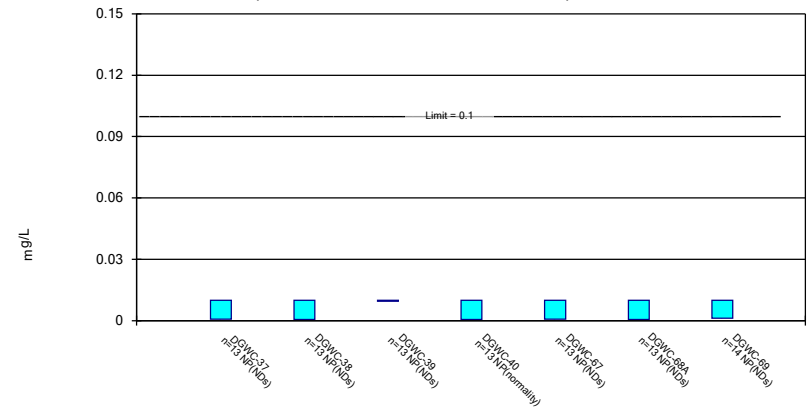
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

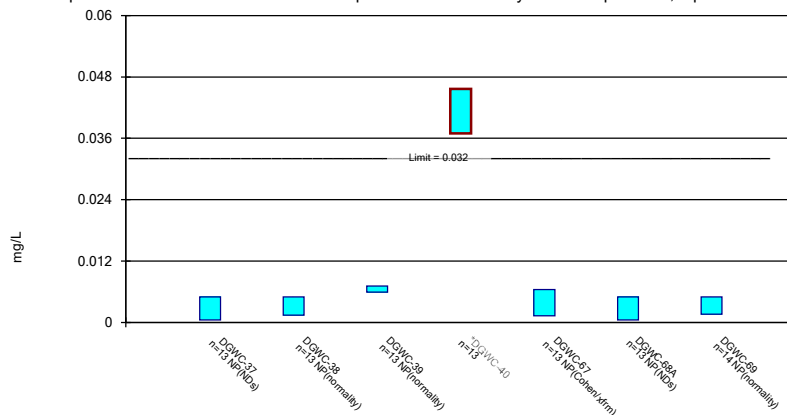
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

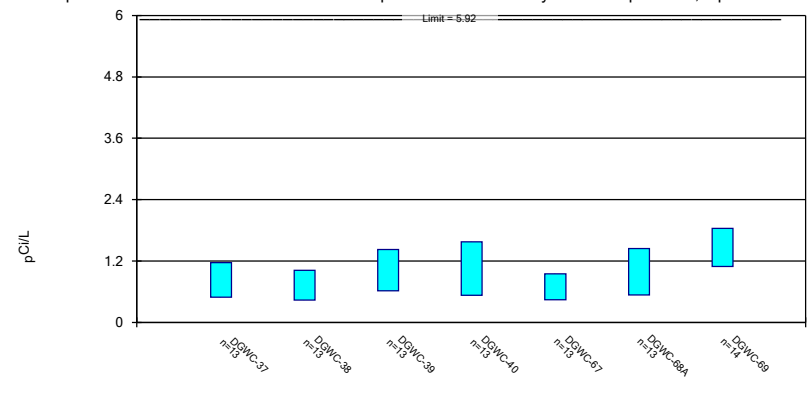
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric Confidence Interval

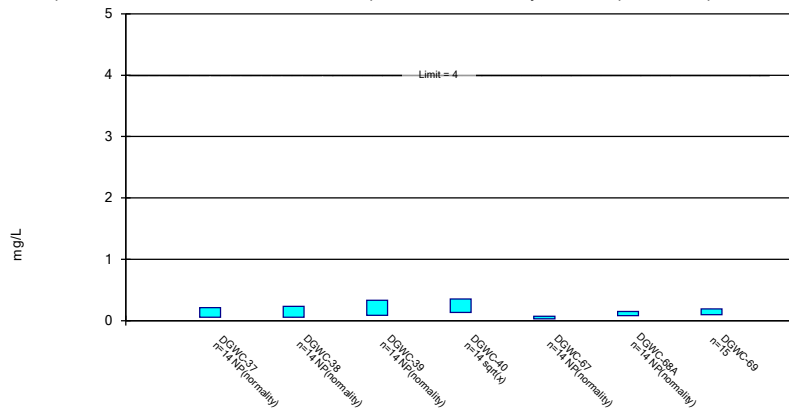
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals -
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

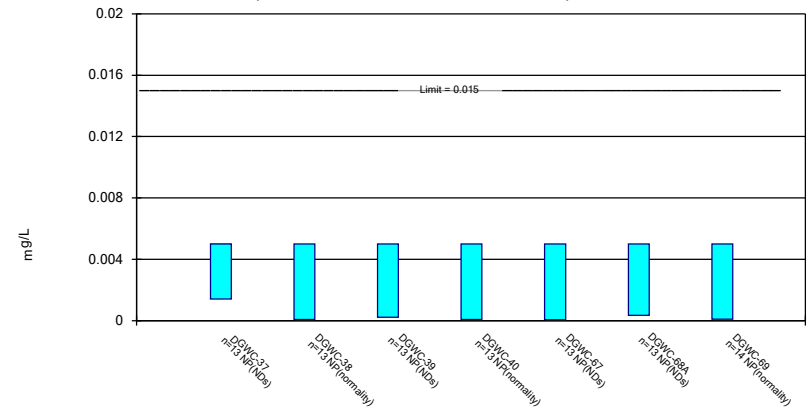
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

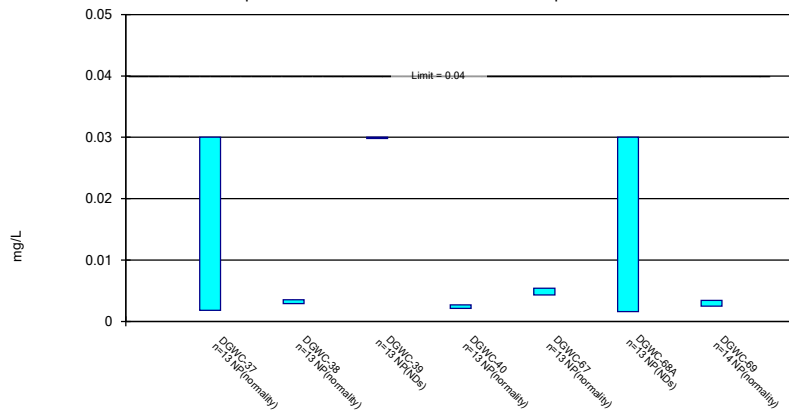
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

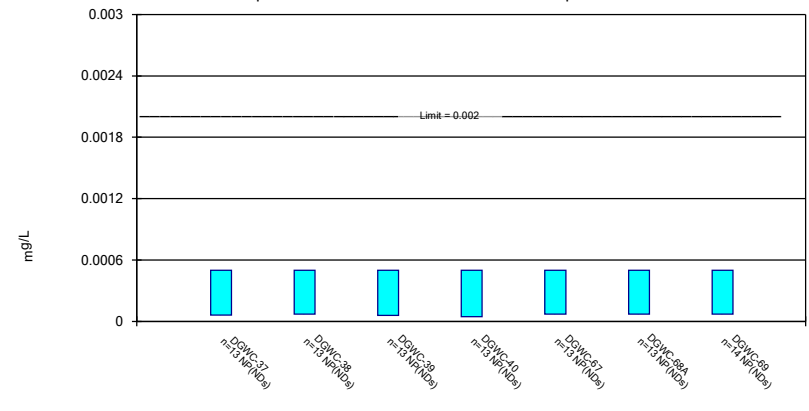
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lithium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

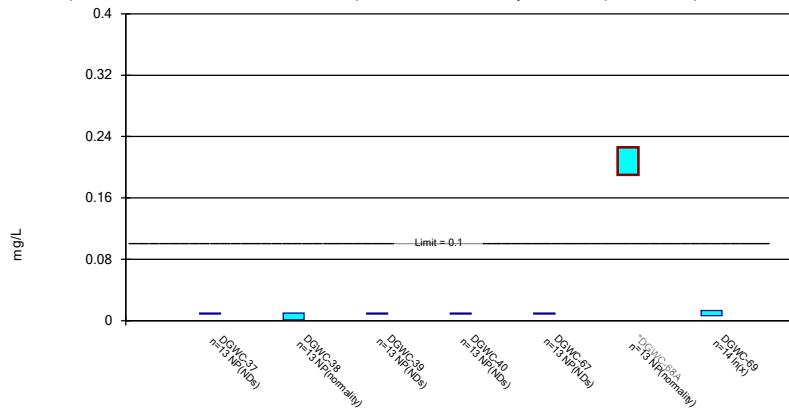
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

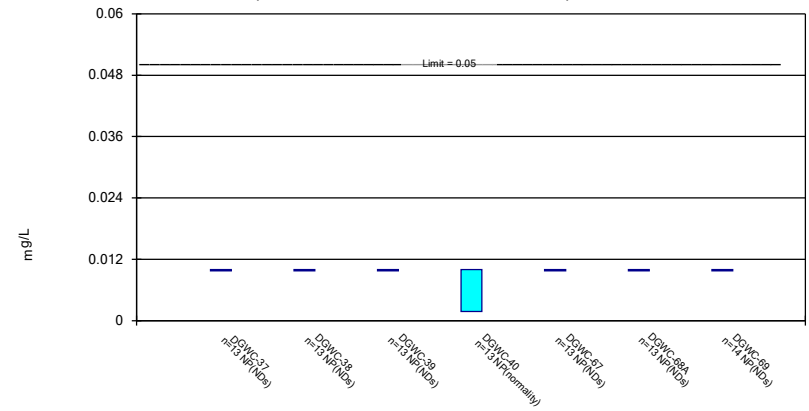
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

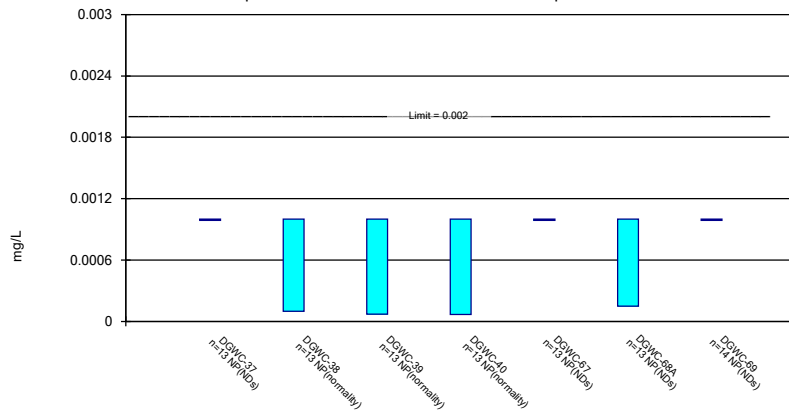
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 10/29/2020 3:58 PM View: Confidence Intervals - AP-1
 Plant McDonough Client: Southern Company Data: McDonough AP

FIGURE I.

State Confidence Interval Summary - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:04 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	ln(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.041	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)

State Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:04 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-37	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-38	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-39	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-40	0.003	0.003	0.006	No 12	0.003	0	100	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No 12	0.002542	0.0009327	75	None	No	0.01	NP (normality)
Antimony (mg/L)	DGWC-68A	0.003	0.0008	0.006	No 12	0.002817	0.0006351	91.67	None	No	0.01	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.0019	0.006	No 13	0.002738	0.0006838	84.62	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.0019	0.01	No 13	0.004762	0.0008598	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.0005	0.01	No 13	0.004654	0.001248	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No 13	0.002714	0.002209	46.15	None	No	0.01	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No 13	0.004027	0.001853	76.92	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.00042	0.01	No 13	0.004648	0.00127	92.31	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-68A	0.005	0.005	0.01	No 13	0.005	0	100	None	No	0.01	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04128	0.01078	0.01	Yes 15	0.03475	0.0442	0	None	In(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1138	0.09252	2	No 13	0.1032	0.0143	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03369	0.03234	2	No 13	0.03302	0.0009091	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09753	0.08432	2	No 13	0.09092	0.008879	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01815	0.0169	2	No 13	0.01752	0.0008408	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.1131	0.1014	2	No 13	0.1072	0.007854	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-68A	0.09052	0.08674	2	No 13	0.08863	0.00254	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1065	0.07028	2	No 14	0.08841	0.0256	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No 13	0.002103	0.0014	69.23	None	No	0.01	NP (normality)
Beryllium (mg/L)	DGWC-38	0.003	0.000058	0.004	No 13	0.002774	0.000816	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-39	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003353	0.002862	0.004	No 13	0.003108	0.0003303	7.692	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-67	0.003	0.003	0.004	No 13	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-68A	0.003	0.000084	0.004	No 13	0.002776	0.0008088	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.000063	0.004	No 14	0.001952	0.001459	64.29	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-37	0.0025	0.0002	0.005	No 13	0.001782	0.001121	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No 13	0.0004915	0.000659	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-39	0.0025	0.0025	0.005	No 13	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No 13	0.0009608	0.0004698	15.38	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00017	0.005	No 13	0.001785	0.001116	69.23	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No 13	0.00114	0.001141	46.15	None	No	0.01	NP (normality)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No 14	0.001834	0.001094	71.43	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-37	0.01	0.0007	0.1	No 13	0.00856	0.003515	84.62	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No 13	0.007835	0.004115	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-39	0.01	0.01	0.1	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No 13	0.004332	0.004667	38.46	None	No	0.01	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No 13	0.007852	0.004082	76.92	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.0005	0.1	No 13	0.009269	0.002635	92.31	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No 14	0.008056	0.003865	78.57	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0005	0.032	No 13	0.003931	0.002032	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0014	0.032	No 13	0.002462	0.00246	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-39	0.0071	0.0059	0.032	No 13	0.006623	0.001171	15.38	None	No	0.01	NP (normality)
Cobalt (mg/L)	DGWC-40	0.04568	0.037	0.032	Yes 13	0.04134	0.005839	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.0064	0.0013	0.032	No 13	0.003346	0.002605	15.38	None	No	0.01	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.032	No 13	0.004023	0.001875	76.92	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0016	0.032	No 14	0.003643	0.001755	57.14	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.167	0.4891	5.92	No 13	0.8278	0.4555	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.017	0.4363	5.92	No 13	0.7268	0.3906	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.426	0.6196	5.92	No 13	1.023	0.5424	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.577	0.5261	5.92	No 13	1.051	0.7064	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9464	0.4432	5.92	No 13	0.6948	0.3384	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.445	0.5348	5.92	No 13	0.9897	0.6118	0	None	No	0.01	Param.

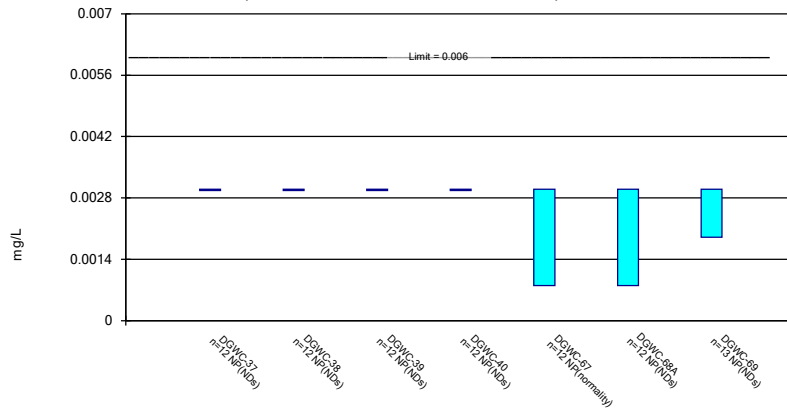
State Confidence Interval Summary - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 10/29/2020, 4:04 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.838	1.093	5.92	No 14	1.465	0.526	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.21	0.054	4	No 14	0.1059	0.08236	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-38	0.23	0.057	4	No 14	0.1303	0.1187	14.29	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-39	0.33	0.085	4	No 14	0.1649	0.1261	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-40	0.3518	0.134	4	No 14	0.2539	0.1665	7.143	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.07	0.03	4	No 14	0.092	0.1301	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-68A	0.15	0.082	4	No 14	0.1321	0.07898	7.143	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.1918	0.09644	4	No 15	0.1441	0.07038	6.667	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.005	No 13	0.004343	0.001626	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.005	No 13	0.00349	0.002357	69.23	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-39	0.005	0.00022	0.005	No 13	0.004254	0.001822	84.62	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.005	No 13	0.002375	0.002531	46.15	None	No	0.01	NP (normality)
Lead (mg/L)	DGWC-67	0.005	0.000056	0.005	No 13	0.003861	0.002164	76.92	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-68A	0.005	0.00035	0.005	No 13	0.004642	0.00129	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.005	No 14	0.003251	0.002436	64.29	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.03	No 13	0.01085	0.01329	30.77	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0029	0.03	No 13	0.005315	0.00742	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-39	0.03	0.03	0.03	No 13	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-40	0.0027	0.0021	0.03	No 13	0.006546	0.01041	15.38	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.03	No 13	0.006592	0.007043	7.692	None	No	0.01	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.0016	0.03	No 13	0.02782	0.007877	92.31	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.03	No 14	0.004843	0.007249	7.143	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0005	0.00006	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0005	0.00007	0.002	No 13	0.0003996	0.000191	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0005	0.000059	0.002	No 13	0.0004661	0.0001223	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0005	0.000045	0.002	No 13	0.0003984	0.0001934	76.92	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0005	0.00007	0.002	No 13	0.0004669	0.0001193	92.31	None	No	0.01	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0005	0.00007	0.002	No 14	0.0004693	0.0001149	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-37	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.001	0.041	No 13	0.005875	0.004637	53.85	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-39	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-40	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-67	0.01	0.01	0.041	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.226	0.19	0.041	Yes 13	0.2118	0.02249	0	None	No	0.01	NP (normality)
Molybdenum (mg/L)	DGWC-69	0.01331	0.006682	0.041	No 14	0.01065	0.00614	7.143	None	ln(x)	0.01	Param.
Selenium (mg/L)	DGWC-37	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-38	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-39	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-40	0.01	0.0018	0.05	No 13	0.004638	0.003361	23.08	None	No	0.01	NP (normality)
Selenium (mg/L)	DGWC-67	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-68A	0.01	0.01	0.05	No 13	0.01	0	100	None	No	0.01	NP (NDs)
Selenium (mg/L)	DGWC-69	0.01	0.01	0.05	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-37	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 13	0.0004623	0.000443	38.46	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 13	0.0006485	0.0004629	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-40	0.001	0.000068	0.002	No 13	0.0006406	0.0004732	61.54	None	No	0.01	NP (normality)
Thallium (mg/L)	DGWC-67	0.001	0.001	0.002	No 13	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.00015	0.002	No 13	0.0009346	0.0002357	92.31	None	No	0.01	NP (NDs)
Thallium (mg/L)	DGWC-69	0.001	0.001	0.002	No 14	0.001	0	100	None	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

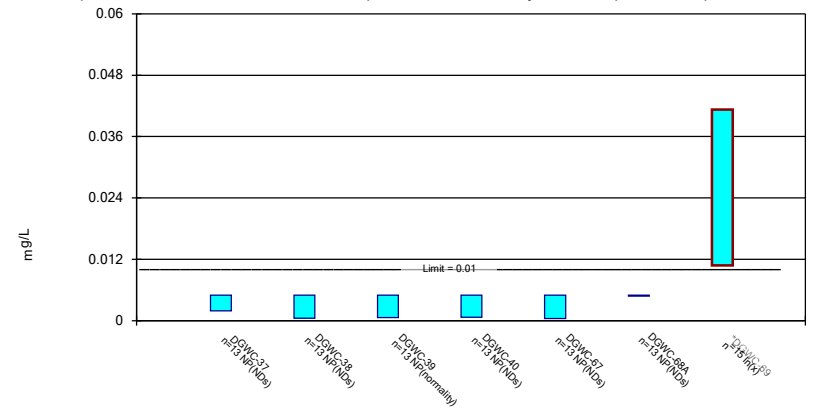
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Constituent: Antimony Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

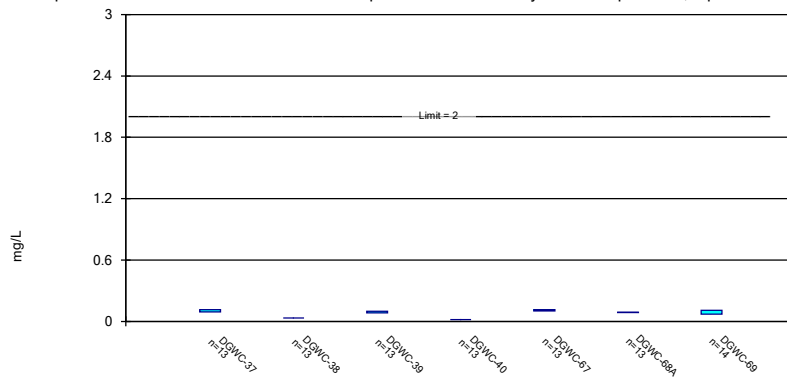
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric Confidence Interval

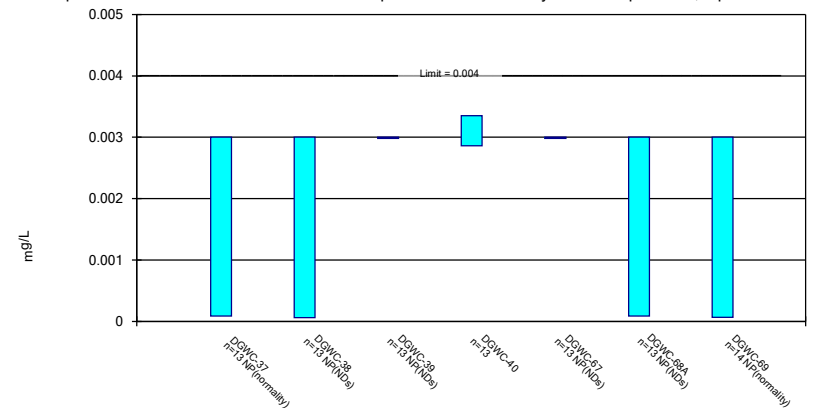
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

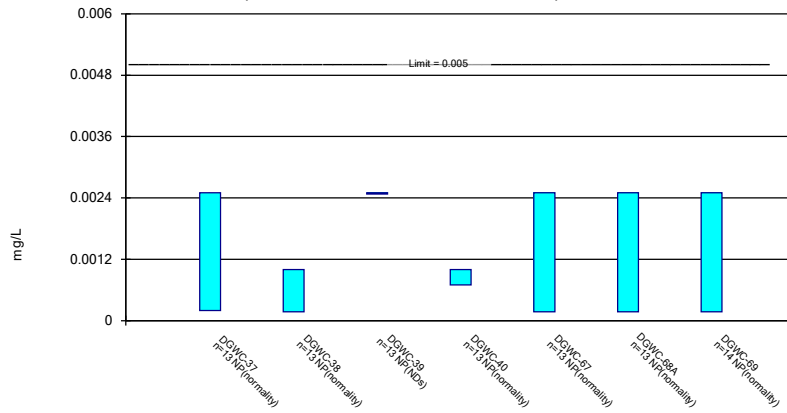
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Constituent: Beryllium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

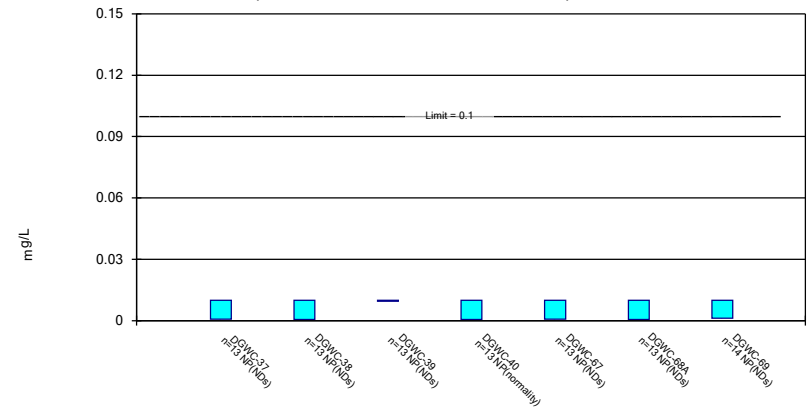
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Constituent: Cadmium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

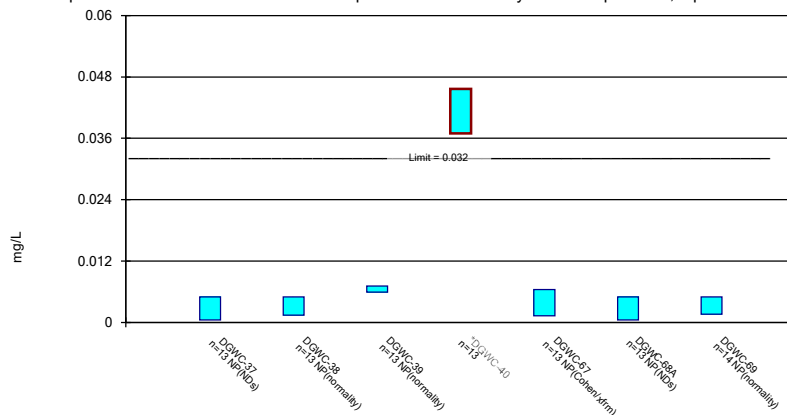
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Constituent: Chromium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

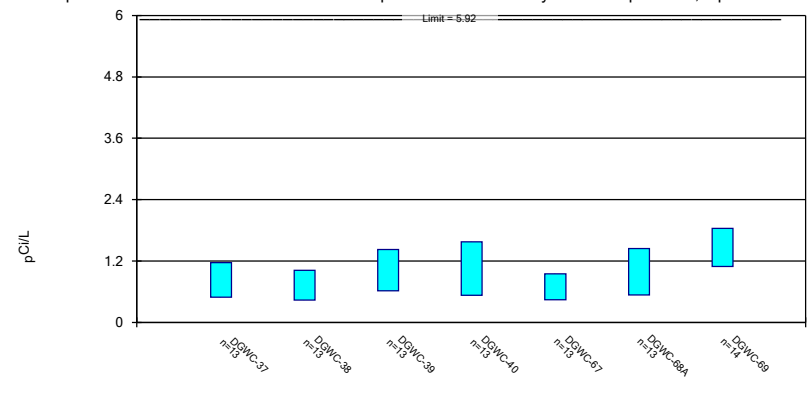
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric Confidence Interval

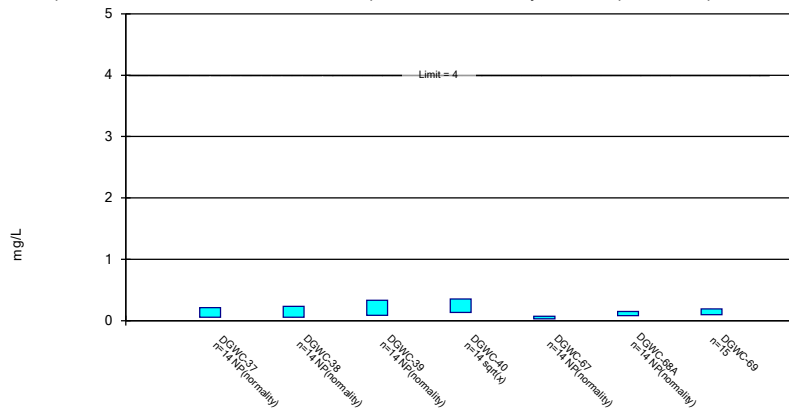
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Constituent: Combined Radium 226 + 228 Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals -
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

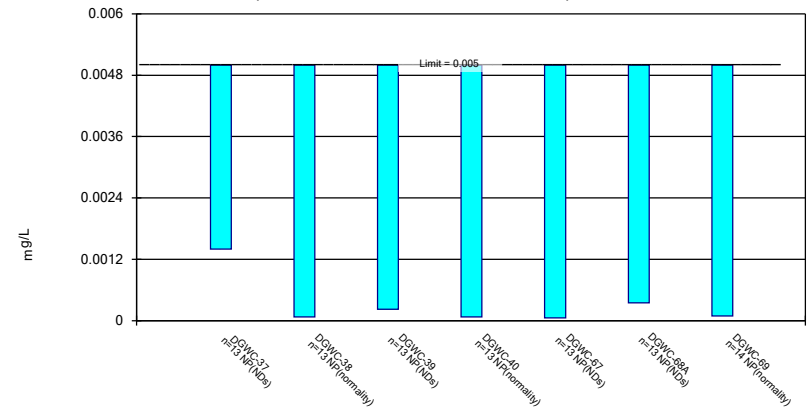
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Constituent: Fluoride Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

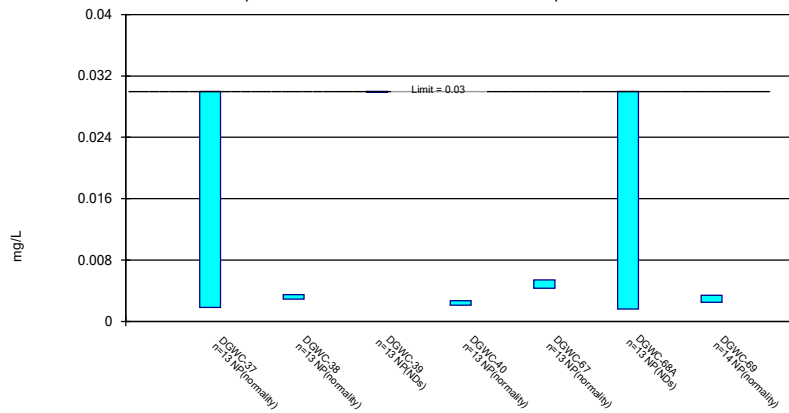
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Constituent: Lead Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

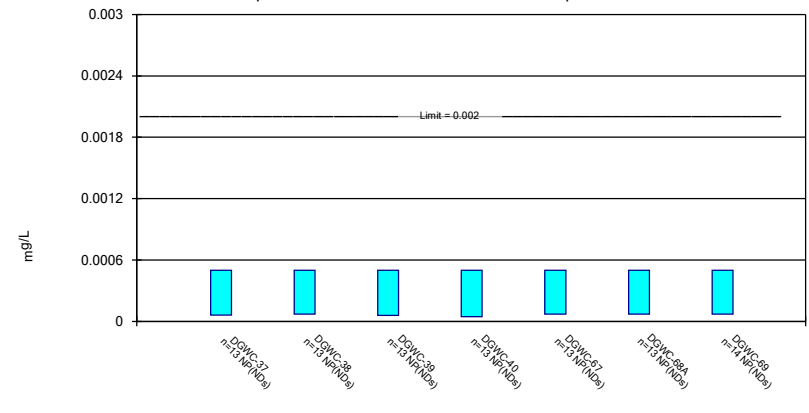
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Constituent: Lithium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

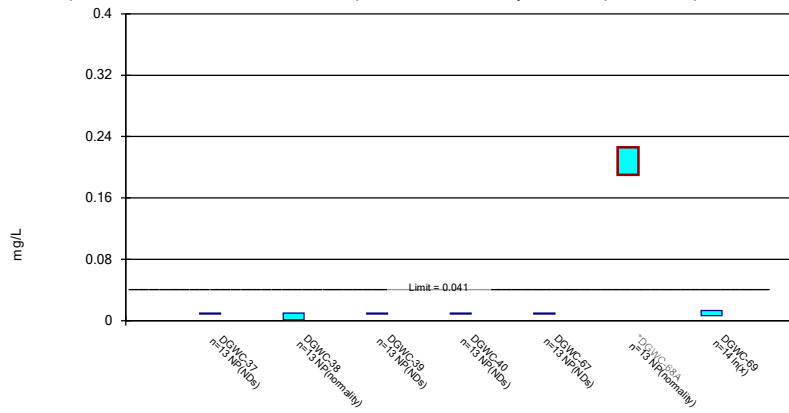
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Constituent: Mercury Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

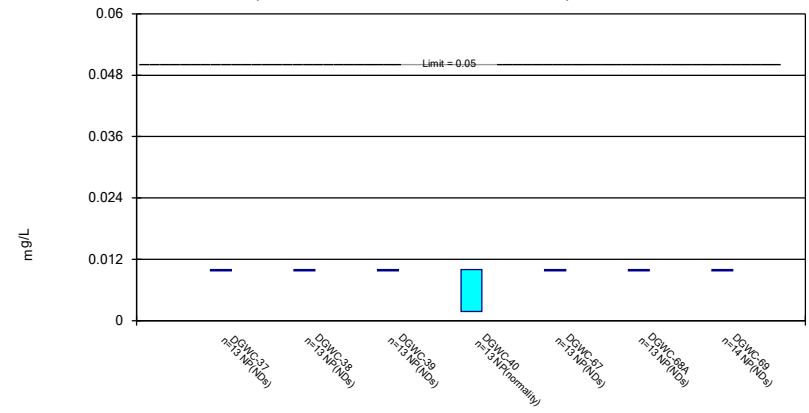
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

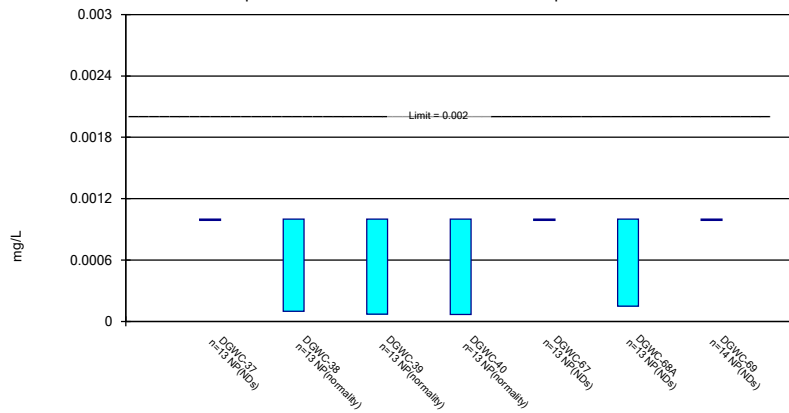
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 10/29/2020 4:02 PM View: Confidence Intervals - AP-1
Plant McDonough Client: Southern Company Data: McDonough AP

APPENDIX E

Semi-Annual Remedy Selection and Design Report



REPORT

Semi-Annual Remedy Selection and Design Progress Report

Plant McDonough-Atkinson Ash Pond 1

Submitted to:

Georgia Power Company

241 Ralph McGill Boulevard, Atlanta, Georgia 30308

Submitted by:

Golder Associates Inc.

5170 Peachtree Road Building 100 Suite 300, Atlanta, Georgia, USA 30341

+1 770 496-1893

166849618

February 26, 2021

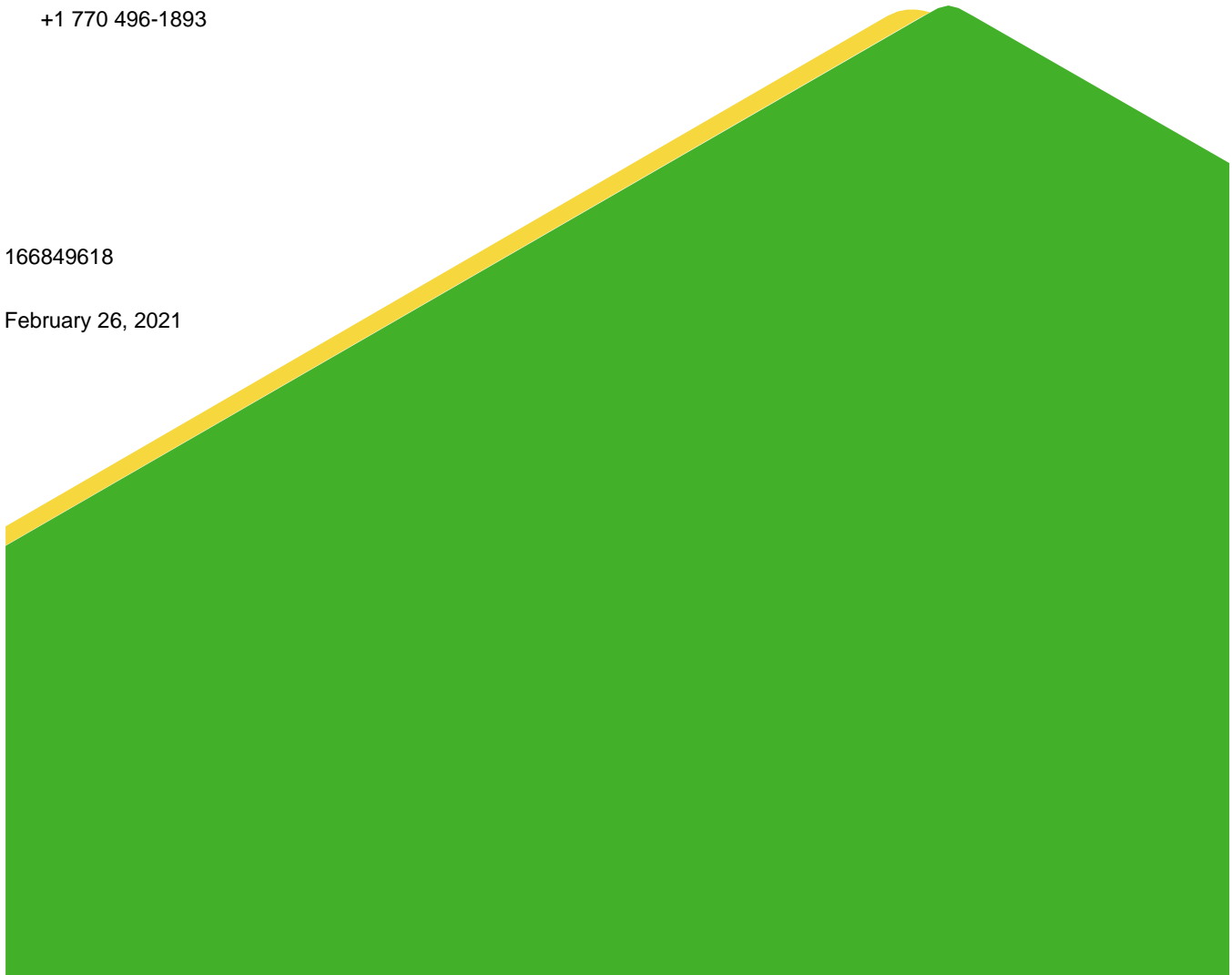


Table of Contents

1.0 INTRODUCTION	1
2.0 POND CLOSURE ACTIVITIES	2
3.0 SUMMARY OF WORK COMPLETED	2
3.1 Nature and Extent Delineation	2
3.2 Supplemental Data Collection.....	4
4.0 UPDATED SITE CONCEPTUAL MODEL	5
5.0 CORRECTIVE MEASURES ALTERNATIVES	5
6.0 PLANNED ACTIVITIES AND ANTICIPATED SCHEDULE	6
7.0 REFERENCES	7

TABLES

Table 1:	Evaluation of Remedial Technologies
Table 2A:	Detection and Assessment Monitoring Well Network Summary
Table 2B:	Piezometer Network Summary
Table 3A:	Surface Water Analytical Data Summary – November 2020
Table 3B:	Surface Water Analytical Data Summary – February 2021
Table 4:	Summary of Aquifer (Slug) Test Data
Table 5:	Proposed ACM Supplementary Data Collection Tasks for January through June 2021

FIGURES

Figure 1:	Site Location Map
Figure 2:	Monitoring Well, Piezometer and Surface Water Location Map
Figure 3:	Site Potentiometric Map – September 21, 2020
Figure 4:	Arsenic Isoconcentration Contour Map – September 2020
Figure 5:	Cobalt Isoconcentration Contour Map – September 2020
Figure 6:	Molybdenum Isoconcentration Contour Map – September 2020

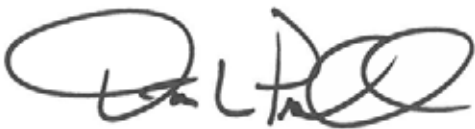
APPENDICES

Appendix A:	Laboratory Analytical Results
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Certification

This *Semi-Annual Remedy Selection and Design Progress Report, Georgia Power Company – Plant McDonough-Atkinson, Ash Pond 1 (AP-1)*, has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule, specifically 40 Code of Federal (CFR) 227.97(a) and the Georgia Environmental Protection Division Rules for Solid Waste Management 341-3-4-.10(6)(a).

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1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) coal combustion residuals (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015) (CCR Rule) (USEPA, 2015), Golder Associates Inc. (Golder) has prepared this Semi-Annual Remedy Selection and Design Progress Report (Semi-Annual Progress Report) for Georgia Power Company (Georgia Power) Plant McDonough-Atkinson Ash Pond 1 (AP-1 or Site). Specifically, this Semi-Annual Progress Report has been prepared pursuant to 40 CFR § 257.97(a) and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). This Semi-Annual Progress Report documents activities conducted in support of the previously submitted Assessment of Corrective Measures Report – Plant McDonough-Atkinson Ash Pond 1 (AP-1) (Golder, 2020a) (ACM Report).

Plant McDonough, formerly a coal-fired power generating facility, was converted to a natural gas combined-cycle power generating facility in 2011. A site location map is included as Figure 1.

Pursuant to § 257.96, Georgia Power initiated an ACM for AP-1 on July 9, 2020 to address the occurrence of cobalt and molybdenum in groundwater at statistically significant levels (SSL). Subsequently, Georgia Power completed an ACM report on December 4, 2020 and posted to the CCR compliance website in January 2021. Since the submission of the ACM report, arsenic was identified at a SSL on January 28, 2021 at well DGWC-69. The SSL is reported in the semi-annual report for which this report is an appendix. Georgia Power conducted a human health and ecological risk evaluation to evaluate constituents that exhibit SSLs in groundwater at AP-1 at the time of the December 2020 ACM (cobalt and molybdenum) and these constituents are not expected to pose a risk to human health or the environment (Wood, 2020). Delineation of the new SSL arsenic is complete on site based on results from the February 2021 surface water sampling event. An amendment to the risk assessment report will be submitted accompanying the annual report in August 2021 to address arsenic SSL in site groundwater.

Pursuant to 40 CFR 257.97, Georgia Power is evaluating the potential corrective measures in the ACM to identify a remedy or combination of remedies as soon as possible. The following corrective measures are potentially feasible for use at AP-1:

- Geochemical Approaches (In-Situ Injection)
- Hydraulic Containment (Pump and Treat)
- In-Situ Solidification/Stabilization
- Monitored Natural Attenuation (MNA)
- Permeable Reactive Barrier (PRB)
- Phytoremediation
- Subsurface Vertical Barrier Walls.

A comparative screening of the corrective measures as presented the ACM report is provided in Table 1. As required by the rules, this Semi-Annual Progress Report describes the progress made in selecting and designing a remedy. This progress report also serves as an amendment to the ACM to evaluate remedial alternatives relative to the recent SSL of arsenic in groundwater at well DGWC-69, downgradient of AP-1.

Georgia Power proactively initiated adaptive site management as outlined in the ACM Report (Golder, 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 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

2.0 POND CLOSURE ACTIVITIES

Source control has been implemented at the site as part of the closure process and was not specifically intended as a corrective measure. However, there is a strong potential for source control to limit future impact and improve groundwater quality. The surface impoundment AP-1 is closed in place with a permanent cover system designed to minimize infiltration and erosion and to meet or exceed the requirements of 257.102(d)(3)(ii). The Closure Plan (Golder, 2019) was prepared in accordance with 40 CFR 257, Subpart D and meets the requirements of 40 CFR 257.102(b). Maintenance will be provided on the final cover system for the required post-closure care period so that the integrity and effectiveness of the final cover system is maintained. Maintenance activities will include, as needed, repairs to the final cover to correct any effects related to settlement, subsidence, erosion or other events, and will be performed to prevent run-on or run-off from eroding or otherwise damaging the final cover.

As part of site closure and source control, Georgia Power has elected to install a subsurface vertical barrier wall around AP-1 as an Advanced Engineering Method (AEM). The process of final design, permitting and subsequent installation of that vertical barrier wall is underway.

3.0 SUMMARY OF WORK COMPLETED

The following sections summarize field investigation activities and data collection completed to date to support site characterization and delineation of Appendix IV SSLs, as well as evaluation of the corrective measures presented in the ACM Report. These data will be used to evaluate the feasibility, mechanisms, rates, and stability of identified remedial alternatives in combination with MNA as a corrective action for groundwater impacts from AP-1. An evaluation of these data as they relate to remedy selection alternatives will be presented in a future report(s).

3.1 Nature and Extent Delineation

CCR compliance groundwater monitoring-related activities have been performed for AP-1 since September 2016 pursuant to the CCR rule. Georgia Power initiated an assessment monitoring program in November 2019 after identifying statistically significant increases (SSIs) of Appendix III parameters in groundwater. Pursuant to § 257.95, samples were collected from the compliance monitoring wells and analyzed for Appendix IV constituents.

The 2020 assessment monitoring groundwater data show SSLs, as presented in Table 3.1, at concentrations exceeding the state and/or federal Groundwater Protection Standards (GWPS). Details are provided in the *2020 Annual Groundwater Monitoring and Corrective Action Report* (Golder, 2020b).

Table 3.1: AP-1 Statistically Significant Level Exceedances	
AP-1 Monitoring Well	Appendix IV Parameter
DGWC-40	Cobalt
DGWC-68A	Molybdenum
DGWC-69	Arsenic

The locations of the site monitoring wells and piezometers are shown on Figure 2. Tables 2A and 2B provide a summary of construction details for each of the site wells and piezometers, respectively. A potentiometric surface map illustrating the September 2020 potentiometric surface elevations is provided on Figure 3.

Horizontal and Vertical Delineation Well Installation

To characterize the nature and extent of target constituents, shallow and deep piezometers were installed and sampled. In addition, surface water was sampled at multiple locations to demonstrate horizontal delineation in surface water bodies where proximity to surface water prevented installation of additional wells. Figures 4 through 6 present isoconcentration contours for of each of the constituents with an exceedance of the GWPS, arsenic, cobalt, and molybdenum, respectively.

Detection monitoring wells DGWC-40, DGWC-68A and DGWC-69 show concentrations of cobalt, molybdenum, and arsenic, respectively, exceeding site background concentrations during the current reporting period (Golder, 2020b). In response, vertical delineation wells were installed within the weathered/fractured bedrock, adjacent to locations DGWC-40 (B-105D) and DGWC-68A (B-110D) resulting in a shallow and deep well pair at each of these locations. Delineation of arsenic at DGWC-69 is scheduled for March 2021 as the SSL at this location was recently identified.

A summary of well installation details for each of the site wells and piezometers (e.g., boring logs) are documented within separate well installation reports (Golder, 2020c, Golder, 2021).

Groundwater Sampling

In December 2020 groundwater samples were collected from newly installed delineation wells B-105D, and B-110D and analyzed for Appendix III and Appendix IV constituents. Results of this sampling event are included in Appendix A and will be further discussed in the July 2021 annual report. However, statistical analysis of the Appendix IV data is pending until four sampling events are completed in order to construct the confidence intervals required to evaluate and confirm potential SSLs. Vertical delineation for SSLs at AP-1 is ongoing. Georgia Power will continue to monitor the delineation wells and adaptively manage the Site as new data become available.

Surface Water Sampling

Due to the proximity of the engineered stream channel west of AP-1 and the Chattahoochee River in the downgradient direction of the wells showing SSLs of arsenic, cobalt and molybdenum, installation of additional wells to horizontally characterize this area is infeasible. In response, Georgia Power collected surface water

samples from the engineered stream channel and the Chattahoochee River downgradient of AP-1 on November 10, 2020 and February 2, 2021. Results of these sampling events are presented in Appendix A and summarized on Tables 3A and 3B. Based on data collected to date, no impacts to surface water have been identified and horizontal delineation is complete. Monitoring of these surface water locations will continue as part of the assessment monitoring program for the site.

3.2 Supplemental Data Collection

Additional field investigation activities and data analyses have been performed to evaluate possible remedial alternatives. A summary of these data is included below.

Mineralogical Analysis

The mineralogical composition of soil and rock samples from select boreholes located around AP-1 was assessed using quantitative X-Ray Diffraction (XRD) with Rietveld refinement. Cores from background borings DGWA-53 and DGWA-70A as well as cores from additional boreholes completed around AP-1 were analyzed to determine the general mineralogy of bedrock and soils. The purpose of the mineralogical analysis was to identify and quantify the crystalline mineral phases in each sample.

Results of these analyses are presented in Appendix A. Evaluation of this data as it relates to evaluation of remedy selection alternatives will be presented in a future report(s).

Chemical Analysis and Sequential Extraction

Chemical analysis of soils/rock for total metals and Sequential Extraction Procedure (SEP) analysis was conducted on solid samples collected from locations around AP-1. The SEP consists of a seven-step metals extraction from solids to determine their potential environmental stability. The seven-step SEP is defined by specific extraction steps and is based on a modified Tessier method (Tessier et al., 1979).

Results of these analyses are presented in Appendix A. Evaluation of this data as it relates to evaluation of remedy selection alternatives will be presented in a future report(s).

Aquifer Testing Activities

Aquifer tests (slug tests) were performed in January 2021 for the newly installed piezometers. The purpose of the testing was to estimate the horizontal hydraulic conductivity of aquifer materials encountered at the site.

In situ rising- and falling-head tests provide a quantitative estimate of horizontal hydraulic conductivity and a qualitative estimate of aquifer anisotropy in water-bearing units. The slug test data were analyzed using the mathematical solution by Bouwer and Rice (Bouwer and Rice, 1976 and 1989), which is applicable to fully or partially penetrating piezometers in unconfined or confined aquifers.

The computer software program AQTESOLV©, produced by HydroSOLVE, Inc., was used to assist in the analysis and plotting of data. The best fit lines were initially calculated by the computer software and were then adjusted manually, where necessary. A summary of the aquifer testing and the calculated geometric mean ($1.15E^{-04}$ centimeters/second) for hydraulic conductivity is presented in Table 4. These new data will be used to supplement existing hydraulic conductivity data. An updated understanding of aquifer properties, including conductivity, will help refine the conceptual site model, and support assessment of certain groundwater corrective measures, such as hydraulic containment, in-situ injections, in-situ stabilization, or MNA.

4.0 UPDATED SITE CONCEPTUAL MODEL

The additional data collected since the issuance of the ACM, together with new data evaluation tools and interpretations (described above), allow the development of a more refined conceptual site model (CSM). The following summarizes the current understanding of the CSM within the context of selecting an appropriate groundwater corrective measure for AP-1.

- The September 2020 potentiometric surface shows groundwater flow is generally west towards the engineered stream channel and south towards the Chattahoochee river, as shown on Figure 3. The latest water level data collected in 2020 confirmed groundwater flow in the uppermost aquifer to be consistent with the CSM.
- Additional data (e.g., slug tests) have been evaluated to refine the hydraulic conductivities at the site (Table 4). These slug test results are consistent with historical slug tests reported for the respective lithological units across the site.
- The boring logs from the newly installed vertical delineation wells have provided a more refined top of bedrock surface and have confirmed geology consistent with that presented the CSM (i.e., gneiss)

5.0 CORRECTIVE MEASURES ALTERNATIVES

Based on the data collected to date, four of the seven potential corrective measures being evaluated for AP-1 will be retained for further evaluation. Table 1 presents a summary of each of the remedial alternatives presented as part of the ACM. Table 5 provides a summary of additional data planned to be collected to further evaluate the feasibility of the remaining alternatives. The retention evaluation (Retained for Further Evaluation or Not Retained) for each potential remedial alternative is included on Table 1. The following three remedial alternatives have been eliminated from further consideration:

Permeable Reactive Barrier (PRB) - PRB technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater flows through the media. There is potential for biofouling and mineral precipitation, which reduces the effectiveness of media over time. This can increase the amount of maintenance needed for media changeouts. Constructing a PRB wall outside the alignment of the planned SVBW may impact the integrity of the SVBW. Additionally, there is limited space between the planned SVBW and either the property boundary or the adjacent surface water feature. As such, other retained options are more suitable for corrective action rather than the installation of a PRB.

Phytoremediation – Phytoremediation is the use of plants to degrade, immobilize, or contain constituents in soil, groundwater, surface water, and sediments. Due to the required space for proper growth and the limited space, a TreeWell® system would be the only feasible option for this remedial alternative. However, due to the presence of a SVBW for groundwater control at AP-1, and the limited space available for installation of a TreeWell® system, phytoremediation is not a feasible option. The development of the root system may impact the integrity of the planned SVBW and therefore phytoremediation has been removed from consideration for groundwater corrective action at AP-1.

Subsurface Vertical Barrier Wall (SVBW) - As part of site closure and source control, Georgia Power has elected to install a SVBW around AP-1 as an Advanced Engineering Method (AEM). The process of final design, permitting and subsequent installation of that vertical barrier wall is underway. Constructing a second SVBW outside the perimeter of the planned barrier wall is redundant to the closure method and may impact the integrity

of the planned SVBW. Additionally, there is limited space between the planned SVBW and either the property boundary or the adjacent surface water feature for installation of a second SVBW. As such, a SVBW has been removed from consideration for groundwater corrective action.

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-1, 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 CSM and allow for the continued evaluation of an appropriate groundwater corrective measure at the Site. This may include additional tests using the unconsolidated aquifer materials to further demonstrate the viability of MNA according to USEPA's tiered approach for the use of MNA in groundwater.

6.0 PLANNED ACTIVITIES

Georgia Power has initiated activities as outlined in the ACM Report (Golder, 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 identified in the ACM Report. At this time, and as discussed in Section 5.0, four of the corrective measures outlined in the ACM Report are being retained for further evaluation, including:

- Geochemical Approaches (In-Situ Injection)
- Hydraulic Containment (Pump and Treat)
- In-Situ Solidification/Stabilization
- Monitored Natural Attenuation (MNA)

Supplementary data collection and evaluation activities proposed to be completed within the next 6 months are presented on Table 5, with the key elements summarized below.

- Vertical delineation of arsenic in well DGWC-69 is planned.
- Groundwater samples will be collected from the existing detection and assessment well network to evaluate geochemical characteristics of the aquifer. In addition to Appendix III/IV constituents, wells may also be analyzed for major cations/anions and other parameters for characterization of groundwater and evaluating the potential remedies.
- Groundwater flow conditions will be evaluated based on data collected from newly installed horizontal and vertical delineation wells (as needed).
- Bedrock surface will be refined based on data collected from newly installed horizontal and vertical delineation wells (as needed).
- Evaluate Site data for attenuation mechanism and rates, aquifer capacity for attenuation, and mineralogical characterization.

Georgia Power will continue to prepare semi-annual progress reports to document AP-1 groundwater conditions, results associated with additional data collection, and the progress in selecting and designing a groundwater remedy in accordance with § 257.97(a). Georgia Power will include these future semi-annual progress reports with routine groundwater monitoring and corrective action reports to meet the requirements of § 257.105(h)(12), § 257.106(h)(9), and § 257.107(h)(9), respectively.

7.0 REFERENCES

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TABLES AND FIGURES

TABLE 1
Evaluation of Remedial Technologies
 Georgia Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)		
	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 Co. Under anaerobic conditions, Co would be attenuated within sparingly soluble sulfide minerals; this approach might also increase the attenuation of Mo, particularly if combined with an organic amendment. 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.	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 has been effectively immobilized under biologically enhanced conditions. Mo is more strongly sorbed to aluminum oxides than other metal oxides, and it 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.
Hydraulic Containment (pump- and-treat)	Hydraulic containment 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 and Mo.	Pump and treat (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 AP-1, 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.

TABLE 1
Evaluation of Remedial Technologies
 Georgia Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)		
	Description	Performance	Reliability
In-Situ Solidification / Stabilization	In-situ stabilization is a technique that uses mixing of the CCR with additives to solidify the material in place and reduce future dissolution of CCR compounds from the stabilized material. Additives typically include Portland cement, and the solidification is completed in-situ using large diameter augers. CCR located beneath the water table would be isolated by ISS.	Medium to high, groundwater impacts would be addressed through the processes of natural attenuation. This alternative would isolate/secure the source in a bound matrix, and over time, allow the concentrations of COCs in downgradient groundwater to decline to below applicable standards.	In-situ stabilization can be a reliable corrective measure for As, Be, Co, and Li in groundwater. Reliability is dependent on the permeability of the subsurface and mechanics of injection.
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) and molybdenum (Mo) at AP-1, are either physical (e.g., dilution, dispersion, flushing, and related processes) or chemical (sorption or oxidation reduction reactions). 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), and formation of sparingly soluble sulfide minerals (Co).	Physical and chemical MNA mechanisms for Co and Mo, 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 are already occurring at the site as evidenced by groundwater data from the delineation 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 and Mo at AP-1 will further enhance ongoing MNA.	Reliable as long as the aquifer conditions that result in Co and Mo 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 and/or Mo, or in combination with a second technology.
Permeable Reactive Barrier (PRB)	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 likely viable 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 would be contingent on finalization of the nature and extent characterization. PRB walls are typically keyed into the bedrock. While the 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 in groundwater, but additional testing is required for Mo to select the appropriate reactive media. The approach is expected to achieve GWPS for both constituents 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.	Reliable groundwater corrective measure technology, 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.

TABLE 1
Evaluation of Remedial Technologies
 Georgia Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)		
	Description	Performance	Reliability
Phyto Remediation (TreeWall®)	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 AP-1, 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 and Mo within the root zone as well as incidental uptake of dissolved Co and Mo 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 and Mo concentrations through immobilization and/or uptake and sequestration in the tree biomass; however, the main purpose is to provide hydraulic control. Given the current groundwater flow velocities, the approach is currently not considered viable. However, changing site conditions may make the corrective measure viable for the area downgradient of AP-1. Additional aquifer testing and/or groundwater flow modeling may be needed to confirm the suitability at that time.	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.
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 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-1, 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 and Mo 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 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
 Georgia Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)		
	Ease of Implementation	Potential Impacts	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.
Hydraulic Containment (pump- and-treat)	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. 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.	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 and Mo.
In-Situ Solidification / Stabilization	Easy to moderate, implementation of ISS will require a detailed design effort with bench scale testing to determine the appropriate amendment mix for a variety of overburden geologic materials. Pilot testing will also be needed to verify the ability of equipment to solidify material at depth. ISS has not been commonly used to stabilize entire ash units as part of a closure strategy.	Potential impacts of the remedy will be negligible.	In-situ stabilization of AP-1 is predicted to take a number of years to complete, depending on the availability of specialized contractors and equipment.
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 following pond closure. Engineering measures will be implemented during closure of the CCR unit to minimize potential impacts to the subsurface during closure activities and routine groundwater monitoring will be used to verify that groundwater impacts remain stable or decrease over time.

TABLE 1
Evaluation of Remedial Technologies
 Georgia Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)		
	Ease of Implementation	Potential Impacts	Time Requirement to Begin/Complete
Permeable Reactive Barrier (PRB)	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. 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.
Phyto Remediation (TreeWall®)	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 Wells	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 Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)			Retention Evaluation
	Institutional Requirements	Other Env. Or Public Health Requirements	Relative Costs	
Geochemical Approaches (in situ injection)	Deed restrictions may be necessary until in-situ treatment has achieved GWPS. A new 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 for 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; can be applied to As, and Co as a sparingly-soluble mineral, or could be applied to raise the groundwater pH to promote immobilization through sorption mechanisms. Additional evaluation required to determine likelihood to treat Mo.
Hydraulic Containment (pump- and-treat)	Depending on the effluent management strategy, modifications to the existing NPDES permit may be required, or obtaining a new 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; extracted water could be routed to wastewater treatment infrastructure built for dewatering and closure of ponds at the site. Could be considered an effective measure to maintain hydraulic control along the engineered stream channel west of AP-1 or the Chattahoochee River south of AP-1.
In-Situ Solidification / Stabilization	Deed restrictions may be necessary until groundwater concentrations are below GWPS. No other institutional requirements that may limit application of this technology are expected at this time.	Changes to groundwater chemistry relative to the mobility of Appendix IV constituents following completion of ISS, where large volumes of amendments (typically Portland cement) are added to the subsurface, are unknown and would require pilot testing.	Medium, depending on permeability of aquifer	Retained for further analysis; however, may be impractical because AP-1 is a currently capped and closed.
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 (PRB)	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; a PRB cannot treat groundwater downgradient of the constructable alignment; there is minimal space available downgradient of the impacted wells; potential for increased maintenance due to potential biofouling and mineral precipitation.
Phyto Remediation (TreeWall®)	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. Following installation, the remedy is passive and does not require external energy.	Medium (for installation) - minimal O&M requirements	Not retained for further analysis; little space available downgradient of the impacted wells for tree plantings. TreeWell® root system would likely impact the SVBW.

TABLE 1
Evaluation of Remedial Technologies
 Georgia Power – Plant McDonough-Atkinson
 Atlanta, Georgia

Corrective Measure	REGULATORY CITATION FOR CRITERIA: 40 CFR 257.96(C)(1)			Retention Evaluation
	Institutional Requirements	Other Env. Or Public Health Requirements	Relative Costs	
Subsurface Vertical Barrier Wells	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 evaluation. This methodology is currently undergoing permitting as part of closure methodology and therefore a second SVBW is not being considered for groundwater corrective action.

TABLE 2A
DETECTION AND ASSESSMENT MONITORING NETWORK SUMMARY
 Georgia Power Company - Plant McDonough
 Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
ASH POND 1 (AP-1) DETECTION MONITORING WELL NETWORK											
DGWA-53	Upgradient	Upper Bedrock	1393472.8	2201668.8	844.26	841.3	28.9	823.7	813.7	10	9/24/2016
DGWA-70A	Upgradient	Overburden	1390481.4	2200591.6	808.52	805.8	59.3	756.9	746.9	10	5/10/2017
DGWA-71	Upgradient	Overburden	1393963.3	2201714.8	863.84	861.2	43.8	827.8	817.8	10	2/28/2017
DGWC-37	Downgradient	Overburden	1390482.2	2200919.8	766.21	763.7	39.7	734.4	724.4	10	11/28/2012
DGWC-38	Downgradient	Overburden	1390362.7	2201148.6	757.43	754.7	25.0	740.0	730.0	10	11/29/2012
DGWC-39	Downgradient	Overburden	1390303.6	2201540.1	759.89	757.0	21.2	746.2	736.2	10	11/6/2012
DGWC-40	Downgradient	Overburden	1390625.7	2201825.9	779.06	776.2	34.9	751.7	741.7	10	11/5/2012
DGWC-67	Downgradient	Overburden	1390953.8	2200830.7	766.70	767.0	56.3	720.7	710.7	10	3/14/2017
DGWC-68A	Downgradient	Overburden	1391301.2	2200734.9	765.33	765.4	29.8	746.0	736.0	10	4/20/2017
DGWC-69	Downgradient	Overburden	1391585.0	2200657.1	763.75	764.0	24.3	749.7	739.7	10	3/16/2017
ASH POND 1 (AP-1) ASSESSMENT MONITORING NETWORK											
B-100	Downgradient	Overburden	1390254.8	2202242.1	777.95	775.3	44.8	740.5	730.5	10	7/8/2020
B-105D	Downgradient	Bedrock	1390633.9	2201832.7	779.01	776.0	70	716.0	706.0	10	10/19/2020
B-110D	Downgradient	Bedrock	1391294.0	2200734.6	764.61	764.7	63	711.7	701.7	10	11/17/2020
ASH POND 2 and ASH PONDS 3/4 (AP-2, 3/4) DETECTION MONITORING WELL NETWORK											
DGWA-53	Upgradient	Upper Bedrock	1393472.8	2201668.8	844.26	841.3	28.9	823.7	813.7	10	9/24/2016
DGWA-70A	Upgradient	Overburden	1390481.4	2200591.6	808.52	805.8	59.3	756.9	746.9	10	5/10/2017
DGWA-71	Upgradient	Overburden	1393963.3	2201714.8	863.84	861.2	43.8	827.8	817.8	10	2/28/2017
DGWC-2	Downgradient	Overburden/Upper Bedrock	1393958.0	2202119.5	850.88	848.3	49.0	809.6	799.6	10	10/2/2012
DGWC-4	Downgradient	Overburden	1394171.5	2202662.4	814.85	812.1	45.0	777.4	767.4	10	10/3/2012
DGWC-5	Downgradient	Overburden/Upper Bedrock	1394306.3	2202965.1	791.75	788.7	30.0	769.0	759.0	10	10/4/2012
DGWC-8	Downgradient	Overburden	1394322.2	2203882.1	826.38	824.1	49.1	785.4	775.4	10	10/10/2012
DGWC-9	Downgradient	Overburden	1394055.9	2204170.0	824.35	821.8	30.0	802.2	792.2	10	10/10/2012
DGWC-10	Downgradient	Overburden	1393818.3	2204201.1	823.55	820.9	45.4	785.9	775.9	10	10/11/2012
DGWC-11	Downgradient	Overburden	1393547.1	2204166.2	800.57	798.1	49.1	759.3	749.3	10	10/15/2012
DGWC-12	Downgradient	Overburden	1393149.4	2204128.3	773.86	771.2	25.1	756.5	746.5	10	10/15/2012
DGWC-13	Downgradient	Overburden	1392881.1	2204084.6	794.10	791.3	43.8	757.9	747.9	10	11/29/2012
DGWC-14	Downgradient	Overburden/Upper Bedrock	1392574.2	2204013.3	792.40	789.8	34.3	765.9	755.9	10	12/18/2012

TABLE 2A
DETECTION AND ASSESSMENT MONITORING NETWORK SUMMARY
 Georgia Power Company - Plant McDonough
 Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
DGWC-15	Downgradient	Overburden	1392544.1	2203679.0	824.50	821.5	67.1	764.8	754.8	10	11/29/2012
DGWC-17	Downgradient	Overburden	1392645.6	2203051.0	837.05	834.2	44.5	800.0	790.0	10	1/9/2013
DGWC-19	Downgradient	Overburden	1392342.6	2202601.0	825.46	822.9	39.8	793.5	783.5	10	3/12/2013
DGWC-20	Downgradient	Overburden	1392164.5	2202315.6	822.14	819.8	39.7	790.7	780.7	10	3/5/2013
DGWC-21	Downgradient	Overburden/Upper Bedrock	1392067.5	2202063.5	816.28	813.5	69.0	754.9	744.9	10	10/31/2012
DGWC-22	Downgradient	Upper Bedrock	1392126.3	2201791.9	816.59	813.7	60.0	764.0	754.0	10	10/25/2012
DGWC-23	Downgradient	Upper Bedrock	1392239.7	2201582.0	818.37	815.7	60.1	765.9	755.9	10	10/25/2012
DGWC-42	Downgradient	Overburden	1391327.8	2201870.2	804.68	802.0	50.4	762.1	752.1	10	11/12/2012
DGWC-47	Downgradient	Overburden/Upper Bedrock	1391553.8	2202610.5	797.45	794.3	28.8	775.9	765.9	10	6/23/2016
DGWC-48	Downgradient	Overburden/Upper Bedrock	1391314.6	2202290.2	788.33	785.2	30.0	765.6	755.6	10	6/22/2016
ASH POND 2 and ASH PONDS 3/4 (AP-2, 3/4) ASSESSMENT MONITORING WELL NETWORK											
B-56	Downgradient	Overburden	1393957.9	2204187.8	823.59	821.0	45.0	786.4	776.4	10	10/3/2016
B-77	Downgradient	Overburden	1390948.7	2202942.0	776.86	777.1	42	745.1	735.1	10	9/17/2019
B-83	Downgradient	Overburden	1390735.5	2202695.6	776.98	777.1	48.6	738.5	728.5	10	9/30/2019
B-88	Downgradient	Overburden	1394401.1	2203738.3	820.07	817.0	72	755.0	745.0	10	11/15/2019
B-93	Downgradient	Overburden	1394348.7	2202946.7	789.07	789.2	28.9	770.3	760.3	10	12/12/2019
B-101D	Downgradient	Bedrock	1394063.3	2204167.1	824.29	821.2	74.9	756.3	746.3	10	11/12/2020
B-102D	Downgradient	Bedrock	1393828.2	2204199.0	823.42	820.6	84.4	745.2	736.2	9	11/10/2020
B-104D	Downgradient	Bedrock	1391317.9	2202297.4	787.90	785.3	60	735.3	725.3	10	10/20/2020
B-106D	Downgradient	Bedrock	1394328.3	2203869.6	826.21	823.5	79.4	754.1	744.1	10	11/13/2020
B-107D	Downgradient	Bedrock	1392333.6	2202597.0	823.38	820.6	85.1	745.5	735.5	10	10/28/2020
B-108D	Downgradient	Bedrock	1392155.6	2202313.1	821.13	818.4	79	749.4	739.4	10	10/27/2020
B-109D	Downgradient	Bedrock	1393956.4	2202127.0	850.73	847.8	99.4	759.4	748.4	11	10/31/2020
B-111D	Downgradient	Bedrock	1394302.6	2202956.5	791.87	789.1	84.15	714.9	704.9	10	11/3/2020

Notes:

1. bgs = below ground surface
2. Coordinate System: NAD 1983 State Plane Georgia West (U.S. feet)
3. NAD - North American Datum; NAVD - North American Vertical Datum

TABLE 2B
PIEZOMETER NETWORK SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
PIEZOMETERS											
B-3	Downgradient	Overburden/Upper Bedrock	1394045.1	2202411.5	837.78	835.0	37.0	808.3	798.3	10	10/3/2012
B-6	Downgradient	Overburden	1394419.5	2203266.5	789.47	786.5	35.4	761.5	751.5	10	10/9/2012
B-7	Downgradient	Overburden	1394374.6	2203596.1	809.16	806.1	25.2	791.3	781.3	10	10/9/2012
B-16	Downgradient	Overburden	1392595.1	2203315.4	826.47	823.6	43.7	790.2	780.2	10	12/19/2012
B-18	Downgradient	Overburden	1392521.0	2202875.5	826.56	823.9	32.6	801.5	791.5	10	1/10/2013
B-24	Downgradient	Upper Bedrock	1392479.9	2201450.0	822.11	819.3	79.1	751.0	741.0	10	10/24/2012
B-25	Downgradient	Upper Bedrock	1392813.3	2201502.7	836.54	833.5	54.8	789.1	779.1	10	10/24/2012
B-26	Downgradient	Upper Bedrock	1393105.6	2201550.4	853.60	850.6	49.3	811.7	801.7	10	10/23/2012
B-28	Downgradient	Overburden/Upper Bedrock	1391967.4	2201679.2	816.08	813.3	69.4	754.3	744.3	10	10/31/2012
B-29	Downgradient	Overburden	1391890.0	2201422.0	816.43	813.5	54.4	769.4	759.4	10	1/11/2013
B-31	Downgradient	Upper Bedrock	1392034.3	2200928.5	797.47	794.9	45.1	760.2	750.2	10	1/22/2013
B-41	Downgradient	Overburden	1390920.8	2201751.9	795.20	792.4	60.0	743.0	733.0	10	11/14/2012
B-50	Downgradient	Overburden	1391657.1	2201841.0	809.67	809.2	36.0	784.4	774.4	10	6/24/2016
B-51	Downgradient	Overburden	1390501.2	2200906.5	765.92	763.3	65.0	708.3	698.3	10	6/27/2016
B-52	Downgradient	Overburden	1392308.3	2201314.8	822.89	820.3	50.0	781.4	771.4	10	9/28/2016
B-54	Downgradient	Overburden/Upper Bedrock	1394423.5	2203140.7	785.46	782.6	34.2	758.8	748.8	10	9/26/2016
B-55	Downgradient	Overburden	1394142.6	2204147.9	825.12	822.9	52.0	781.9	771.9	10	9/22/2016
B-57	Downgradient	Upper Bedrock	1391396.3	2202736.9	789.04	786.0	50.5	746.0	736.0	10	9/24/2016
B-58	Downgradient	Overburden	1391125.7	2202426.5	788.17	785.2	45.0	750.7	740.7	10	9/23/2016
B-59	Downgradient	Overburden/Upper Bedrock	1394349.1	2203001.1	788.00	785.5	30.3	765.3	755.3	10	9/23/2016
B-60	Downgradient	Overburden	1391100.7	2202881.6	782.13	779.2	49.8	739.9	729.9	10	9/29/2016
B-61	Downgradient	Overburden	1390957.8	2202505.8	782.09	779.0	51.9	737.5	727.5	10	9/29/2016
B-62	Downgradient	Upper Bedrock	1389828.1	2201811.2	760.08	760.4	39.9	730.7	720.7	10	10/4/2016
B-63	Downgradient	Overburden	1390999.1	2202978.1	777.10	777.3	46.0	741.8	731.8	10	10/6/2016
B-64	Downgradient	Overburden	1394381.9	2203031.3	785.83	786.1	30.4	766.1	756.1	10	11/2/2016
B-65	Downgradient	Overburden/Upper Bedrock	1394381.2	2204050.8	821.95	822.3	45.4	787.9	777.9	10	11/15/2016
B-66	Downgradient	Overburden	1393858.2	2204277.5	815.90	813.3	55.3	768.3	758.3	10	11/16/2016
B-68	Downgradient	Overburden	1391298.2	2200714.2	758.68	759.0	18.0	751.0	741.0	10	3/16/2017

TABLE 2B
PIEZOMETER NETWORK SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well-ID	Hydraulic Location	Screened Media	NAD 83 Northing	NAD 83 Easting	Top of Casing Elevation (feet NAVD 88)	Ground Surface Elevation (feet NAVD 88)	Total Well Depth (feet bgs)	Top of Screen Elevation (feet NAVD 88)	Bottom of Screen Elevation (feet NAVD 88)	Screen Length (feet)	Date of Installation
B-72	Downgradient	Overburden	1391241.2	2200724.9	758.46	758.52	21.9	746.6	736.6	10	4/19/2017
B-73	Downgradient	Overburden	1391351.5	2200698.5	759.21	759.23	15.8	753.5	743.5	10	4/19/2017
B-74	Downgradient	Overburden	1391278.9	2200666.3	759.06	759.21	16.5	748.2	743.2	5	4/25/2017
B-78	Downgradient	Overburden/Upper Bedrock	1394328.2	2202958.2	790.75	788.0	30	768.0	758.5	10	9/22/2019
B-79	Downgradient	Overburden	1394458.6	2203223.0	788.66	785.9	34.93	761.0	751.5	10	9/21/2019
B-80	Downgradient	Overburden	1394372.6	2203533.9	804.47	801.8	30	782.0	772.5	10	9/20/2019
B-81	Downgradient	Overburden	1394364.9	2203741.1	820.56	817.7	50	778.5	768.5	10	9/22/2019
B-82	Downgradient	Overburden	1393750.0	2204258.1	810.07	807.5	45	773.0	763.0	10	9/21/2019
B-84	Downgradient	Overburden	1390411.9	2202241.9	776.34	776.6	49.1	737.5	727.5	10	10/1/2019
B-85	Downgradient	Overburden/Upper Bedrock	1394433.4	2203134.5	782.54	782.7	34.5	758.5	748.5	10	11/18/2019
B-86	Downgradient	Overburden/Upper Bedrock	1394480.0	2203206.6	784.29	784.6	34.1	760.5	750.5	10	11/18/2019
B-87	Downgradient	Overburden	1394401.9	2203531.3	803.37	800.4	42	768.7	758.7	10	11/17/2019
B-89	Downgradient	Upper Bedrock	1394398.4	2204049.4	822.36	822.6	49.5	783.1	773.1	10	11/19/2019
B-90	Downgradient	Overburden	1394501.0	2203212.6	784.00	784.2	33.4	760.8	750.8	10	12/10/2019
B-91	Downgradient	Overburden	1394447.1	2203123.9	782.98	783.1	34.6	758.5	748.5	10	12/11/2019
B-92	Downgradient	Overburden	1394392.7	2203026.7	785.08	785.3	24.6	770.7	760.7	10	12/11/2019
B-94	Downgradient	Overburden	1394402.0	2203513.7	801.74	799.2	45.24	764.6	754.6	10	1/23/2020
B-95	Downgradient	Overburden	1394518.6	2203167.7	784.00	784.3	33.3	761.3	751.3	10	2/11/2020
B-96	Downgradient	Overburden	1394478.7	2203099.3	784.92	785.3	33.1	762.2	752.2	10	2/10/2020
B-97	Downgradient	Overburden/Upper Bedrock	1394430.0	2203008.3	786.29	786.6	31	765.3	755.3	10	2/11/2020
B-98	Downgradient	Overburden	1394392.5	2202934.0	789.67	789.8	19.4	780.8	770.8	10	2/10/2020
B-99	Downgradient	Overburden	1394524.2	2203084.5	782.39	782.6	12.3	775.3	770.3	5	7/7/2020
B-103D	Downgradient	Bedrock	1391542.8	2202615.0	795.96	793.8	70.0	733.8	723.8	10	10/15/2020

Notes:

1. bgs = below ground surface
2. Coordinate System: NAD 1983 State Plane Georgia West (U.S. feet)
3. NAD - North American Datum; NAVD - North American Vertical Datum

TABLE 3A
SURFACE WATER ANALYTICAL DATA SUMMARY - NOVEMBER 2020
Ash Pond 1
 Georgia Power Company - Plant McDonough
 Atlanta, GA



Analyte	Units	SURFACE WATER SAMPLES									
		UT01_DS	UT01_US	UT02	CR+0.4	CR+0.2	Dewatering Upstream	Dewatering Downstream	CR-0.2	CR-0.5	CR-0.8
		11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020
Appendix III											
Calcium	mg/L	22.3	21.3	21.9	-	-	-	-	-	-	-
Chloride	mg/L	11.5	12	11.7	-	-	-	-	-	-	-
Fluoride	mg/L	0.18	0.18	0.18	-	-	-	-	-	-	-
pH	SU	7.18	7.3	7.31	7.35	7.42	6.9	7.03	7.82	7.4	7.62
Sulfate	mg/L	20.5	16.1	16.5	-	-	-	-	-	-	-
Total Dissolved Solids	mg/L	145	132	127	-	-	-	-	-	-	-
Appendix IV											
Beryllium	mg/L	-	-	-	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Cobalt	mg/L	-	-	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Molybdenum	mg/L	<0.010	<0.010	<0.010	-	-	-	-	-	-	-
Major Ions											
Alkalinity, Total as CaCO3	mg/L	68.8	68.8	67.9	-	-	-	-	-	-	-
Alkalinity, Bicarbonate (CaCO3)	mg/L	68.8	68.8	67.9	-	-	-	-	-	-	-
Magnesium	mg/L	4.8	4.2	4.4	2	2	2	2	2.1	2	2
Potassium	mg/L	3.9	3.8	4.2	2.6	2.5	2.7	2.6	2.6	2.8	2.6
Sodium	mg/L	13.9	14.2	14.4	5.4	5.5	5.5	5.6	5.9	5.7	5.6

Notes:

< indicates the substance was not detected above the analytical reporting limit (RL). The value displayed is the RL.

"-" = analysis was not performed

TABLE 3B
SURFACE WATER ANALYTICAL DATA SUMMARY - FEBRUARY 2021
Ash Pond 1
 Georgia Power Company - Plant McDonough
 Atlanta, GA



Analyte	Units	SURFACE WATER SAMPLES											
		UT01_DS	UT01_US	UT02	UT03	CR+0.4	CR+0.2	CR-0.1	Dewatering Downstream	Dewatering Upstream	CR-0.2	CR-0.5	CR-0.8
		2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021	2/2/2021
Field Parameters													
Temperature	F	47.4	46.7	46.6	45.4	46.16	46.24	46.43	46.41	46.52	46.6	46.75	46.98
pH	S.U.	7.19	7.07	7.05	7.01	7.65	7.57	7.78	7.7	7.51	7.48	7.46	7.15
ORP	mv	110.4	144.3	147.3	143.9	-4.8	-3.4	-8.1	-11	-9.8	-19.3	-20.8	-21.3
Dissolved Oxygen	mg/L	10.60	11.82	11.90	11.17	13.02	13.08	12.92	14.72	12.87	13.00	13.05	13.97
Turbidity	NTU	5.96	4.05	4.19	4.6	14.2	13.7	16.0	11.8	12.3	14.0	14.4	14.0
Specific Conductance	mS/cm	0.252	0.187	0.190	0.189	0.080	0.080	0.083	0.079	0.079	0.079	0.078	0.080
Appendix III													
Boron	mg/L	0.11	0.046	0.063	0.069	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Calcium	mg/L	17.4	17.2	17.4	17.3	5.3	5	5.2	5.1	4.9	5	5.2	4.9
Chloride	mg/L	9.9	10.7	10.4	10.2	6.3	6.2	6.6	6.1	6.1	6.2	6.2	6.4
Fluoride	mg/L	0.17	0.22	0.17	0.17	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	16.5	14.5	15.5	15.4	4.5	4.4	4.8	4.3	4.3	4.3	4.3	4.5
Total Dissolved Solids	mg/L	100	97	99	98	27	41	25	30	29	38	31	30
Appendix IV													
Arsenic	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Beryllium	mg/L	NA	NA	NA	NA	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Major Ions													
Alkalinity, Total as CaCO3	mg/L	55.1	53.5	54.7	54.3	20.5	20.4	20.7	16.7	20.1	17.2	17	17
Alkalinity, Bicarbonate (CaCO3)	mg/L	55.1	53.5	54.7	54.3	20.5	20.4	20.7	16.7	20.1	17.2	17	17
Magnesium	mg/L	3.6	3.3	3.3	3.4	2.1	2	2.1	2	2	2.1	2.1	2.1
Potassium	mg/L	2.9	2.9	3	2.9	2.8	2.7	2.8	2.7	2.7	2.8	2.8	2.8
Sodium	mg/L	12.2	12.7	12.7	12.6	7	6.8	7	6.9	6.8	6.8	7	7

Notes:

F = Fahrenheit; S.U. = Standard Units; mV = Millivolts; mg/L = milligrams per liter; mS/cm = Milisemens per centimeter; NTU = nephelometric turbidity unit

< indicates the substance was not detected above the analytical reporting limit (RL). The value displayed is the RL.

"--" = analysis was not performed

Table 4
Summary of Aquifer (Slug) Test Data
Georgia Power Company - Plant McDonough
Atlanta, Georgia

Piezometer ID	Saturated Aquifer Thickness (feet)	Screen Length (feet)	Aquifer Test Type	Hydraulic Conductivity (cm/sec)
B-101D	100	10	Falling	4.30E-05
			Rising	1.05E-05
B-102D	100	10	Falling	7.21E-05
			Falling	8.75E-05
			Falling	7.80E-05
			Rising	2.41E-04
			Falling	2.30E-05
B-104D	100	10	Rising	3.46E-05
			Falling	1.56E-05
			Rising	4.65E-05
			Falling	1.15E-04
B-105D	100	10	Rising	1.34E-04
			Falling	1.22E-04
			Rising	1.27E-04
			Falling	7.98E-05
B-106D	100	10	Rising	9.17E-05
			Falling	2.05E-04
			Rising	2.24E-04
			Falling	3.69E-05
B-107D	100	10	Rising	4.08E-03
			Falling	1.23E-04
			Rising	4.60E-03
			Falling	8.19E-04
			Rising	1.61E-03
			Falling	2.58E-05
B-108D	100	10	Rising	1.67E-04
			Falling	1.50E-04
			Rising	2.69E-04
			Falling	2.61E-05
B-109D	100	10	Rising	1.66E-05
			Falling	3.70E-04
B-111D	100	10	Rising	1.19E-04
			Falling	6.49E-05
			Rising	1.80E-04
			Geomean	1.15E-04

NOTES:

1. Geomean = geometric mean
2. cm/sec = centimeters per second
3. Aquifer testing not performed at B-103D

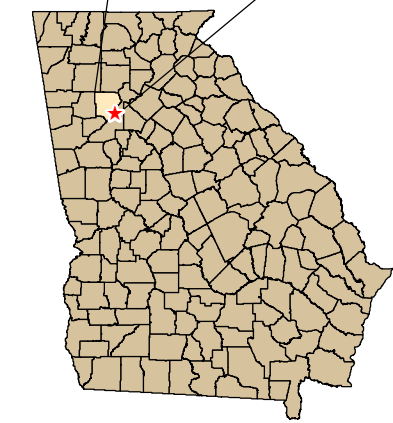
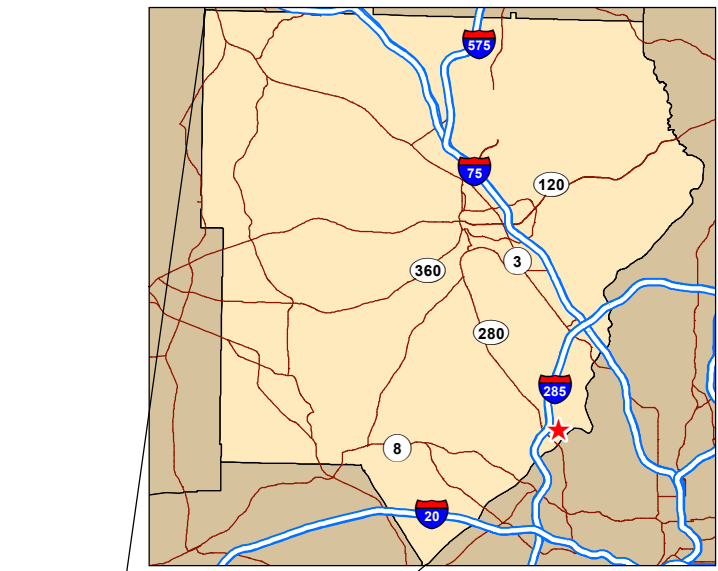
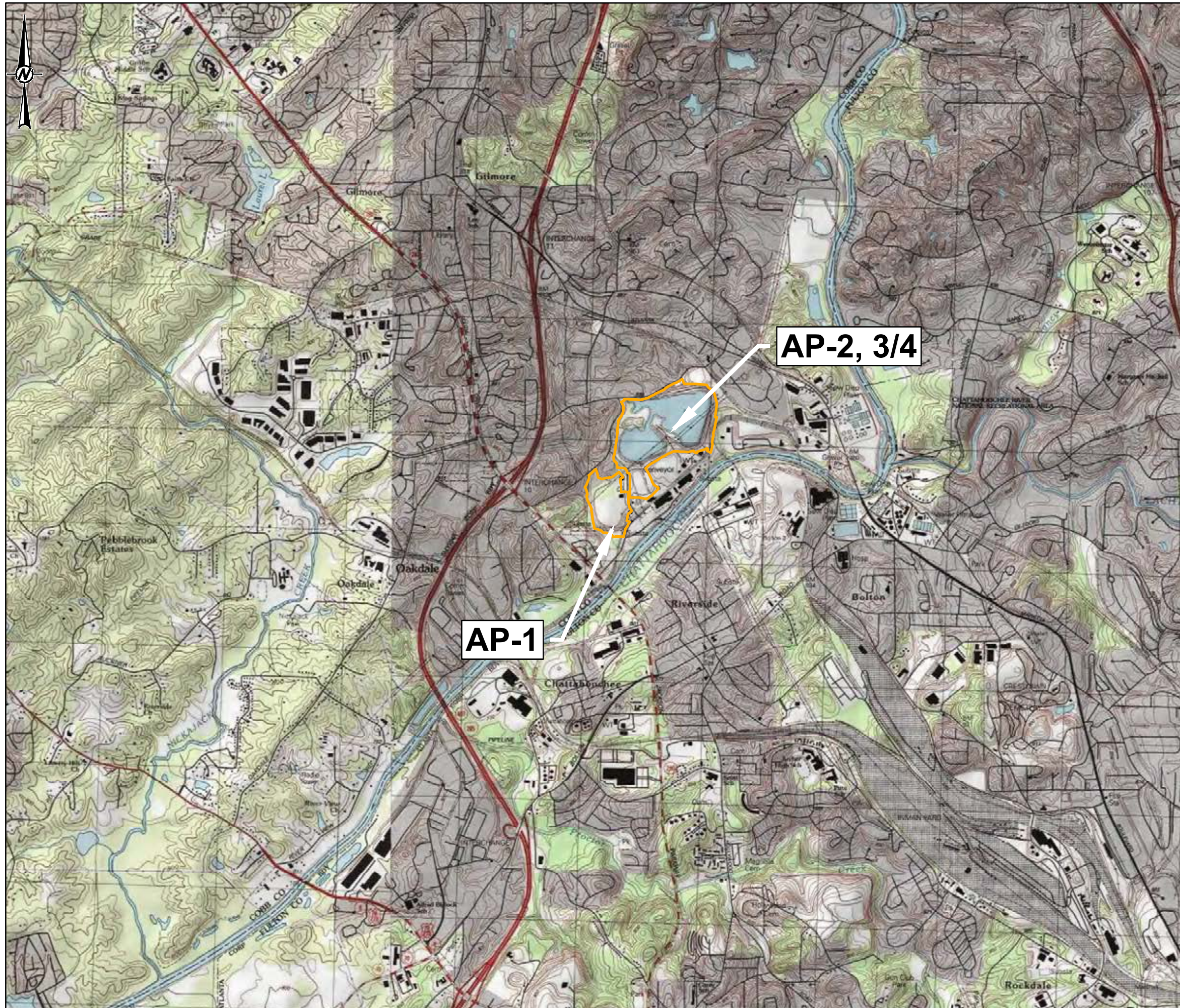
TABLE 5
Proposed ACM Supplemental Data Collection Tasks for January through June 2021
 Georgia Power – Plant McDonough-Atkinson AP-1
 Atlanta, Georgia

Data Collection Event	Applicable CMs	Applicability / Rationale	Field Component	Parameters of Interest (POI)
Well Installation	ISI P&T MNA	Nature and Extent: Install vertical delineation wells to evaluate arsenic and molybdenum near wells DGWC-69 and DGWC-68A, respectively.	Install wells to total well depths ranging approximately from 40 to 80 feet below ground surface, screened at least 20-feet below the top of wells B-110D and DGWC-69.	Vertical delineation
Groundwater Sampling	ISI MNA	Evaluation of: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) in situ conditions to establish evaluate PRB options and phytoremediation measures downgradient of unit	Collect groundwater samples from existing well network currently sampled under the assessment monitoring program as well as additional site piezometers within migration pathway.	In addition to routine App III/IV parameters: orthophosphate, phosphorous, sulfide, iron, manganese, magnesium, sodium, potassium, total alkalinity, bicarbonate, dissolved organic carbon (DOC), nitrate/nitrite.
Aquifer solids sampling (Collect/Submit archived soil/rock cores) as needed	ISI MNA	Evaluation of soils within aquifer matrix: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) mineralogy characterization	Collect samples from previously extracted soil/rock cores from selected boring locations.	Sequential extraction procedure (SEP) for analysis of arsenic (As), cobalt (Co) and molybdenum (Mo) to characterize the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Co, Mo, aluminum, iron, and manganese.
Slug tests	ISI P&T MNA	Refine our understanding of hydrogeologic conditions within the anticipated treatment area. Slug data will be used in conjunction with groundwater data to update the conceptual groundwater flow model.	Conduct slug tests in select wells not previously tested. Additional pump testing may be conducted at specific locations to confirm aquifer connectivity and establish gradients.	Transmissivity, storage coefficient, hydraulic conductivity
Test Pit Investigation	MNA ISS	Evaluate chemistry of fill materials outside the limits of AP-1 boundary.	Complete a series of test pits to investigate the presence of fill materials. Samples will be collected to evaluate geochemical characteristics of the fill.	Identify the characteristics of the fill and the impacts on groundwater quality. Sequential extraction for target metals and mineralogy to characterize the fill.
Evaluation of the analytical results from specialized analysis of collected saturated unconsolidated aquifer matrix samples	ISI P&T ISS MNA	Evaluation of aquifer matrix for: (i) attenuation mechanisms and rates, and aquifer capacity for attenuation; and (ii) mineralogical characterization.	No Field Component: Aquifer matrix samples collected and submitted to the lab in November 2019.	Conceptually identify attenuation rates and aquifer capacity for As, Co, and Mo. Evaluate long term stability of attenuation.

Applicable Corrective Measures (CM Retained):

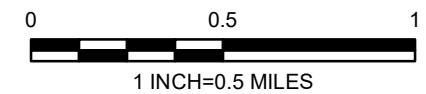
ISI - Geochemical Approaches (In-Situ Injection); P&T - Hydraulic Containment (Pump and Treat); ISS – In-situ Solidification/Stabilization; MNA - Monitored Natural Attenuation





REFERENCE

SERVICE LAYER CREDITS: COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED



CLIENT
 GEORGIA POWER COMPANY
 PLANT MCDONOUGH
 PROJECT
 PLANT MCDONOUGH
 REMEDY SELECTION REPORT

TITLE
SITE LOCATION MAP

CONSULTANT	YYYY-MM-DD	2019-1-31
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	KNJ
	APPROVED	TIR

THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN. THE SHEET HAS BEEN MODIFIED FROM ANS1.B



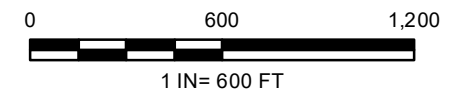
- LEGEND**
- + AP-1 MONITORING WELL
 - + PIEZOMETER
 - + AP-2,3/4 MONITORING WELL
 - + UPGRADIENT WELL
 - + SURFACE WATER MONITORING LOCATION
 - STAFF GAUGE
 - PROPERTY BOUNDARY
 - PERMIT BOUNDARY

NOTES

- ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE

REFERENCE

- SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
- COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
- MONITORING WELL/PIEZOMETER LOCATIONS SURVEYED BY METRO ENGINEERING 08/10/2020.



CLIENT
GEORGIA POWER COMPANY
 PLANT MCDONOUGH

PROJECT
 PLANT MCDONOUGH REMEDY SELECTION

TITLE
MONITORING WELL, PIEZOMETER AND SURFACE WATER LOCATION MAP

CONSULTANT	YYYY-MM-DD	2021-02-03
	PREPARED	DJC
	DESIGN	DLP
	REVIEW	DP/RK
	APPROVED	TIR

Path: C:\Users\vdosca\OneDrive\Documents\166849621_SCS Plant McDonough GW Cone Svcs GA - Project File\800_Shafiles\MXD\Remedy Selection Work Plan\Figure 2 - Proposed Investigation Location Map.mxd

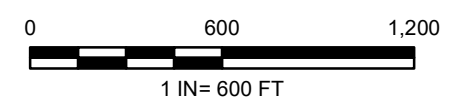
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANS.B



- LEGEND**
- ◆ PIEZOMETER
 - ◆ AP-1 MONITORING WELL
 - ◆ AP-2,3/4 MONITORING WELL
 - ◆ UPGRAIDENT WELL
 - PERMIT BOUNDARY
 - - - PROPERTY BOUNDARY
 - APPROXIMATE GROUNDWATER FLOW DIRECTION
 - GROUNDWATER SURFACE CONTOUR (FT NAVD)

- NOTES**
1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED SEPTEMBER 21, 2020 BY GOLDER ASSOCIATES.
 3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM (FT NAVD).
 4. B-27, B-68, AND DGWA-70 ARE NOT USED AS MONITORING WELLS DUE TO WELL REPLACEMENT, PROXIMITY TO CLOSURE ACTIVITIES, OR MODIFICATIONS TO THE PROPOSED WELL NETWORK.
 5. B-72 THROUGH B-74 WATER LEVELS NOT TAKEN DURING SEPTEMBER 21ST, 2020 EVENT.
 6. INTERSTITIAL WELLS GROUNDWATER ELEVATION DETERMINED USING TOPOGRAPHY.

- REFERENCE**
1. AERIAL IMAGE DATED NOVEMBER 2018 FROM GOOGLE EARTH.
 2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
 3. MONITORING WELL/PIEZOMETER LOCATIONS AND ELEVATIONS SURVEYED BY METRO ENGINEERING AND SURVEYING COMPANY IN AUGUST 2020.



CLIENT
SOUTHERN COMPANY SERVICES, INC.
PLANT MCDONOUGH

PROJECT
REMEDY SELECTION REPORT

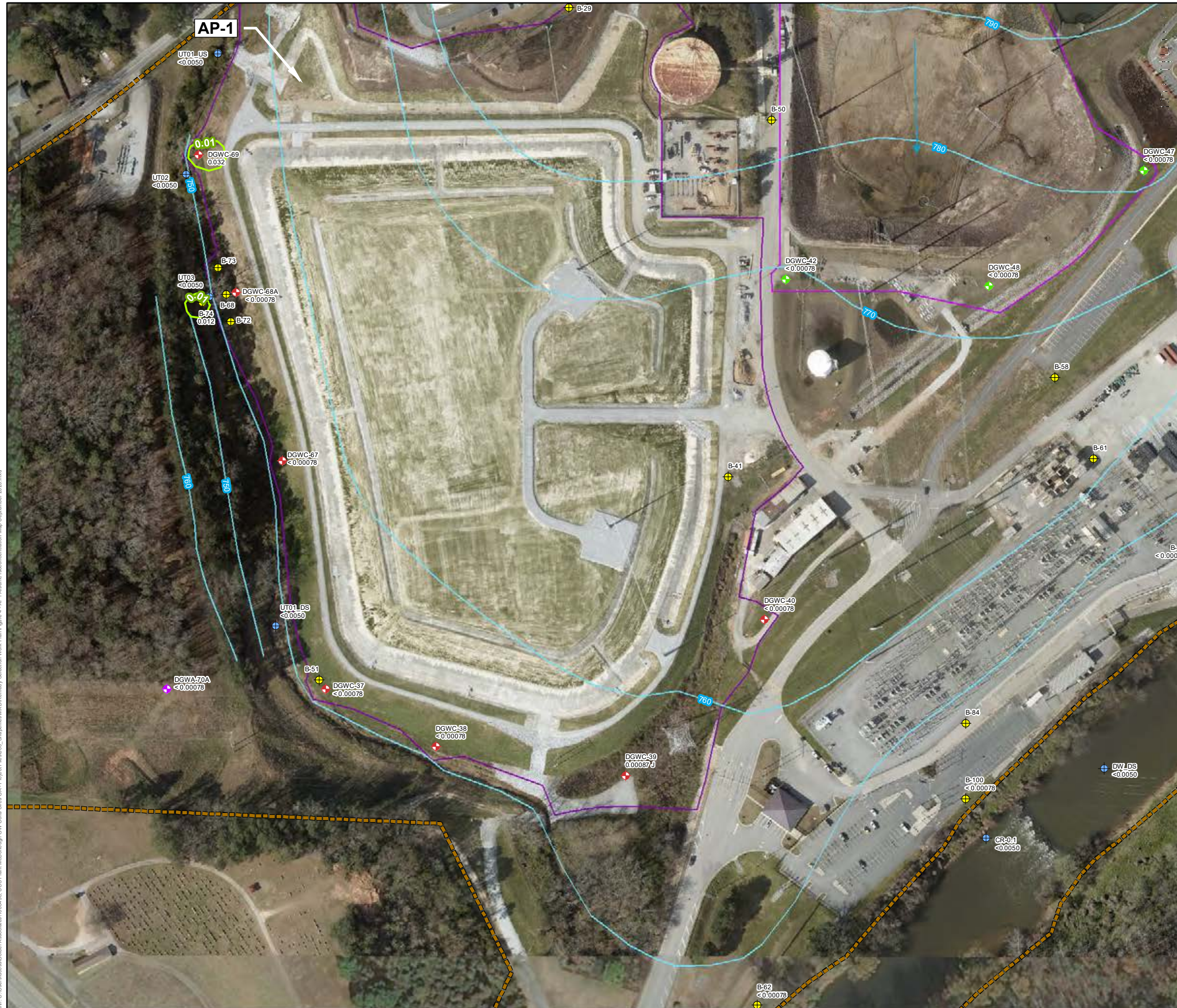


TITLE
**SITE POTENTIOMETRIC MAP
SEPTEMBER 21, 2020**

CONSULTANT	YYYY-MM-DD	2020-09-21
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	BAS
	REVIEWED/APPROVED	DLP

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANS/B



LEGEND

- PIEZOMETER
- AP-1 MONITORING WELL
- AP-2,3/4 MONITORING WELL
- UPGRADIENT WELL
- SURFACE WATER MONITORING LOCATION
- 0.01 ARSENIC GWPS ISOCONTOUR (INFERRED)
- PROPERTY BOUNDARY
- INFERRED POTENTIOMETRIC SURFACE CONTOUR (SEPT 20)
- PERMIT BOUNDARY

- NOTES**
- ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE
 - GOUNDWATER CONCENTRATIONS IN MILLIGRAMS PER LITER (MG/L). GWPS = GROUNDWATER PROTECTION STANDARD.
 - DATA SHOWN REPRESENT THE SEPTEMBER 2020 SEMI-ANNUAL MONITORING EVENT RESULTS AS WELL AS APPLICABLE DELINEATION WELL DATA. SURFACE WATER QUALITY DATA COLLECTED BY ARCADIS ON FEBRUARY 2, 2021.
 - GWPS IS EQUAL TO THE MCL

Analyte	Units	GWPS
Arsenic	mg/L	0.01

- REFERENCE**
- SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGGRID, IGN, AND THE GIS USER COMMUNITY
 - COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
 - MONITORING WELL/PIEZOMETER LOCATIONS SURVEYED BY METRO ENGINEERING 08/10/2020.
- 0 200 400
1 IN= 200 FT

CLIENT
GEORGIA POWER COMPANY
 PLANT MCDONOUGH

PROJECT
 PLANT MCDONOUGH REMEDY SELECTION



TITLE
ARSENIC ISOCONCENTRATION CONTOUR MAP
SEPTEMBER 2020

CONSULTANT	YYYY-MM-DD	2021-01-22
GOLDER	PREPARED	DJC
	DESIGN	DLP
	REVIEW	DLP
	APPROVED	TIR

Path: C:\Users\jacobr\Documents\166849621_SCS Plant McDonough GW Cont. Svcs GA - Project of File 800_Shapefiles\MXD\Remedy Selection Work Plan\Figure 4 - AP-1 Arsenic Isoconcentration Map_Sep2020.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANSIB

Path: C:\Users\jdores\Golder\Associates\1668496_SCS Plant McDonough\GW_Cone_Svcs\GA-Project\Files\800_Shapefiles\MXD\Remedy_Selection\Work\PlanFigure 5-AP1_Cobalt_Isoconcentration_Map_September_2020.mxd



LEGEND

- ⊕ PIEZOMETER
- ⊕ AP-1 MONITORING WELL
- ⊕ AP-2,3/4 MONITORING WELL
- ⊕ UPGRADIENT WELL
- ⊕ SURFACE WATER MONITORING LOCATION
- 0.0322 COBALT GWPS ISOCONTOUR (INFERRED)
- INFERRED POTENTIOMETRIC SURFACE CONTOUR (SEPT 20)
- - - PROPERTY BOUNDARY
- PERMIT BOUNDARY

- NOTES**
1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE
 2. GROUNDWATER CONCENTRATIONS IN MILLIGRAMS PER LITER (MG/L). GWPS = GROUNDWATER PROTECTION STANDARD. RSL = (FEDERAL REGIONAL SCREENING LEVEL)
 3. DATA SHOWN REPRESENT THE SEPTEMBER 2020 SEMI-ANNUAL MONITORING EVENT RESULTS AS WELL AS APPLICABLE DELINEATION WELL DATA. SURFACE WATER QUALITY DATA COLLECTED BY ARCADIS ON FEBRUARY 2, 2020
 4. GWPS IS EQUAL TO SITE SPECIFIC BACKGROUND CONCENTRATION AS THERE IS NO MCL AND THE RSL IS BELOW SITE SPECIFIC BACKGROUND

Analyte	Units	GWPS
Cobalt	mg/L	0.0322

REFERENCE

1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS SURVEYED BY METRO ENGINEERING 08/10/2020.

0 300 600

1 IN = 300 FT

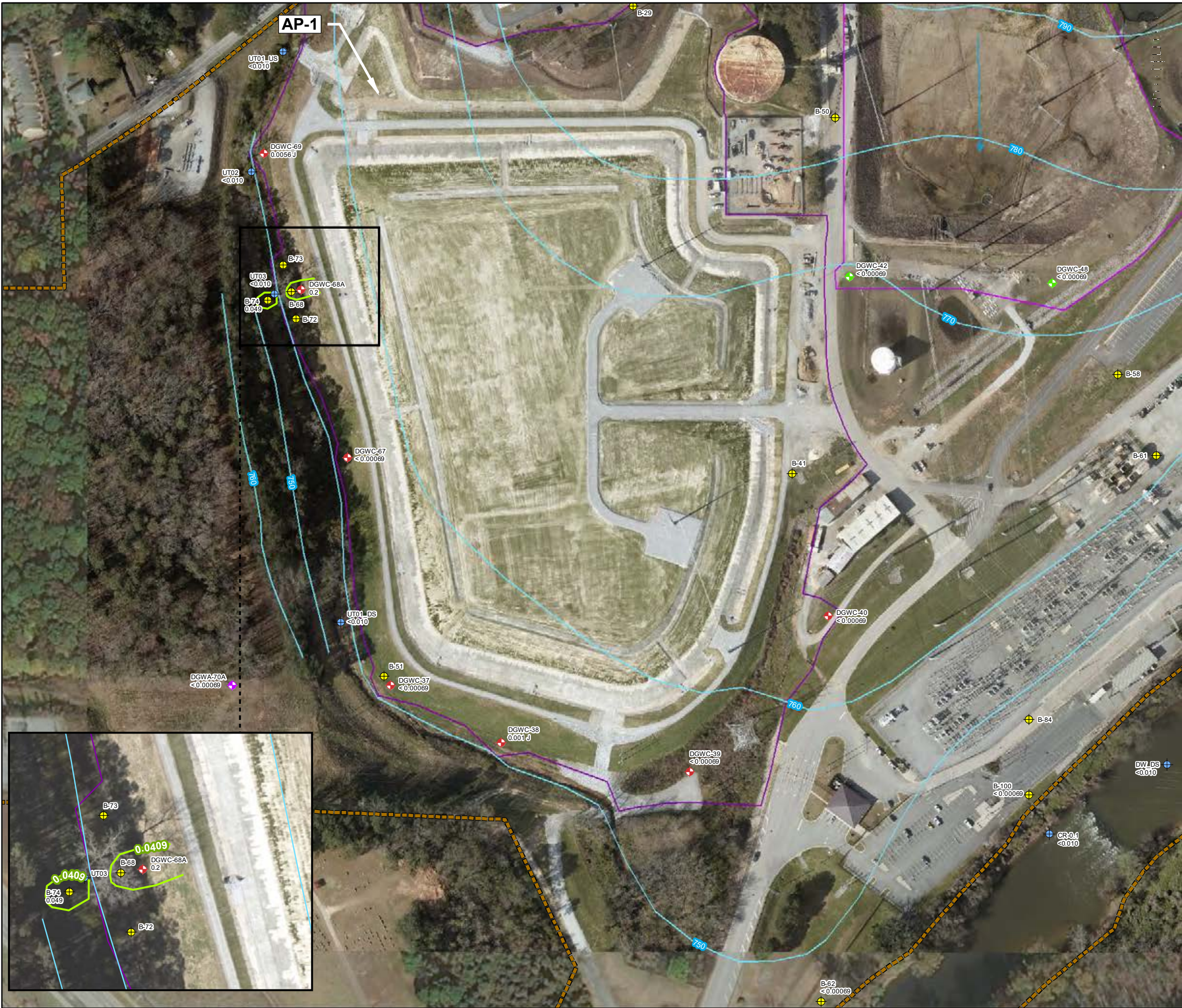
CLIENT
GEORGIA POWER COMPANY
 PLANT MCDONOUGH

PROJECT
 PLANT MCDONOUGH REMEDY SELECTION

TITLE
COBALT ISOCONCENTRATION CONTOUR MAP
SEPTEMBER 2020

CONSULTANT	YYYY-MM-DD	2021-01-22
	PREPARED	DJC
	DESIGN	DLP
	REVIEW	DLP
	APPROVED	TIR

GOLDER
PROJECT No. 166849621
Rev. 0
FIGURE 5



LEGEND

- PIEZOMETER
- AP-1 MONITORING WELL
- AP-2,3/4 MONITORING WELL
- UPGRADIENT WELL
- SURFACE WATER MONITORING LOCATION
- 0.0409 MOLYBDENUM GWPS ISOCONTOUR (INFERRED)
- PROPERTY BOUNDARY
- INFERRED POTENTIOMETRIC SURFACE CONTOUR (SEPT 20)
- PERMIT BOUNDARY

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE
2. GROUNDWATER CONCENTRATIONS IN MILLIGRAMS PER LITER (MG/L)
3. REPORTED CONCENTRATIONS AT DETECTION MONITORING WELLS ARE REPRESENTATIVE OF THE SEPTEMBER 2020 SAMPLING EVENT IN 2020. B-3 CONCENTRATIONS FROM AUGUST 2020 SAMPLING EVENT. SURFACE WATER QUALITY DATA COLLECTED BY ARCADIS ON FEBRUARY 2, 2021
4. GWPS IS EQUAL TO SITE SPECIFIC BACKGROUND CONCENTRATION AS THERE IS NO MCL AND THE RSL IS BELOW SITE SPECIFIC BACKGROUND

Analyte	Units	FED GWPS	STATE GWPS
Molybdenum	mg/L	0.1	0.0409

REFERENCE

1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS SURVEYED BY METRO ENGINEERING 08/10/2020.



CLIENT
 GEORGIA POWER COMPANY
 PLANT MCDONOUGH

PROJECT
 PLANT MCDONOUGH REMEDY SELECTION



TITLE
 MOLYBDENUM ISOCONCENTRATION CONTOUR MAP
 SEPTEMBER 2020

CONSULTANT	YYYY-MM-DD	2021-01-22
GOLDER	PREPARED	DJC
	DESIGN	DLP
	REVIEW	DLP
	APPROVED	TIR

Path: C:\Users\vdosca\OneDrive\Documents\1668496_SCS Plant McDonough GW Cont. Svcs GA - Project File\800_Shapefiles\MXD\Remedy Selection Work Plan\Figure 6 - AP1 Molybdenum Isoconcentration Map September 2020.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANS B

APPENDIX A

February 20, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

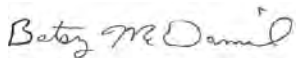
RE: Project: Plant McDonough Ash Ponds
Pace Project No.: 261016

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 22, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Kristen Jurinko, Golder Associates Inc.
Maria Padilla, Georgia Power - Coal Combustion
Residuals
Dawn Prell, Golder Associates Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Lab ID	Sample ID	Matrix	Date Collected	Date Received
261016001	DGWC-68	Water	01/22/18 11:50	01/22/18 17:10
261016002	EB-1	Water	01/22/18 12:30	01/22/18 17:10
261016003	FB-1	Water	01/22/18 11:35	01/22/18 17:10
261016004	FD-1	Water	01/22/18 00:00	01/22/18 17:10
261016005	DGWC-68	Water	01/22/18 11:50	01/22/18 17:10
261016006	EB-1	Water	01/22/18 12:30	01/22/18 17:10
261016007	FB-1	Water	01/22/18 11:35	01/22/18 17:10
261016008	FD-1	Water	01/22/18 00:00	01/22/18 17:10

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
261016001	DGWC-68	EPA 6020B	KLH	14	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
261016002	EB-1	EPA 6020B	KLH	14	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
261016003	FB-1	EPA 6020B	KLH	14	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
261016004	FD-1	EPA 6020B	KLH	14	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
261016005	DGWC-68	EPA 9315	JC2	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	JC2	1	PASI-PA
261016006	EB-1	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	JC2	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
261016007	FB-1	Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	JC2	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
261016008	FD-1	EPA 9315	JC2	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	JC2	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: DGWC-68		Lab ID: 261016001		Collected: 01/22/18 11:50		Received: 01/22/18 17:10		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	ug/L	3.0	0.60	1	01/31/18 15:28	02/01/18 14:28	7440-36-0		
Arsenic	536	ug/L	5.0	0.52	1	01/31/18 15:28	02/01/18 14:28	7440-38-2		
Barium	117	ug/L	10.0	0.42	1	01/31/18 15:28	02/01/18 14:28	7440-39-3		
Beryllium	ND	ug/L	3.0	0.091	1	01/31/18 15:28	02/01/18 14:28	7440-41-7		
Boron	1530	ug/L	40.0	6.0	1	01/31/18 15:28	02/02/18 17:53	7440-42-8		
Cadmium	ND	ug/L	1.0	0.14	1	01/31/18 15:28	02/01/18 14:28	7440-43-9		
Calcium	53400	ug/L	25000	2020	50	01/31/18 15:28	02/01/18 14:34	7440-70-2	M6	
Chromium	ND	ug/L	10.0	0.45	1	01/31/18 15:28	02/01/18 14:28	7440-47-3		
Cobalt	3.2J	ug/L	10.0	0.26	1	01/31/18 15:28	02/01/18 14:28	7440-48-4		
Lead	ND	ug/L	5.0	0.067	1	01/31/18 15:28	02/01/18 14:28	7439-92-1		
Lithium	ND	ug/L	50.0	1.5	1	01/31/18 15:28	02/01/18 14:28	7439-93-2	N2	
Molybdenum	225	ug/L	10.0	1.0	1	01/31/18 15:28	02/01/18 14:28	7439-98-7		
Selenium	ND	ug/L	10.0	1.8	1	01/31/18 15:28	02/01/18 14:28	7782-49-2		
Thallium	ND	ug/L	1.0	0.052	1	01/31/18 15:28	02/01/18 14:28	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	0.060J	ug/L	0.20	0.036	1	02/07/18 09:48	02/07/18 15:23	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	263	mg/L	10.0	10.0	1		01/26/18 18:10			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.8	mg/L	1.0	0.024	1		01/31/18 06:16	16887-00-6		
Fluoride	0.65	mg/L	0.10	0.029	1		01/31/18 06:16	16984-48-8		
Sulfate	28.4J	mg/L	50.0	0.17	10		02/05/18 18:00	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: EB-1		Lab ID: 261016002		Collected: 01/22/18 12:30		Received: 01/22/18 17:10		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	0.96J	ug/L	3.0	0.60	1	01/31/18 15:28	02/01/18 15:25	7440-36-0		
Arsenic	ND	ug/L	5.0	0.52	1	01/31/18 15:28	02/01/18 15:25	7440-38-2		
Barium	0.61J	ug/L	10.0	0.42	1	01/31/18 15:28	02/01/18 15:25	7440-39-3		
Beryllium	ND	ug/L	3.0	0.091	1	01/31/18 15:28	02/01/18 15:25	7440-41-7		
Boron	ND	ug/L	40.0	6.0	1	01/31/18 15:28	02/01/18 15:25	7440-42-8		
Cadmium	ND	ug/L	1.0	0.14	1	01/31/18 15:28	02/01/18 15:25	7440-43-9		
Calcium	45.4J	ug/L	500	40.4	1	01/31/18 15:28	02/01/18 15:25	7440-70-2		
Chromium	ND	ug/L	10.0	0.45	1	01/31/18 15:28	02/01/18 15:25	7440-47-3		
Cobalt	ND	ug/L	10.0	0.26	1	01/31/18 15:28	02/01/18 15:25	7440-48-4		
Lead	0.28J	ug/L	5.0	0.067	1	01/31/18 15:28	02/01/18 15:25	7439-92-1		
Lithium	ND	ug/L	50.0	1.5	1	01/31/18 15:28	02/01/18 15:25	7439-93-2	N2	
Molybdenum	ND	ug/L	10.0	1.0	1	01/31/18 15:28	02/01/18 15:25	7439-98-7		
Selenium	ND	ug/L	10.0	1.8	1	01/31/18 15:28	02/01/18 15:25	7782-49-2		
Thallium	ND	ug/L	1.0	0.052	1	01/31/18 15:28	02/01/18 15:25	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	0.076J	ug/L	0.20	0.036	1	02/07/18 09:48	02/07/18 15:26	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		01/26/18 18:10			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.025J	mg/L	1.0	0.024	1		02/05/18 18:23	16887-00-6	B	
Fluoride	ND	mg/L	0.10	0.029	1		02/05/18 18:23	16984-48-8		
Sulfate	ND	mg/L	5.0	0.017	1		02/05/18 18:23	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: FB-1		Lab ID: 261016003		Collected: 01/22/18 11:35		Received: 01/22/18 17:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	ug/L	3.0	0.60	1	01/31/18 15:28	02/01/18 15:31	7440-36-0	
Arsenic	ND	ug/L	5.0	0.52	1	01/31/18 15:28	02/01/18 15:31	7440-38-2	
Barium	0.62J	ug/L	10.0	0.42	1	01/31/18 15:28	02/01/18 15:31	7440-39-3	
Beryllium	ND	ug/L	3.0	0.091	1	01/31/18 15:28	02/01/18 15:31	7440-41-7	
Boron	ND	ug/L	40.0	6.0	1	01/31/18 15:28	02/01/18 15:31	7440-42-8	
Cadmium	ND	ug/L	1.0	0.14	1	01/31/18 15:28	02/01/18 15:31	7440-43-9	
Calcium	ND	ug/L	500	40.4	1	01/31/18 15:28	02/01/18 15:31	7440-70-2	
Chromium	ND	ug/L	10.0	0.45	1	01/31/18 15:28	02/01/18 15:31	7440-47-3	
Cobalt	ND	ug/L	10.0	0.26	1	01/31/18 15:28	02/01/18 15:31	7440-48-4	
Lead	0.074J	ug/L	5.0	0.067	1	01/31/18 15:28	02/01/18 15:31	7439-92-1	
Lithium	ND	ug/L	50.0	1.5	1	01/31/18 15:28	02/01/18 15:31	7439-93-2	N2
Molybdenum	ND	ug/L	10.0	1.0	1	01/31/18 15:28	02/01/18 15:31	7439-98-7	
Selenium	ND	ug/L	10.0	1.8	1	01/31/18 15:28	02/01/18 15:31	7782-49-2	
Thallium	ND	ug/L	1.0	0.052	1	01/31/18 15:28	02/01/18 15:31	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	0.050J	ug/L	0.20	0.036	1	02/07/18 09:48	02/07/18 15:35	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		01/30/18 15:59		H1
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	0.028J	mg/L	1.0	0.024	1		01/31/18 07:47	16887-00-6	B
Fluoride	ND	mg/L	0.10	0.029	1		01/31/18 07:47	16984-48-8	
Sulfate	ND	mg/L	5.0	0.017	1		01/31/18 07:47	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough Ash Ponds
Pace Project No.: 261016

Sample: FD-1		Lab ID: 261016004		Collected: 01/22/18 00:00		Received: 01/22/18 17:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	ug/L	3.0	0.60	1	01/31/18 15:28	02/01/18 15:37	7440-36-0	
Arsenic	473	ug/L	5.0	0.52	1	01/31/18 15:28	02/01/18 15:37	7440-38-2	
Barium	107	ug/L	10.0	0.42	1	01/31/18 15:28	02/01/18 15:37	7440-39-3	
Beryllium	ND	ug/L	3.0	0.091	1	01/31/18 15:28	02/01/18 15:37	7440-41-7	
Boron	1420	ug/L	40.0	6.0	1	01/31/18 15:28	02/02/18 17:59	7440-42-8	
Cadmium	ND	ug/L	1.0	0.14	1	01/31/18 15:28	02/01/18 15:37	7440-43-9	
Calcium	46600	ug/L	25000	2020	50	01/31/18 15:28	02/01/18 15:42	7440-70-2	
Chromium	ND	ug/L	10.0	0.45	1	01/31/18 15:28	02/01/18 15:37	7440-47-3	
Cobalt	3.0J	ug/L	10.0	0.26	1	01/31/18 15:28	02/01/18 15:37	7440-48-4	
Lead	ND	ug/L	5.0	0.067	1	01/31/18 15:28	02/01/18 15:37	7439-92-1	
Lithium	ND	ug/L	50.0	1.5	1	01/31/18 15:28	02/01/18 15:37	7439-93-2	
Molybdenum	215	ug/L	10.0	1.0	1	01/31/18 15:28	02/01/18 15:37	7439-98-7	
Selenium	ND	ug/L	10.0	1.8	1	01/31/18 15:28	02/01/18 15:37	7782-49-2	
Thallium	ND	ug/L	1.0	0.052	1	01/31/18 15:28	02/01/18 15:37	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	0.057J	ug/L	0.20	0.036	1	02/07/18 09:48	02/07/18 15:37	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	266	mg/L	10.0	10.0	1		01/26/18 18:11		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.8	mg/L	1.0	0.024	1		02/06/18 18:08	16887-00-6	
Fluoride	0.57	mg/L	0.10	0.029	1		02/06/18 18:08	16984-48-8	
Sulfate	28.7J	mg/L	50.0	0.17	10		02/05/18 18:45	14808-79-8	

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QUALITY CONTROL DATA

Project: Plant McDonough Ash Ponds
Pace Project No.: 261016

QC Batch: 630 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 261016001, 261016002, 261016003, 261016004

METHOD BLANK: 5209 Matrix: Water
Associated Lab Samples: 261016001, 261016002, 261016003, 261016004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.036	02/07/18 15:07	

LABORATORY CONTROL SAMPLE: 5210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5211 5212

Parameter	Units	261048001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.5	98	101	75-125	3	20	

SAMPLE DUPLICATE: 5213

Parameter	Units	261048001 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	ug/L	ND	ND		20	

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

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QUALITY CONTROL DATA

Project: Plant McDonough Ash Ponds
Pace Project No.: 261016

QC Batch: 310 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 261016001, 261016002, 261016003, 261016004

METHOD BLANK: 1716 Matrix: Water
Associated Lab Samples: 261016001, 261016002, 261016003, 261016004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	3.0	0.60	02/01/18 14:05	
Arsenic	ug/L	ND	5.0	0.52	02/01/18 14:05	
Barium	ug/L	ND	10.0	0.42	02/01/18 14:05	
Beryllium	ug/L	ND	3.0	0.091	02/01/18 14:05	
Boron	ug/L	ND	40.0	6.0	02/01/18 14:05	
Cadmium	ug/L	ND	1.0	0.14	02/01/18 14:05	
Calcium	ug/L	ND	500	40.4	02/01/18 14:05	
Chromium	ug/L	ND	10.0	0.45	02/01/18 14:05	
Cobalt	ug/L	ND	10.0	0.26	02/01/18 14:05	
Lead	ug/L	ND	5.0	0.067	02/01/18 14:05	
Lithium	ug/L	ND	50.0	1.5	02/01/18 14:05	
Molybdenum	ug/L	ND	10.0	1.0	02/01/18 14:05	
Selenium	ug/L	ND	10.0	1.8	02/01/18 14:05	
Thallium	ug/L	ND	1.0	0.052	02/01/18 14:05	

LABORATORY CONTROL SAMPLE: 1717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	100	113	113	80-120	
Arsenic	ug/L	100	103	103	80-120	
Barium	ug/L	100	105	105	80-120	
Beryllium	ug/L	100	109	109	80-120	
Boron	ug/L	1000	1110	111	80-120	
Cadmium	ug/L	100	105	105	80-120	
Calcium	ug/L	1000	1050	105	80-120	
Chromium	ug/L	100	106	106	80-120	
Cobalt	ug/L	100	102	102	80-120	
Lead	ug/L	100	101	101	80-120	
Lithium	ug/L	100	107	107	80-120	
Molybdenum	ug/L	100	107	107	80-120	
Selenium	ug/L	100	103	103	80-120	
Thallium	ug/L	100	103	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1766 1765

Parameter	Units	261016001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	ND	100	100	111	113	111	113	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1766												1765	
Parameter	Units	261016001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Arsenic	ug/L	536	100	100	606	624	70	88	75-125	3	20		
Barium	ug/L	117	100	100	215	222	98	105	75-125	3	20		
Beryllium	ug/L	ND	100	100	99.5	103	99	103	75-125	3	20		
Boron	ug/L	1530	1000	1000	2470	2470	94	93	75-125	0	20		
Cadmium	ug/L	ND	100	100	101	105	101	105	75-125	3	20		
Calcium	ug/L	53400	1000	1000	50100	52600	-321	-79	75-125	5	20 M6		
Chromium	ug/L	ND	100	100	103	105	103	105	75-125	2	20		
Cobalt	ug/L	3.2J	100	100	102	103	99	100	75-125	1	20		
Lead	ug/L	ND	100	100	97.4	99.2	97	99	75-125	2	20		
Lithium	ug/L	ND	100	100	97.4	99.9	96	99	75-125	3	20		
Molybdenum	ug/L	225	100	100	316	322	91	97	75-125	2	20		
Selenium	ug/L	ND	100	100	98.9	100	98	100	75-125	2	20		
Thallium	ug/L	ND	100	100	100	99.6	100	100	75-125	0	20		

SAMPLE DUPLICATE: 1718

Parameter	Units	92371048001	Dup	RPD	Max RPD	Qualifiers
		Result	Result			
Antimony	ug/L	ND	ND		20	
Arsenic	ug/L	ND	ND		20	
Barium	ug/L	23.1	22.6	2	20	
Beryllium	ug/L	ND	ND		20	
Boron	ug/L	ND	ND		20	
Cadmium	ug/L	ND	ND		20	
Calcium	ug/L	2390	2460	3	20	
Chromium	ug/L	ND	0.56J		20	
Cobalt	ug/L	43.6	43.5	0	20	
Lead	ug/L	ND	0.11J		20	
Lithium	ug/L	ND	ND		20	
Molybdenum	ug/L	ND	ND		20	
Selenium	ug/L	ND	ND		20	
Thallium	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

QC Batch: 128

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 261016001, 261016002, 261016004

LABORATORY CONTROL SAMPLE: 837

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	393	98	84-108	

SAMPLE DUPLICATE: 838

Parameter	Units	261016001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	263	261	1	10	

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QUALITY CONTROL DATA

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

QC Batch: 227	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 261016003	

LABORATORY CONTROL SAMPLE: 1281

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	378	94	84-108	

SAMPLE DUPLICATE: 1282

Parameter	Units	261016003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	H1

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QUALITY CONTROL DATA

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

QC Batch: 263 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 261016001, 261016002, 261016003, 261016004

METHOD BLANK: 1503 Matrix: Water
 Associated Lab Samples: 261016001, 261016002, 261016003, 261016004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.030J	1.0	0.024	01/31/18 04:48	
Fluoride	mg/L	ND	0.10	0.029	01/31/18 04:48	
Sulfate	mg/L	ND	5.0	0.017	01/31/18 04:48	

LABORATORY CONTROL SAMPLE: 1504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.1	101	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1505 1506

Parameter	Units	1505		1506		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		261016001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	3.8	10	10	13.9	14.0	101	101	90-110	1	15
Fluoride	mg/L	0.65	10	10	10.7	10.8	101	102	90-110	1	15
Sulfate	mg/L	28.4J	10	10	37.8	38.1	94	97	90-110	1	15

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: DGWC-68 **Lab ID: 261016005** Collected: 01/22/18 11:50 Received: 01/22/18 17:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.829 ± 0.347 (0.357) C:91% T:NA	pCi/L	02/09/18 08:29	13982-63-3	
Radium-228	EPA 9320	0.447 ± 0.306 (0.580) C:81% T:85%	pCi/L	02/12/18 14:57	15262-20-1	
Total Radium	Total Radium Calculation	1.28 ± 0.653 (0.937)	pCi/L	02/14/18 13:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: EB-1 **Lab ID: 261016006** Collected: 01/22/18 12:30 Received: 01/22/18 17:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.397 ± 0.262 (0.387) C:81% T:NA	pCi/L	02/09/18 08:29	13982-63-3	
Radium-228	EPA 9320	0.310 ± 0.276 (0.553) C:79% T:90%	pCi/L	02/12/18 14:57	15262-20-1	
Total Radium	Total Radium Calculation	0.707 ± 0.538 (0.940)	pCi/L	02/14/18 13:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: FB-1 **Lab ID: 261016007** Collected: 01/22/18 11:35 Received: 01/22/18 17:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0991 ± 0.176 (0.397) C:83% T:NA	pCi/L	02/09/18 08:29	13982-63-3	
Radium-228	EPA 9320	0.348 ± 0.325 (0.662) C:82% T:81%	pCi/L	02/12/18 14:58	15262-20-1	
Total Radium	Total Radium Calculation	0.447 ± 0.501 (1.06)	pCi/L	02/14/18 13:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

Sample: FD-1 **Lab ID: 261016008** Collected: 01/22/18 00:00 Received: 01/22/18 17:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.31 ± 0.488 (0.441) C:67% T:NA	pCi/L	02/09/18 09:59	13982-63-3	
Radium-228	EPA 9320	0.293 ± 0.263 (0.525) C:79% T:89%	pCi/L	02/12/18 14:58	15262-20-1	
Total Radium	Total Radium Calculation	1.60 ± 0.751 (0.966)	pCi/L	02/14/18 13:59	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

QC Batch: 287241 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 261016005, 261016006, 261016007, 261016008

METHOD BLANK: 1408135 Matrix: Water

Associated Lab Samples: 261016005, 261016006, 261016007, 261016008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.203 ± 0.190 (0.337) C:93% T:NA	pCi/L	02/09/18 08:29	

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QUALIFIERS

Project: Plant McDonough Ash Ponds

Pace Project No.: 261016

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

H1 Analysis conducted outside the EPA method holding time.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Ash Ponds

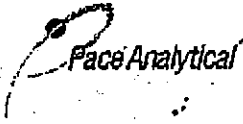
Pace Project No.: 261016

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
261016001	DGWC-68	EPA 3005A	310	EPA 6020B	327
261016002	EB-1	EPA 3005A	310	EPA 6020B	327
261016003	FB-1	EPA 3005A	310	EPA 6020B	327
261016004	FD-1	EPA 3005A	310	EPA 6020B	327
261016001	DGWC-68	EPA 7470A	630	EPA 7470A	644
261016002	EB-1	EPA 7470A	630	EPA 7470A	644
261016003	FB-1	EPA 7470A	630	EPA 7470A	644
261016004	FD-1	EPA 7470A	630	EPA 7470A	644
261016005	DGWC-68	EPA 9315	287241		
261016006	EB-1	EPA 9315	287241		
261016007	FB-1	EPA 9315	287241		
261016008	FD-1	EPA 9315	287241		
261016005	DGWC-68	EPA 9320	287242		
261016006	EB-1	EPA 9320	287242		
261016007	FB-1	EPA 9320	287242		
261016008	FD-1	EPA 9320	287242		
261016005	DGWC-68	Total Radium Calculation	288095		
261016006	EB-1	Total Radium Calculation	288095		
261016007	FB-1	Total Radium Calculation	288095		
261016008	FD-1	Total Radium Calculation	288095		
261016001	DGWC-68	SM 2540C	128		
261016002	EB-1	SM 2540C	128		
261016003	FB-1	SM 2540C	227		
261016004	FD-1	SM 2540C	128		
261016001	DGWC-68	EPA 300.0	263		
261016002	EB-1	EPA 300.0	263		
261016003	FB-1	EPA 300.0	263		
261016004	FD-1	EPA 300.0	263		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GIA Powere

Project # _____

WO#: 261016

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

PM: BM Due Date: 01/30/18

Custody Seal on Cooler/Box Present: yes no Seals intact: yes

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THA-083 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4.3 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1/22/18 MR

Comments: _____

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>GIA</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

February 08, 2018

Kristen Jurinko
Golder Associates - Atlanta
3730 Chamblee Tucker Road
Atlanta, GA 30341

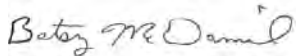
RE: Project: McDonough Advanced Engineering
Pace Project No.: 261081

Dear Kristen Jurinko:

Enclosed are the analytical results for sample(s) received by the laboratory on January 24, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Lab ID	Sample ID	Matrix	Date Collected	Date Received
261081001	DGWC-42	Water	01/23/18 13:35	01/24/18 13:00
261081002	B-50	Water	01/23/18 10:35	01/24/18 13:00
261081003	DGWA-70A	Water	01/23/18 09:05	01/24/18 13:00
261081004	B-28	Water	01/23/18 15:10	01/24/18 13:00
261081005	DGWC-37	Water	01/23/18 14:30	01/24/18 13:00
261081006	DGWC-38	Water	01/23/18 12:30	01/24/18 13:00
261081007	DGWC-39	Water	01/23/18 10:25	01/24/18 13:00

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SAMPLE ANALYTE COUNT

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Lab ID	Sample ID	Method	Analysts	Analytes Reported
261081001	DGWC-42	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261081002	B-50	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261081003	DGWA-70A	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261081004	B-28	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261081005	DGWC-37	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261081006	DGWC-38	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261081007	DGWC-39	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Sample: DGWC-42		Lab ID: 261081001		Collected: 01/23/18 13:35		Received: 01/24/18 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 17:24	7440-38-2	
Calcium	45700	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 17:29	7440-70-2	
Iron	523	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 17:24	7439-89-6	N2
Magnesium	36500	ug/L	2500	314	50	01/29/18 12:37	02/05/18 17:29	7439-95-4	
Manganese	11100	ug/L	500	38.2	50	01/29/18 12:37	02/05/18 17:29	7439-96-5	
Potassium	5970	ug/L	100	16.5	1	01/29/18 12:37	02/05/18 17:24	7440-09-7	
Sodium	58700	ug/L	5000	674	50	01/29/18 12:37	02/05/18 17:29	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 22:17	7440-38-2	
Iron, Dissolved	415	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 22:17	7439-89-6	N2
Manganese, Dissolved	10500	ug/L	500	38.2	50	01/31/18 15:52	02/02/18 19:20	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	26.2	mg/L	12.5	1.2	50		02/05/18 19:08	16887-00-6	M1
Sulfate	349	mg/L	50.0	0.85	50		02/05/18 19:08	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Sample: B-50		Lab ID: 261081002		Collected: 01/23/18 10:35		Received: 01/24/18 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	4.3J	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 17:52	7440-38-2	
Calcium	64800	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 17:58	7440-70-2	
Iron	3590	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 17:52	7439-89-6	N2
Magnesium	24500	ug/L	2500	314	50	01/29/18 12:37	02/05/18 17:58	7439-95-4	
Manganese	12200	ug/L	500	38.2	50	01/29/18 12:37	02/05/18 17:58	7439-96-5	
Potassium	9460	ug/L	100	16.5	1	01/29/18 12:37	02/06/18 15:15	7440-09-7	
Sodium	21600	ug/L	5000	674	50	01/29/18 12:37	02/05/18 17:58	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	4.5J	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 22:22	7440-38-2	
Iron, Dissolved	3700	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 22:22	7439-89-6	N2
Manganese, Dissolved	11600	ug/L	500	38.2	50	01/31/18 15:52	02/02/18 19:26	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	16.3	mg/L	0.25	0.024	1		01/26/18 20:11	16887-00-6	M1
Sulfate	426	mg/L	50.0	0.85	50		02/05/18 19:31	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering
Pace Project No.: 261081

Sample: DGWA-70A		Lab ID: 261081003		Collected: 01/23/18 09:05		Received: 01/24/18 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 18:04	7440-38-2	
Calcium	4950	ug/L	500	40.4	1	01/29/18 12:37	02/05/18 18:04	7440-70-2	
Iron	182	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 18:04	7439-89-6	N2
Magnesium	2180	ug/L	50.0	6.3	1	01/29/18 12:37	02/05/18 18:04	7439-95-4	
Manganese	21.2	ug/L	10.0	0.76	1	01/29/18 12:37	02/05/18 18:04	7439-96-5	
Potassium	1660	ug/L	100	16.5	1	01/29/18 12:37	02/06/18 15:21	7440-09-7	
Sodium	3610	ug/L	100	13.5	1	01/29/18 12:37	02/05/18 18:04	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 22:28	7440-38-2	
Iron, Dissolved	27.9J	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 22:28	7439-89-6	N2
Manganese, Dissolved	18.1	ug/L	10.0	0.76	1	01/31/18 15:52	02/01/18 22:28	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.4	mg/L	0.25	0.024	1		01/26/18 20:32	16887-00-6	
Sulfate	0.67J	mg/L	1.0	0.017	1		01/26/18 20:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Sample: B-28		Lab ID: 261081004		Collected: 01/23/18 15:10		Received: 01/24/18 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 18:15	7440-38-2	
Calcium	52100	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 18:21	7440-70-2	
Iron	6.4J	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 18:15	7439-89-6	N2
Magnesium	27700	ug/L	2500	314	50	01/29/18 12:37	02/05/18 18:21	7439-95-4	
Manganese	1010	ug/L	500	38.2	50	01/29/18 12:37	02/05/18 18:21	7439-96-5	
Potassium	4910	ug/L	100	16.5	1	01/29/18 12:37	02/06/18 15:27	7440-09-7	
Sodium	22700	ug/L	5000	674	50	01/29/18 12:37	02/05/18 18:21	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 22:34	7440-38-2	
Iron, Dissolved	ND	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 22:34	7439-89-6	N2
Manganese, Dissolved	1010	ug/L	50.0	3.8	5	01/31/18 15:52	02/02/18 19:14	7439-96-5	M1
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	27.0	mg/L	6.2	0.60	25		02/05/18 19:54	16887-00-6	
Sulfate	277	mg/L	25.0	0.42	25		02/05/18 19:54	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Sample: DGWC-37		Lab ID: 261081005		Collected: 01/23/18 14:30		Received: 01/24/18 13:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 18:27	7440-38-2		
Calcium	57700	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 18:32	7440-70-2		
Iron	122	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 18:27	7439-89-6	N2	
Magnesium	12300	ug/L	2500	314	50	01/29/18 12:37	02/05/18 18:32	7439-95-4		
Manganese	154	ug/L	10.0	0.76	1	01/29/18 12:37	02/05/18 18:27	7439-96-5		
Potassium	4160	ug/L	100	16.5	1	01/29/18 12:37	02/06/18 15:32	7440-09-7		
Sodium	10500	ug/L	5000	674	50	01/29/18 12:37	02/05/18 18:32	7440-23-5		
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 23:08	7440-38-2		
Iron, Dissolved	70.5	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 23:08	7439-89-6	N2	
Manganese, Dissolved	153	ug/L	10.0	0.76	1	01/31/18 15:52	02/01/18 23:08	7439-96-5		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	6.3	mg/L	0.25	0.024	1		01/26/18 21:16	16887-00-6		
Sulfate	102	mg/L	10.0	0.17	10		02/05/18 20:17	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Sample: DGWC-38		Lab ID: 261081006		Collected: 01/23/18 12:30	Received: 01/24/18 13:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 18:38	7440-38-2		
Calcium	79900	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 18:44	7440-70-2		
Iron	22.1J	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 18:38	7439-89-6	N2	
Magnesium	27200	ug/L	2500	314	50	01/29/18 12:37	02/05/18 18:44	7439-95-4		
Manganese	649	ug/L	10.0	0.76	1	01/29/18 12:37	02/05/18 18:38	7439-96-5		
Potassium	4180	ug/L	100	16.5	1	01/29/18 12:37	02/06/18 15:38	7440-09-7		
Sodium	10900	ug/L	5000	674	50	01/29/18 12:37	02/05/18 18:44	7440-23-5		
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 23:14	7440-38-2		
Iron, Dissolved	ND	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 23:14	7439-89-6	N2	
Manganese, Dissolved	645	ug/L	10.0	0.76	1	01/31/18 15:52	02/01/18 23:14	7439-96-5		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	8.2	mg/L	0.25	0.024	1		01/26/18 21:38	16887-00-6		
Sulfate	238	mg/L	25.0	0.42	25		02/05/18 20:39	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261081

Sample: DGWC-39		Lab ID: 261081007		Collected: 01/23/18 10:25		Received: 01/24/18 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 19:27	7440-38-2	
Calcium	81500	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 19:33	7440-70-2	
Iron	11300	ug/L	2000	214	50	01/29/18 12:37	02/05/18 19:33	7439-89-6	N2
Magnesium	19700	ug/L	2500	314	50	01/29/18 12:37	02/05/18 19:33	7439-95-4	
Manganese	11300	ug/L	500	38.2	50	01/29/18 12:37	02/05/18 19:33	7439-96-5	
Potassium	2360	ug/L	100	16.5	1	01/29/18 12:37	02/06/18 15:44	7440-09-7	
Sodium	11000	ug/L	5000	674	50	01/29/18 12:37	02/05/18 19:33	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 23:20	7440-38-2	
Iron, Dissolved	9350	ug/L	2000	214	50	01/31/18 15:52	02/02/18 19:31	7439-89-6	N2
Manganese, Dissolved	11300	ug/L	500	38.2	50	01/31/18 15:52	02/02/18 19:31	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.2	mg/L	0.25	0.024	1		01/26/18 21:59	16887-00-6	
Sulfate	181	mg/L	10.0	0.17	10		02/05/18 21:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering

Pace Project No.: 261081

QC Batch: 121 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 261081001, 261081002, 261081003, 261081004, 261081005, 261081006, 261081007

METHOD BLANK: 806 Matrix: Water
 Associated Lab Samples: 261081001, 261081002, 261081003, 261081004, 261081005, 261081006, 261081007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	0.52	02/06/18 13:34	
Calcium	ug/L	ND	500	40.4	02/06/18 13:34	
Iron	ug/L	ND	40.0	4.3	02/06/18 13:34	N2
Magnesium	ug/L	ND	50.0	6.3	02/06/18 13:34	
Manganese	ug/L	ND	10.0	0.76	02/06/18 13:34	
Potassium	ug/L	ND	100	16.5	02/06/18 13:34	
Sodium	ug/L	ND	100	13.5	02/06/18 13:34	

LABORATORY CONTROL SAMPLE: 807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	96.7	97	80-120	
Calcium	ug/L	1000	942	94	80-120	
Iron	ug/L	1000	988	99	80-120	N2
Magnesium	ug/L	1000	1000	100	80-120	
Manganese	ug/L	100	102	102	80-120	
Potassium	ug/L	1000	925	92	80-120	
Sodium	ug/L	1000	977	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 808 809

Parameter	Units	MS		MSD		% Rec		% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result	% Rec	% Rec				
Arsenic	ug/L	ND	100	100	98.1	99.8	98	100	75-125	2	20
Calcium	ug/L	5800	1000	1000	6660	6870	85	106	75-125	3	20
Iron	ug/L	57.6	1000	1000	1270	1280	100	101	75-125	1	20 N2
Magnesium	ug/L	941	1000	1000	1940	1950	100	101	75-125	1	20
Manganese	ug/L	98.7	100	100	200	206	100	106	75-125	3	20
Potassium	ug/L	745	1000	1000	1760	1760	102	101	75-125	0	20
Sodium	ug/L	8970	1000	1000	9730	9950	76	97	75-125	2	20

SAMPLE DUPLICATE: 810

Parameter	Units	261048003 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	ug/L	ND	ND		20	
Calcium	ug/L	3860	3890	1	20	
Iron	ug/L	841	884	5	20	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering

Pace Project No.: 261081

SAMPLE DUPLICATE: 810

Parameter	Units	261048003 Result	Dup Result	RPD	Max RPD	Qualifiers
Magnesium	ug/L	1360	1420	4	20	
Manganese	ug/L	16.9	18.2	7	20	
Potassium	ug/L	2630	2660	1	20	
Sodium	ug/L	5090	5270	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261081

QC Batch: 262 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 261081001, 261081002, 261081003, 261081004, 261081005, 261081006, 261081007

METHOD BLANK: 1501 Matrix: Water
Associated Lab Samples: 261081001, 261081002, 261081003, 261081004, 261081005, 261081006, 261081007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	0.52	02/01/18 21:48	
Iron, Dissolved	ug/L	ND	40.0	4.3	02/01/18 21:48	N2
Manganese, Dissolved	ug/L	ND	10.0	0.76	02/01/18 21:48	

LABORATORY CONTROL SAMPLE: 1502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	104	104	80-120	
Iron, Dissolved	ug/L	1000	1090	109	80-120	N2
Manganese, Dissolved	ug/L	100	109	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1781 1782

Parameter	Units	261081004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	100	100	107	104	107	104	75-125	2	20	
Iron, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20	N2
Manganese, Dissolved	ug/L	1010	100	100	1100	1070	86	60	75-125	2	20	M1

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261081

QC Batch: 137 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 261081001, 261081002, 261081003, 261081004, 261081005, 261081006, 261081007

METHOD BLANK: 893 Matrix: Water
Associated Lab Samples: 261081001, 261081002, 261081003, 261081004, 261081005, 261081006, 261081007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	01/26/18 17:40	
Sulfate	mg/L	ND	1.0	0.017	01/26/18 17:40	

LABORATORY CONTROL SAMPLE: 894

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 895 896

Parameter	Units	261081001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	26.2	10	10	35.0	35.0	88	88	90-110	0	15	M1
Sulfate	mg/L	349	10	10	229	229	-1200	-1200	90-110	0	15	M1

MATRIX SPIKE SAMPLE: 897

Parameter	Units	261081002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	16.3	10	24.1	78	90-110	M1
Sulfate	mg/L	426	10	251	-1750	90-110	M1

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QUALIFIERS

Project: McDonough Advanced Engineering
Pace Project No.: 261081

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: McDonough Advanced Engineering
Pace Project No.: 261081

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
261081001	DGWC-42	EPA 3005A	121	EPA 6020B	191
261081002	B-50	EPA 3005A	121	EPA 6020B	191
261081003	DGWA-70A	EPA 3005A	121	EPA 6020B	191
261081004	B-28	EPA 3005A	121	EPA 6020B	191
261081005	DGWC-37	EPA 3005A	121	EPA 6020B	191
261081006	DGWC-38	EPA 3005A	121	EPA 6020B	191
261081007	DGWC-39	EPA 3005A	121	EPA 6020B	191
261081001	DGWC-42	EPA 3005A	262	EPA 6020B	328
261081002	B-50	EPA 3005A	262	EPA 6020B	328
261081003	DGWA-70A	EPA 3005A	262	EPA 6020B	328
261081004	B-28	EPA 3005A	262	EPA 6020B	328
261081005	DGWC-37	EPA 3005A	262	EPA 6020B	328
261081006	DGWC-38	EPA 3005A	262	EPA 6020B	328
261081007	DGWC-39	EPA 3005A	262	EPA 6020B	328
261081001	DGWC-42	EPA 300.0	137		
261081002	B-50	EPA 300.0	137		
261081003	DGWA-70A	EPA 300.0	137		
261081004	B-28	EPA 300.0	137		
261081005	DGWC-37	EPA 300.0	137		
261081006	DGWC-38	EPA 300.0	137		
261081007	DGWC-39	EPA 300.0	137		

REPORT OF LABORATORY ANALYSIS

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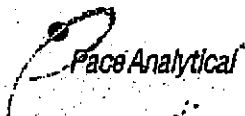
CHAIN OF CUSTODY RECORD



Pace Analytical Services, Inc.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:	P	P	P											
Georgia Power					PRESERVATION:	7	3&7	3&7											
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-508-7239					# of														
REPORT TO: Tim Richards (Tim_Richards@golder.com)					CONTAINERS	CI, SO4 EPA 9056	*Metals, Dissolved (EPA 6010/8020) (field filtered) As, Fe, Mn	*Metals (EPA 6010/8020) As, Ca, Fe, Mg, Mn, Na, K											
REQUESTED COMPLETION DATE: PO #: laburch@southernco.com																			
PROJECT NAME/STATE: Plant McDonough AP- AE Sampling																			
PROJECT #: 1779172																			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION														
01/23/18	1335	GW		x	DGWC-42	3	1	1	1									1	
01/23/18	1035	GW		x	B-50	3	1	1	1									2	
01/23/18	0905	GW		x	DGWA-70A	3	1	1	1									3	
01/23/18	1510	GW		x	B-28	3	1	1	1									4	
01/23/18	1430	GW		x	DGWC-37	3	1	1	1									5	
01/23/18	1230	GW		x	DGWC-38	3	1	1	1									6	
01/23/18	1025	GW		x	DGWC-39	3	1	1	1									7	
SAMPLED BY AND TITLE: Ben Hodges Field Lead					DATE/TIME: 1/24/18 1000	RELINQUISHED BY: <i>[Signature]</i>					DATE/TIME: 1/24/18 093	WO#: 261081							
RECEIVED BY: Mike Nguyen					DATE/TIME: 1/24/18 0930	RELINQUISHED BY:					DATE/TIME:								
RECEIVED BY LAB: <i>[Signature]</i>					DATE/TIME: 01/24/18 1300	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <i>[Signature]</i> CLIENT OTHER F:					 261081								
Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present					Temperature: Min: 23 Max:	# of Cores:										Color ID:			

Sample Condition Upon Receipt



Client Name: Golder Associates Project # _____

WO#: 261081

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

PM: BM

Due Date: 01/31/18

CLIENT: Golder-ATL

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used THR-083 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature _____

Biological Tissue Is Frozen: Yes No

Date and Initials of person examining contents: 1/24/18 MR

Temp should be above freezing to 6°C

Comments: _____

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix	<u>GW</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, G&G, W-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

February 09, 2018

Kristen Jurinko
Golder Associates - Atlanta
3730 Chamblee Tucker Road
Atlanta, GA 30341

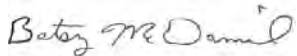
RE: Project: McDonough Advanced Engineering
Pace Project No.: 261131

Dear Kristen Jurinko:

Enclosed are the analytical results for sample(s) received by the laboratory on January 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: McDonough Advanced Engineering

Pace Project No.: 261131

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: McDonough Advanced Engineering

Pace Project No.: 261131

Lab ID	Sample ID	Matrix	Date Collected	Date Received
261032003	DGWC-68	Water	01/22/18 11:50	01/23/18 12:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: McDonough Advanced Engineering

Pace Project No.: 261131

Lab ID	Sample ID	Method	Analysts	Analytes Reported
261032003	DGWC-68	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering
Pace Project No.: 261131

Sample: DGWC-68		Lab ID: 261032003		Collected: 01/22/18 11:50		Received: 01/23/18 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	467	ug/L	5.0	0.52	1	01/29/18 12:37	02/05/18 17:12	7440-38-2	
Calcium	49700	ug/L	25000	2020	50	01/29/18 12:37	02/05/18 17:18	7440-70-2	
Iron	5260	ug/L	40.0	4.3	1	01/29/18 12:37	02/05/18 17:12	7439-89-6	
Magnesium	12100	ug/L	2500	314	50	01/29/18 12:37	02/05/18 17:18	7439-95-4	
Manganese	5520	ug/L	500	38.2	50	01/29/18 12:37	02/05/18 17:18	7439-96-5	
Potassium	4750	ug/L	100	16.5	1	01/29/18 12:37	02/05/18 17:12	7440-09-7	
Sodium	8000	ug/L	100	13.5	1	01/29/18 12:37	02/05/18 17:12	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	447	ug/L	5.0	0.52	1	01/31/18 15:52	02/01/18 22:11	7440-38-2	
Iron, Dissolved	4760	ug/L	40.0	4.3	1	01/31/18 15:52	02/01/18 22:11	7439-89-6	
Manganese, Dissolved	5130	ug/L	100	7.6	10	01/31/18 15:52	02/05/18 14:15	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.8	mg/L	0.25	0.024	1		01/24/18 21:31	16887-00-6	
Sulfate	30.2	mg/L	10.0	0.17	10		02/05/18 16:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261131

QC Batch: 121 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 261032003

METHOD BLANK: 806 Matrix: Water
Associated Lab Samples: 261032003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	0.52	02/06/18 13:34	
Calcium	ug/L	ND	500	40.4	02/06/18 13:34	
Iron	ug/L	ND	40.0	4.3	02/06/18 13:34	
Magnesium	ug/L	ND	50.0	6.3	02/06/18 13:34	
Manganese	ug/L	ND	10.0	0.76	02/06/18 13:34	
Potassium	ug/L	ND	100	16.5	02/06/18 13:34	
Sodium	ug/L	ND	100	13.5	02/06/18 13:34	

LABORATORY CONTROL SAMPLE: 807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	96.7	97	80-120	
Calcium	ug/L	1000	942	94	80-120	
Iron	ug/L	1000	988	99	80-120	
Magnesium	ug/L	1000	1000	100	80-120	
Manganese	ug/L	100	102	102	80-120	
Potassium	ug/L	1000	925	92	80-120	
Sodium	ug/L	1000	977	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 808 809

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Arsenic	ug/L	ND	100	100	98.1	99.8	98	100	75-125	2	20
Calcium	ug/L	5800	1000	1000	6660	6870	85	106	75-125	3	20
Iron	ug/L	57.6	1000	1000	1270	1280	100	101	75-125	1	20
Magnesium	ug/L	941	1000	1000	1940	1950	100	101	75-125	1	20
Manganese	ug/L	98.7	100	100	200	206	100	106	75-125	3	20
Potassium	ug/L	745	1000	1000	1760	1760	102	101	75-125	0	20
Sodium	ug/L	8970	1000	1000	9730	9950	76	97	75-125	2	20

SAMPLE DUPLICATE: 810

Parameter	Units	261048003 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	ug/L	ND	ND		20	
Calcium	ug/L	3860	3890	1	20	
Iron	ug/L	841	884	5	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering

Pace Project No.: 261131

SAMPLE DUPLICATE: 810

Parameter	Units	261048003 Result	Dup Result	RPD	Max RPD	Qualifiers
Magnesium	ug/L	1360	1420	4	20	
Manganese	ug/L	16.9	18.2	7	20	
Potassium	ug/L	2630	2660	1	20	
Sodium	ug/L	5090	5270	3	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261131

QC Batch: 262 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 261032003

METHOD BLANK: 1501 Matrix: Water
Associated Lab Samples: 261032003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	0.52	02/01/18 21:48	
Iron, Dissolved	ug/L	ND	40.0	4.3	02/01/18 21:48	
Manganese, Dissolved	ug/L	ND	10.0	0.76	02/01/18 21:48	

LABORATORY CONTROL SAMPLE: 1502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	104	104	80-120	
Iron, Dissolved	ug/L	1000	1090	109	80-120	
Manganese, Dissolved	ug/L	100	109	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1781 1782

Parameter	Units	261081004		1782		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Arsenic, Dissolved	ug/L	ND	100	100	107	104	107	104	75-125	2	20		
Iron, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20		
Manganese, Dissolved	ug/L	1010	100	100	1100	1070	86	60	75-125	2	20	M1	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering

Pace Project No.: 261131

QC Batch: 39 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Associated Lab Samples: 261032003

METHOD BLANK: 291 Matrix: Water

Associated Lab Samples: 261032003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	01/24/18 17:11	
Sulfate	mg/L	ND	1.0	0.017	01/24/18 17:11	

LABORATORY CONTROL SAMPLE: 292

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 293 294

Parameter	Units	261032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.8	10	10	13.5	13.4	96	96	90-110	0	15	
Sulfate	mg/L	7.6	10	10	17.2	17.2	96	96	90-110	0	15	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: McDonough Advanced Engineering

Pace Project No.: 261131

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: McDonough Advanced Engineering
Pace Project No.: 261131

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
261032003	DGWC-68	EPA 3005A	121	EPA 6020B	191
261032003	DGWC-68	EPA 3005A	262	EPA 6020B	328
261032003	DGWC-68	EPA 300.0	39		

REPORT OF LABORATORY ANALYSIS

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CHAIN OF CUSTODY RECORD



Pace Analytical Services, Inc.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

PAGE: _____ OF _____

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION			
Georgia Power					CONTAINER TYPE:	P	P	P													
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					PRESERVATION:																
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239					# of																
REPORT TO:					C O N T A I N E R S	C I S O 1 E P A 8 0 5 6	*Metals, Dissolved (EPA 6010/6020) (field filtered) As, Fe, Mn	*Metals (EPA 6010/6020) As, Ca, Fe, Mg, Mn, Na, K													
Tim Richards (Tim_Richards@golder.com)																					
REQUESTED COMPLETION DATE:																					
PROJECT NAME/STATE:																					
Plant McDonough AP- AE Sampling																					
PROJECT #:																					
1779172																					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																
01/22/18	1130	GW		x	DGWA-71	3	1	1	1												
01/22/18	1335	GW		x	DGWC-68A	3	1	1	1												
01/22/18	1150	GW		x	DGWC-68	3	1	1	1												

SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:	
Ben Hodges Field Lead		1/23/18 1000		<i>[Signature]</i>		1/23/18 0945	
RECEIVED BY: Mike Niquera		DATE/TIME: 1/23/18 0945		RELINQUISHED BY:		DATE/TIME:	
RECEIVED BY LAB: <i>[Signature]</i>		DATE/TIME: 01/23/18 1220		SAMPLE SHIPPED VIA:		DATE/TIME:	
Checked: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>		Temperature: Min: 1.3 Max: _____		Custody Seal: Intact <input checked="" type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/>		Cooler ID: _____	

WO#: 261032



Received by lab: *[Signature]*

Page 1 of 13

Sample Condition Upon Receipt



Client Name: Golder Associates Project # _____

WO#: 261032

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

PM: **BM** Due Date: **01/30/18**

Custody Seal on Cooler/Box Present: yes no Seals intact: yes

CLIENT: Golder-ATL

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THA-083 Type of Ice: Blue None _____

Samples on ice, cooling process has begun

Cooler Temperature 1.3
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 1/23/18 MR

Comments: _____

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>GTW</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp incorrect containers)

February 08, 2018

Kristen Jurinko
Golder Associates - Atlanta
3730 Chamblee Tucker Road
Atlanta, GA 30341

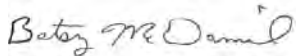
RE: Project: McDonough Advanced Engineering
Pace Project No.: 261197

Dear Kristen Jurinko:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: McDonough Advanced Engineering

Pace Project No.: 261197

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: McDonough Advanced Engineering

Pace Project No.: 261197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
261197001	AP-1 B-3	Water	01/24/18 13:50	01/26/18 11:30
261197002	AP-1 B-7	Water	01/25/18 11:05	01/26/18 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: McDonough Advanced Engineering

Pace Project No.: 261197

Lab ID	Sample ID	Method	Analysts	Analytes Reported
261197001	AP-1 B-3	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261197002	AP-1 B-7	EPA 6020B	KLH	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering
Pace Project No.: 261197

Sample: AP-1 B-3		Lab ID: 261197001		Collected: 01/24/18 13:50		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	2070	ug/L	250	26.1	50	02/02/18 08:44	02/05/18 22:19	7440-38-2	
Calcium	65400	ug/L	25000	2020	50	02/02/18 08:44	02/05/18 22:19	7440-70-2	
Iron	28200	ug/L	2000	214	50	02/02/18 08:44	02/05/18 22:19	7439-89-6	N2
Magnesium	20300	ug/L	2500	314	50	02/02/18 08:44	02/05/18 22:19	7439-95-4	
Manganese	2710	ug/L	500	38.2	50	02/02/18 08:44	02/05/18 22:19	7439-96-5	
Potassium	8140	ug/L	5000	825	50	02/02/18 08:44	02/06/18 16:54	7440-09-7	
Sodium	11200	ug/L	5000	674	50	02/02/18 08:44	02/05/18 22:19	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	2140	ug/L	50.0	5.2	10	01/31/18 15:52	02/02/18 19:43	7440-38-2	
Iron, Dissolved	28300	ug/L	400	42.7	10	01/31/18 15:52	02/02/18 19:43	7439-89-6	N2
Manganese, Dissolved	2690	ug/L	100	7.6	10	01/31/18 15:52	02/02/18 19:43	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	9.1	mg/L	0.25	0.024	1		02/01/18 00:05	16887-00-6	
Sulfate	173	mg/L	10.0	0.17	10		02/06/18 16:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering
Pace Project No.: 261197

Sample: AP-1 B-7		Lab ID: 261197002		Collected: 01/25/18 11:05		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	1930	ug/L	250	26.1	50	02/02/18 08:44	02/05/18 22:30	7440-38-2	
Calcium	52100	ug/L	25000	2020	50	02/02/18 08:44	02/05/18 22:30	7440-70-2	
Iron	11000	ug/L	2000	214	50	02/02/18 08:44	02/05/18 22:30	7439-89-6	N2
Magnesium	9730	ug/L	50.0	6.3	1	02/02/18 08:44	02/05/18 22:24	7439-95-4	
Manganese	3000	ug/L	500	38.2	50	02/02/18 08:44	02/05/18 22:30	7439-96-5	
Potassium	9520	ug/L	5000	825	50	02/02/18 08:44	02/06/18 17:00	7440-09-7	
Sodium	5970	ug/L	100	13.5	1	02/02/18 08:44	02/05/18 22:24	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	1880	ug/L	50.0	5.2	10	01/31/18 15:52	02/02/18 19:49	7440-38-2	
Iron, Dissolved	9240	ug/L	40.0	4.3	1	01/31/18 15:52	02/02/18 00:00	7439-89-6	N2
Manganese, Dissolved	2980	ug/L	100	7.6	10	01/31/18 15:52	02/02/18 19:49	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.5	mg/L	0.25	0.024	1		02/01/18 00:26	16887-00-6	
Sulfate	63.0	mg/L	5.0	0.085	5		02/06/18 18:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261197

QC Batch: 391 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 261197001, 261197002

METHOD BLANK: 2160 Matrix: Water
Associated Lab Samples: 261197001, 261197002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	0.52	02/05/18 20:53	
Calcium	ug/L	ND	500	40.4	02/05/18 20:53	
Iron	ug/L	ND	40.0	4.3	02/05/18 20:53	N2
Magnesium	ug/L	ND	50.0	6.3	02/05/18 20:53	
Manganese	ug/L	ND	10.0	0.76	02/05/18 20:53	
Potassium	ug/L	ND	100	16.5	02/06/18 16:31	
Sodium	ug/L	ND	100	13.5	02/05/18 20:53	

LABORATORY CONTROL SAMPLE: 2161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	100	100	80-120	
Calcium	ug/L	1000	1040	104	80-120	
Iron	ug/L	1000	1010	101	80-120	N2
Magnesium	ug/L	1000	1020	102	80-120	
Manganese	ug/L	100	105	105	80-120	
Potassium	ug/L	1000	1010	101	80-120	
Sodium	ug/L	1000	1040	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4201 4202

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		261118002 Result	Spike Conc.	Spike Conc.	MS Result						
Arsenic	ug/L	ND	100	100	99.8	100	100	75-125	0	20	
Calcium	ug/L	6130	1000	1000	7870	7270	174	75-125	8	20	M1
Iron	ug/L	347	1000	1000	1330	1410	99	75-125	5	20	N2
Magnesium	ug/L	2020	1000	1000	3030	3170	101	75-125	5	20	
Manganese	ug/L	11.2	100	100	113	120	102	75-125	6	20	
Potassium	ug/L	3590	1000	1000	4580	4800	99	75-125	5	20	
Sodium	ug/L	8760	1000	1000	9530	9950	76	75-125	4	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261197

QC Batch: 262 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 261197001, 261197002

METHOD BLANK: 1501 Matrix: Water
Associated Lab Samples: 261197001, 261197002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	0.52	02/01/18 21:48	
Iron, Dissolved	ug/L	ND	40.0	4.3	02/01/18 21:48	N2
Manganese, Dissolved	ug/L	ND	10.0	0.76	02/01/18 21:48	

LABORATORY CONTROL SAMPLE: 1502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	104	104	80-120	
Iron, Dissolved	ug/L	1000	1090	109	80-120	N2
Manganese, Dissolved	ug/L	100	109	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1781 1782

Parameter	Units	261081004 Result	MS		MSD		% Rec		% Rec Limits	Max		Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec		RPD	RPD	
Arsenic, Dissolved	ug/L	ND	100	100	107	104	107	104	75-125	2	20	
Iron, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20	N2
Manganese, Dissolved	ug/L	1010	100	100	1100	1070	86	60	75-125	2	20	M1

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261197

QC Batch: 291 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 261197001, 261197002

METHOD BLANK: 1608 Matrix: Water
Associated Lab Samples: 261197001, 261197002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	01/31/18 21:20	
Sulfate	mg/L	ND	1.0	0.017	01/31/18 21:20	

LABORATORY CONTROL SAMPLE: 1609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1610 1611

Parameter	Units	261248001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.3	10	10	16.3	16.3	100	100	90-110	0	15	
Sulfate	mg/L	20.5	10	10	28.6	28.6	80	80	90-110	0	15	M1

MATRIX SPIKE SAMPLE: 1612

Parameter	Units	261248002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	6.3	10	16.7	105	90-110	
Sulfate	mg/L	20.5	10	28.8	84	90-110	M1

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: McDonough Advanced Engineering

Pace Project No.: 261197

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: McDonough Advanced Engineering

Pace Project No.: 261197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
261197001	AP-1 B-3	EPA 3005A	391	EPA 6020B	517
261197002	AP-1 B-7	EPA 3005A	391	EPA 6020B	517
261197001	AP-1 B-3	EPA 3005A	262	EPA 6020B	328
261197002	AP-1 B-7	EPA 3005A	262	EPA 6020B	328
261197001	AP-1 B-3	EPA 300.0	291		
261197002	AP-1 B-7	EPA 300.0	291		

REPORT OF LABORATORY ANALYSIS

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CHAIN OF CUSTODY RECORD



Pace Analytical Services, Inc.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

CLIENT NAME: Georgia Power				ANALYSIS REQUESTED										L A B J D N U M B E R	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-508-7239				CONTAINER TYPE: P P P PRESERVATION: 7 3&7 3&7											P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen			
REPORT TO: Tim Richards (Tim_Richards@golder.com)		CC: KJurinko@golder.com		CONTAINERS											*MATRIX CODES:				
REQUESTED COMPLETION DATE:		PO #: laburch@southernco.com													DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORM WATER W - WATER	S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT			
PROJECT NAME/STATE: Plant McDonough AP-AE Sampling															REMARKS/ADDITIONAL INFORMATION				
PROJECT #: 1779172																			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of	Cl, SO4 EPA 9056	*Metals, Dissolved (EPA 6010/6020) (field filtered) As, Fe, Mn	*Metals (EPA 6010/6020) As, Ca, Fe, Mg, Mn, Na, K										
01/24/18	1350	GW		x	AP-1 B-3	3	1	1	1								1		
01/25/18	1105	GW		x	AP-1 B-7	3	1	1	1								2		
SAMPLED BY AND TITLE: Ben Hodges Field Lead				DATE/TIME: 1/25/18 1700				RELINQUISHED BY: <i>[Signature]</i>				DATE/TIME: 1/26/18 1000							
RECEIVED BY: Mike Nguyen				DATE/TIME: 1/26/18 1000				RECEIVED BY: <i>[Signature]</i>				DATE/TIME:							
RECEIVED BY LAB: <i>[Signature]</i>				DATE/TIME: 01/26/18 1130				SAMPLE SHIPPED VIA: UPS FED-EX USPS				COURIER CLIENT OTHER FS							
pH checked: Yes No NA				Temperature: Min: 0.5 Max:				Custody Seal: Intact Broken Not Present				Cooler ID:							

WO# : 261197



261197

Sample Condition Upon Receipt



Client Name: Golder Associates Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

WO#: 261197

Custody Seal on Cooler/Box Present: yes no Seals intact: yes

PM: **BM** Due Date: **02/02/18**
CLIENT: **Golder-ATL**

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THA-083 Type of Ice: Wet Blue None Samples on ice, cooling process was begun

Cooler Temperature 0.5 Biological Tissue Is Frozen: Yes No
Temp should be above freezing to 5°C

Date and Initials of person examining contents: 1/26/18 MR

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>GWA</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>8mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: _____ Date/Time: _____ Field Data Required? **Y / N**
 Person Contacted: _____
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers):

February 08, 2018

Kristen Jurinko
Golder Associates - Atlanta
3730 Chamblee Tucker Road
Atlanta, GA 30341

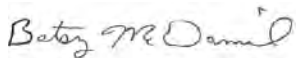
RE: Project: McDonough Advanced Engineering
Pace Project No.: 261198

Dear Kristen Jurinko:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

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SAMPLE SUMMARY

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
261198001	B-51	Water	01/25/18 10:20	01/26/18 11:30
261198002	B-73	Water	01/25/18 13:00	01/26/18 11:30
261198003	B-72	Water	01/25/18 15:40	01/26/18 11:30
261198004	FB-2	Water	01/25/18 15:30	01/26/18 11:30
261198005	EB-2	Water	01/25/18 16:10	01/26/18 11:30
261198006	FD-2	Water	01/25/18 00:00	01/26/18 11:30
261198007	B-31	Water	01/25/18 15:15	01/26/18 11:30
261198008	FD-1	Water	01/25/18 00:00	01/26/18 11:30
261198009	FB-1	Water	01/25/18 14:45	01/26/18 11:30
261198010	EB-1	Water	01/25/18 16:00	01/26/18 11:30

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SAMPLE ANALYTE COUNT

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Lab ID	Sample ID	Method	Analysts	Analytes Reported
261198001	B-51	EPA 6020B	CSW	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261198002	B-73	EPA 6020B	CSW	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261198003	B-72	EPA 6020B	CSW	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261198004	FB-2	EPA 6020B	CSW	7
		EPA 300.0	RLC	2
261198005	EB-2	EPA 6020B	CSW	7
		EPA 300.0	RLC	2
261198006	FD-2	EPA 6020B	CSW	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261198007	B-31	EPA 6020B	CSW	7
		EPA 6020B	KLH	3
		EPA 300.0	RLC	2
261198008	FD-1	EPA 6020B	CSW	7
		EPA 6020B	CSW	3
		EPA 300.0	RLC	2
261198009	FB-1	EPA 6020B	CSW	7
		EPA 300.0	RLC	2
261198010	EB-1	EPA 6020B	CSW	7
		EPA 300.0	RLC	2

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: B-51		Lab ID: 261198001		Collected: 01/25/18 10:20		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 19:51	7440-38-2	
Calcium	54500	ug/L	25000	2020	50	02/05/18 10:25	02/07/18 19:57	7440-70-2	
Iron	56.2	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 19:51	7439-89-6	N2
Magnesium	8010	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 19:51	7439-95-4	
Manganese	194	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 19:51	7439-96-5	
Potassium	4040	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 19:51	7440-09-7	
Sodium	13400	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 19:51	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/02/18 00:05	7440-38-2	
Iron, Dissolved	45.2	ug/L	40.0	4.3	1	01/31/18 15:52	02/02/18 00:05	7439-89-6	N2
Manganese, Dissolved	177	ug/L	10.0	0.76	1	01/31/18 15:52	02/02/18 00:05	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.6	mg/L	0.25	0.024	1		02/01/18 00:47	16887-00-6	
Sulfate	92.6	mg/L	5.0	0.085	5		02/06/18 18:54	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: B-73		Lab ID: 261198002		Collected: 01/25/18 13:00		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	12.5	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 20:03	7440-38-2	
Calcium	45000	ug/L	25000	2020	50	02/05/18 10:25	02/07/18 20:08	7440-70-2	
Iron	291	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 20:03	7439-89-6	N2
Magnesium	14100	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 20:03	7439-95-4	
Manganese	3640	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 20:03	7439-96-5	
Potassium	3700	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 20:03	7440-09-7	
Sodium	8110	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 20:03	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	12.5	ug/L	5.0	0.52	1	01/31/18 15:52	02/02/18 00:11	7440-38-2	
Iron, Dissolved	20.9J	ug/L	40.0	4.3	1	01/31/18 15:52	02/02/18 00:11	7439-89-6	N2
Manganese, Dissolved	3570	ug/L	100	7.6	10	01/31/18 15:52	02/02/18 19:54	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.8	mg/L	0.25	0.024	1		02/01/18 01:07	16887-00-6	
Sulfate	41.5	mg/L	5.0	0.085	5		02/06/18 19:16	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: B-72		Lab ID: 261198003		Collected: 01/25/18 15:40		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 20:14	7440-38-2	
Calcium	38100	ug/L	25000	2020	50	02/05/18 10:25	02/07/18 20:20	7440-70-2	
Iron	60.3	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 20:14	7439-89-6	N2
Magnesium	13200	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 20:14	7439-95-4	
Manganese	368	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 20:14	7439-96-5	
Potassium	3930	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 20:14	7440-09-7	
Sodium	14000	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 20:14	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/02/18 00:17	7440-38-2	
Iron, Dissolved	27.0J	ug/L	40.0	4.3	1	01/31/18 15:52	02/02/18 00:17	7439-89-6	N2
Manganese, Dissolved	343	ug/L	10.0	0.76	1	01/31/18 15:52	02/02/18 00:17	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.4	mg/L	0.25	0.024	1		02/01/18 01:28	16887-00-6	
Sulfate	96.0	mg/L	10.0	0.17	10		02/06/18 19:38	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: FB-2 **Lab ID: 261198004** Collected: 01/25/18 15:30 Received: 01/26/18 11:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 20:25	7440-38-2	
Calcium	ND	ug/L	500	40.4	1	02/05/18 10:25	02/07/18 20:25	7440-70-2	
Iron	ND	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 20:25	7439-89-6	N2
Magnesium	ND	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 20:25	7439-95-4	
Manganese	ND	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 20:25	7439-96-5	
Potassium	ND	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 20:25	7440-09-7	
Sodium	ND	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 20:25	7440-23-5	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Chloride	0.028J	mg/L	0.25	0.024	1		02/01/18 01:48	16887-00-6	
Sulfate	0.069J	mg/L	1.0	0.017	1		02/01/18 01:48	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: EB-2		Lab ID: 261198005		Collected: 01/25/18 16:10		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 20:31	7440-38-2	
Calcium	ND	ug/L	500	40.4	1	02/05/18 10:25	02/07/18 20:31	7440-70-2	
Iron	5.3J	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 20:31	7439-89-6	N2
Magnesium	ND	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 20:31	7439-95-4	
Manganese	ND	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 20:31	7439-96-5	
Potassium	ND	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 20:31	7440-09-7	
Sodium	ND	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 20:31	7440-23-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	ND	mg/L	0.25	0.024	1		02/01/18 03:32	16887-00-6	
Sulfate	ND	mg/L	1.0	0.017	1		02/01/18 03:32	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: FD-2		Lab ID: 261198006		Collected: 01/25/18 00:00	Received: 01/26/18 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 20:48	7440-38-2		
Calcium	37800	ug/L	25000	2020	50	02/05/18 10:25	02/07/18 20:54	7440-70-2		
Iron	62.5	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 20:48	7439-89-6	N2	
Magnesium	13600	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 20:48	7439-95-4		
Manganese	365	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 20:48	7439-96-5		
Potassium	4110	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 20:48	7440-09-7		
Sodium	14300	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 20:48	7440-23-5		
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/02/18 00:23	7440-38-2		
Iron, Dissolved	72.5	ug/L	40.0	4.3	1	01/31/18 15:52	02/02/18 00:23	7439-89-6	N2	
Manganese, Dissolved	340	ug/L	10.0	0.76	1	01/31/18 15:52	02/02/18 00:23	7439-96-5		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	5.4	mg/L	0.25	0.024	1		02/01/18 03:52	16887-00-6		
Sulfate	94.3	mg/L	10.0	0.17	10		02/06/18 17:22	14808-79-8		

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: B-31		Lab ID: 261198007		Collected: 01/25/18 15:15		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 21:00	7440-38-2	
Calcium	68300	ug/L	25000	2020	50	02/05/18 10:25	02/07/18 21:06	7440-70-2	
Iron	8.7J	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 21:00	7439-89-6	N2
Magnesium	15100	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 21:00	7439-95-4	
Manganese	25.6	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 21:00	7439-96-5	
Potassium	4470	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 21:00	7440-09-7	
Sodium	29300	ug/L	5000	674	50	02/05/18 10:25	02/07/18 21:06	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	5.0	0.52	1	01/31/18 15:52	02/02/18 00:28	7440-38-2	
Iron, Dissolved	ND	ug/L	40.0	4.3	1	01/31/18 15:52	02/02/18 00:28	7439-89-6	N2
Manganese, Dissolved	25.3	ug/L	10.0	0.76	1	01/31/18 15:52	02/02/18 00:28	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	7.3	mg/L	0.25	0.024	1		02/01/18 04:34	16887-00-6	
Sulfate	281	mg/L	20.0	0.34	20		02/06/18 20:01	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering
Pace Project No.: 261198

Sample: FD-1		Lab ID: 261198008		Collected: 01/25/18 00:00		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 21:11	7440-38-2	
Calcium	72400	ug/L	25000	2020	50	02/05/18 10:25	02/07/18 21:17	7440-70-2	
Iron	13.2J	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 21:11	7439-89-6	N2
Magnesium	15200	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 21:11	7439-95-4	
Manganese	25.8	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 21:11	7439-96-5	
Potassium	4470	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 21:11	7440-09-7	
Sodium	31300	ug/L	5000	674	50	02/05/18 10:25	02/07/18 21:17	7440-23-5	
6020B MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.54J	ug/L	5.0	0.52	1	02/05/18 10:44	02/07/18 23:52	7440-38-2	
Iron, Dissolved	10.0J	ug/L	40.0	4.3	1	02/05/18 10:44	02/07/18 23:52	7439-89-6	N2
Manganese, Dissolved	25.7	ug/L	10.0	0.76	1	02/05/18 10:44	02/07/18 23:52	7439-96-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	7.3	mg/L	0.25	0.024	1		02/01/18 04:54	16887-00-6	
Sulfate	280	mg/L	20.0	0.34	20		02/06/18 20:23	14808-79-8	

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: FB-1		Lab ID: 261198009		Collected: 01/25/18 14:45	Received: 01/26/18 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 21:23	7440-38-2		
Calcium	ND	ug/L	500	40.4	1	02/05/18 10:25	02/07/18 21:23	7440-70-2		
Iron	ND	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 21:23	7439-89-6	N2	
Magnesium	ND	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 21:23	7439-95-4		
Manganese	ND	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 21:23	7439-96-5		
Potassium	ND	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 21:23	7440-09-7		
Sodium	ND	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 21:23	7440-23-5		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.047J	mg/L	0.25	0.024	1		02/01/18 05:15	16887-00-6		
Sulfate	ND	mg/L	1.0	0.017	1		02/01/18 05:15	14808-79-8		

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ANALYTICAL RESULTS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Sample: EB-1		Lab ID: 261198010		Collected: 01/25/18 16:00		Received: 01/26/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	ug/L	5.0	0.52	1	02/05/18 10:25	02/07/18 21:28	7440-38-2	
Calcium	ND	ug/L	500	40.4	1	02/05/18 10:25	02/07/18 21:28	7440-70-2	
Iron	ND	ug/L	40.0	4.3	1	02/05/18 10:25	02/07/18 21:28	7439-89-6	N2
Magnesium	ND	ug/L	50.0	6.3	1	02/05/18 10:25	02/07/18 21:28	7439-95-4	
Manganese	ND	ug/L	10.0	0.76	1	02/05/18 10:25	02/07/18 21:28	7439-96-5	
Potassium	ND	ug/L	100	16.5	1	02/05/18 10:25	02/07/18 21:28	7440-09-7	
Sodium	ND	ug/L	100	13.5	1	02/05/18 10:25	02/07/18 21:28	7440-23-5	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	0.027J	mg/L	0.25	0.024	1		02/01/18 05:35	16887-00-6	
Sulfate	ND	mg/L	1.0	0.017	1		02/01/18 05:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering

Pace Project No.: 261198

QC Batch: 416 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 261198001, 261198002, 261198003, 261198004, 261198005, 261198006, 261198007, 261198008, 261198009, 261198010

METHOD BLANK: 4267 Matrix: Water
 Associated Lab Samples: 261198001, 261198002, 261198003, 261198004, 261198005, 261198006, 261198007, 261198008, 261198009, 261198010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	0.52	02/07/18 19:40	
Calcium	ug/L	ND	500	40.4	02/07/18 19:40	
Iron	ug/L	ND	40.0	4.3	02/07/18 19:40	N2
Magnesium	ug/L	ND	50.0	6.3	02/07/18 19:40	
Manganese	ug/L	ND	10.0	0.76	02/07/18 19:40	
Potassium	ug/L	ND	100	16.5	02/07/18 19:40	
Sodium	ug/L	ND	100	13.5	02/07/18 19:40	

LABORATORY CONTROL SAMPLE: 4268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	102	102	80-120	
Calcium	ug/L	1000	1020	102	80-120	
Iron	ug/L	1000	1020	102	80-120 N2	
Magnesium	ug/L	1000	1050	105	80-120	
Manganese	ug/L	100	105	105	80-120	
Potassium	ug/L	1000	1070	107	80-120	
Sodium	ug/L	1000	1040	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4269 4270

Parameter	Units	261140001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Conc.	Spike Conc.	MSD Conc.						
Arsenic	ug/L	ND	100	100	102	101	101	101	75-125	0	20	
Calcium	ug/L	2190	1000	1000	3130	3260	94	107	75-125	4	20	
Iron	ug/L	33.6J	1000	1000	1050	1080	102	105	75-125	3	20	N2
Magnesium	ug/L	1830	1000	1000	2780	2880	95	104	75-125	4	20	
Manganese	ug/L	1.6J	100	100	106	108	105	106	75-125	1	20	
Potassium	ug/L	1630	1000	1000	2690	2800	106	117	75-125	4	20	
Sodium	ug/L	4300	1000	1000	5330	5510	103	121	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering

Pace Project No.: 261198

QC Batch: 262

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020B MET Dissolved

Associated Lab Samples: 261198001, 261198002, 261198003, 261198006, 261198007

METHOD BLANK: 1501

Matrix: Water

Associated Lab Samples: 261198001, 261198002, 261198003, 261198006, 261198007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	0.52	02/01/18 21:48	
Iron, Dissolved	ug/L	ND	40.0	4.3	02/01/18 21:48	N2
Manganese, Dissolved	ug/L	ND	10.0	0.76	02/01/18 21:48	

LABORATORY CONTROL SAMPLE: 1502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	104	104	80-120	
Iron, Dissolved	ug/L	1000	1090	109	80-120	N2
Manganese, Dissolved	ug/L	100	109	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1781

1782

Parameter	Units	261081004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	100	100	107	104	107	104	75-125	2	20	
Iron, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20	N2
Manganese, Dissolved	ug/L	1010	100	100	1100	1070	86	60	75-125	2	20	M1

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261198

QC Batch: 414 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 261198008

METHOD BLANK: 4261 Matrix: Water
Associated Lab Samples: 261198008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	0.52	02/07/18 23:40	
Iron, Dissolved	ug/L	ND	40.0	4.3	02/07/18 23:40	N2
Manganese, Dissolved	ug/L	ND	10.0	0.76	02/07/18 23:40	

LABORATORY CONTROL SAMPLE: 4262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	98.9	99	80-120	
Iron, Dissolved	ug/L	1000	1010	101	80-120	N2
Manganese, Dissolved	ug/L	100	102	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4416 4417

Parameter	Units	261218001		261218001		261218001		261218001		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Arsenic, Dissolved	ug/L	7.1	100	100	109	111	102	104	75-125	2	20		
Iron, Dissolved	ug/L	709	1000	1000	1700	1720	99	102	75-125	1	20	N2	
Manganese, Dissolved	ug/L	2530	100	100	2290	2520	-241	-13	75-125	9	20	M6	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: McDonough Advanced Engineering
Pace Project No.: 261198

QC Batch: 291 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 261198001, 261198002, 261198003, 261198004, 261198005, 261198006, 261198007, 261198008, 261198009, 261198010

METHOD BLANK: 1608 Matrix: Water
Associated Lab Samples: 261198001, 261198002, 261198003, 261198004, 261198005, 261198006, 261198007, 261198008, 261198009, 261198010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	01/31/18 21:20	
Sulfate	mg/L	ND	1.0	0.017	01/31/18 21:20	

LABORATORY CONTROL SAMPLE: 1609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1610 1611

Parameter	Units	261248001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.3	10	10	16.3	16.3	100	100	90-110	0	15	
Sulfate	mg/L	20.5	10	10	28.6	28.6	80	80	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 1612

Parameter	Units	261248002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	6.3	10	16.7	105	90-110	
Sulfate	mg/L	20.5	10	28.8	84	90-110 M1	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: McDonough Advanced Engineering

Pace Project No.: 261198

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: McDonough Advanced Engineering

Pace Project No.: 261198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
261198001	B-51	EPA 3005A	416	EPA 6020B	665
261198002	B-73	EPA 3005A	416	EPA 6020B	665
261198003	B-72	EPA 3005A	416	EPA 6020B	665
261198004	FB-2	EPA 3005A	416	EPA 6020B	665
261198005	EB-2	EPA 3005A	416	EPA 6020B	665
261198006	FD-2	EPA 3005A	416	EPA 6020B	665
261198007	B-31	EPA 3005A	416	EPA 6020B	665
261198008	FD-1	EPA 3005A	416	EPA 6020B	665
261198009	FB-1	EPA 3005A	416	EPA 6020B	665
261198010	EB-1	EPA 3005A	416	EPA 6020B	665
261198001	B-51	EPA 3005A	262	EPA 6020B	328
261198002	B-73	EPA 3005A	262	EPA 6020B	328
261198003	B-72	EPA 3005A	262	EPA 6020B	328
261198006	FD-2	EPA 3005A	262	EPA 6020B	328
261198007	B-31	EPA 3005A	262	EPA 6020B	328
261198008	FD-1	EPA 3005A	414	EPA 6020B	670
261198001	B-51	EPA 300.0	291		
261198002	B-73	EPA 300.0	291		
261198003	B-72	EPA 300.0	291		
261198004	FB-2	EPA 300.0	291		
261198005	EB-2	EPA 300.0	291		
261198006	FD-2	EPA 300.0	291		
261198007	B-31	EPA 300.0	291		
261198008	FD-1	EPA 300.0	291		
261198009	FB-1	EPA 300.0	291		
261198010	EB-1	EPA 300.0	291		

REPORT OF LABORATORY ANALYSIS

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CHAIN OF CUSTODY RECORD



Pace Analytical Services, Inc.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

PAGE: 1 OF 1

CLIENT NAME:		ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION											
Georgia Power		CONTAINER TYPE:	P	P	P									P - PLASTIC	1 - HCl, ≤8°C											
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		PRESERVATION:	7	3&7	3&7								A - AMBER GLASS	2 - H ₂ SO ₄ , ≤8°C												
241 Ralph McGill Blvd SE B10185		# of											G - CLEAR GLASS	3 - HNO ₃												
Atlanta, GA 30308		CONTAINERS	↓	Cl, SO ₄ EPA 9058	*Metals, Dissolved (EPA 6010/6020) (field filtered) As, Fe, Mn	*Metals (EPA 6010/6020) As, Ca, Fe, Mg, Mn, Na, K							V - VOA VIAL	4 - NaOH, ≤8°C												
404-508-7239																							S - STERILE	5 - NaOH/ZnAc, ≤8°C		
REPORT TO:																							O - OTHER	6 - Na ₂ S ₂ O ₃ , ≤8°C		
Tim Richards (Tim_Richards@golder.com)																								7 - ≤8°C not frozen		
CC: KJurinko@golder.com																							*MATRIX CODES:			
REQUESTED COMPLETION DATE:																										
PO #: laburch@southernco.com																							WW - WASTEWATER	SL - SLUDGE		
PROJECT NAME/STATE:																							GW - GROUNDWATER	SD - SOLID		
Plant McDonough AP-AE Sampling																							SW - SURFACE WATER	A - AIR		
PROJECT #:																							ST - STORM WATER	L - LIQUID		
1779172												W - WATER	P - PRODUCT													
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of																				
01/25/18	1020	GW		x	B-51	3	1	1	1								1									
01/25/18	1300	GW		x	B-73	3	1	1	1								2									
01/25/18	1540	GW		x	B-72	3	1	1	1								3									
01/25/18	1530	W		x	FB-2	2	1		1								4									
01/25/18	1610	W		x	EB-2	2	1		1								5									
01/25/18	-	GW		x	FD-2	3	1	1	1								6									
01/25/18	1515	GW		x	B-31	3	1	1	1								7									
01/25/18	-	GW		x	FD-1	3	1	1	1								8									
01/25/18	1445	W		x	FB-1	2	1		1								9									
01/25/18	1600	W		x	EB-1	2	1		1								10									
SAMPLED BY AND TITLE:			DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			WO#: 261198														
Ben Hodges Field Lead			1/25/18 1700			<i>[Signature]</i>			1/26/18 1000																	
RECEIVED BY: Mike Nguyen			DATE/TIME: 1/26/18 1000			RELINQUISHED BY:			DATE/TIME:																	
RECEIVED BY LAB: <i>[Signature]</i>			DATE/TIME: 01/26/18 1130			SAMPLE SHIPPED VIA:			DATE/TIME:			261198														
Checked: Yes No NA			Temperature: Min: 0.3 Max:			UPS FED-EX USPS COURIER			CLIENT OTHER FS																	
Custody Seal: Intact Broken Not Present			Cooler ID:			Cooler ID:																				

Sample Condition Upon Receipt



Client Name: Golder Associates Project # _____

WO#: 261198

PM: BM Due Date: 02/02/18
 CLIENT: Golder-ATL

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used TFA-08m Type of Ice: Wei Blue None Samples on Ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: 1/26/18 MR

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>GLW</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, calform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

July 24, 2017

Golder Associates - Greensboro
ATTN: Rachel Kirkman
5B Oak Branch Drive
Greensboro, NC, 27407
RachelKirkman@golder.com

RE: Project GOL-GB1701

Dear Rachel Kirkman,

On July 7, 2017, Brooks Applied Labs (BAL) received four (4) water samples in a sealed container with a temperature of 3.0°C. The samples were logged-in for total recoverable and dissolved arsenic [As] and arsenic speciation analyses, including arsenite [As(III)], arsenate [As(V)], monomethylarsonic acid [MMAs], and dimethylarsinic acid [DMAs].

The samples submitted for dissolved arsenic and arsenic speciation analyses were filtered in the field by the client.

All samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology. Reagent water for dilutions and sample preservatives is monitored for contamination to account for any biases associated with the sample results.

Total Recoverable and Dissolved Arsenic Quantitation by ICP-QQQ-MS

Arsenic quantitation was performed by inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com. Prior to analysis all total recoverable arsenic sample fractions were preserved to (1% HNO₃ (v/v) + 1% HCl (v/v)) and oven digested in the same containers the samples were received in.

The total recoverable and dissolved arsenic results were *not* method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Arsenic Speciation Analysis by IC-ICP-CRC-MS

Arsenic speciation analysis was performed by ion chromatography coupled to an inductively coupled plasma collision reaction cell mass spectrometer (IC-ICP-CRC-MS).

The arsenic speciation results were *not* method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

If the native sample result and/or the DUP result is not detected (ND) above the MDL, then the associated RPD is not calculated (N/C).

All data was reported without qualification (aside from concentration qualifiers) and all associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report.

Please feel free to contact me if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Project Manager
Brooks Applied Labs, LLC
jeremy@brooksapplied.com

A handwritten signature in black ink, appearing to read 'Anna Prestbo', with a stylized flourish at the end.

Anna Prestbo
Project Coordinator
Brooks Applied Labs, LLC
annap@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	standard reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 9/23/09)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
FB-1	1727041-01	Water	Sample	07/06/2017	07/07/2017
FB-1	1727041-02	Water	Sample	07/06/2017	07/07/2017
B-70A	1727041-03	Water	Sample	07/06/2017	07/07/2017
B-70A	1727041-04	Water	Sample	07/06/2017	07/07/2017
B-70A	1727041-05	Water	Sample	07/06/2017	07/07/2017
B-69	1727041-06	Water	Sample	07/06/2017	07/07/2017
B-69	1727041-07	Water	Sample	07/06/2017	07/07/2017
B-69	1727041-08	Water	Sample	07/06/2017	07/07/2017
B-68	1727041-09	Water	Sample	07/06/2017	07/07/2017
B-68	1727041-10	Water	Sample	07/06/2017	07/07/2017
B-68	1727041-11	Water	Sample	07/06/2017	07/07/2017

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	07/14/2017	07/18/2017	B171701	1700855
As	Water	EPA 1638 Mod	07/14/2017	07/20/2017	B171701	1700863
As(III)	Water	SOP BAL-4100	07/11/2017	07/12/2017	B171687	1700824
As(V)	Water	SOP BAL-4100	07/11/2017	07/12/2017	B171687	1700824
DMAs	Water	SOP BAL-4100	07/11/2017	07/12/2017	B171687	1700824
MMAs	Water	SOP BAL-4100	07/11/2017	07/12/2017	B171687	1700824



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
B-68										
1727041-09	As	Water	TR	552		0.112	0.408	µg/L	B171701	1700855
1727041-10	As	Water	D	533		0.112	0.408	µg/L	B171701	1700855
1727041-11	As(III)	Water	D	504		0.200	1.00	µg/L	B171687	1700824
1727041-11	As(V)	Water	D	38.3		0.200	1.00	µg/L	B171687	1700824
1727041-11	DMAs	Water	D	≤ 0.250	U	0.250	1.05	µg/L	B171687	1700824
1727041-11	MMAs	Water	D	≤ 0.200	U	0.200	1.15	µg/L	B171687	1700824
B-69										
1727041-06	As	Water	TR	21.8		0.112	0.408	µg/L	B171701	1700855
1727041-07	As	Water	D	23.0		0.112	0.408	µg/L	B171701	1700855
1727041-08	As(III)	Water	D	20.6		0.200	1.00	µg/L	B171687	1700824
1727041-08	As(V)	Water	D	2.02		0.200	1.00	µg/L	B171687	1700824
1727041-08	DMAs	Water	D	≤ 0.250	U	0.250	1.05	µg/L	B171687	1700824
1727041-08	MMAs	Water	D	≤ 0.200	U	0.200	1.15	µg/L	B171687	1700824
B-70A										
1727041-03	As	Water	TR	≤ 0.112	U	0.112	0.408	µg/L	B171701	1700863
1727041-04	As	Water	D	≤ 0.112	U	0.112	0.408	µg/L	B171701	1700863
1727041-05	As(III)	Water	D	≤ 0.080	U	0.080	0.400	µg/L	B171687	1700824
1727041-05	As(V)	Water	D	0.121	J	0.080	0.400	µg/L	B171687	1700824
1727041-05	DMAs	Water	D	≤ 0.100	U	0.100	0.420	µg/L	B171687	1700824
1727041-05	MMAs	Water	D	≤ 0.080	U	0.080	0.460	µg/L	B171687	1700824
FB-1										
1727041-01	As	Water	TR	≤ 0.112	U	0.112	0.408	µg/L	B171701	1700863
1727041-02	As(III)	Water	D	≤ 0.080	U	0.080	0.400	µg/L	B171687	1700824
1727041-02	As(V)	Water	D	0.096	J	0.080	0.400	µg/L	B171687	1700824
1727041-02	DMAs	Water	D	≤ 0.100	U	0.100	0.420	µg/L	B171687	1700824
1727041-02	MMAs	Water	D	≤ 0.080	U	0.080	0.460	µg/L	B171687	1700824



Accuracy & Precision Summary

Batch: B171687
 Lab Matrix: Water
 Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B171687-BS1	Blank Spike, (1714053)						
	As(III)		5.000	5.138	µg/L	103% 75-125	
	As(V)		5.000	4.431	µg/L	89% 75-125	
	DMAs		3.198	2.805	µg/L	88% 75-125	
B171687-BS2	Blank Spike, (1714054)						
	As(V)		0.3510	0.280	µg/L	80% 75-125	
	MMAs		4.554	4.641	µg/L	102% 75-125	
B171687-DUP1	Duplicate, (1727041-11)						
	As(III)	504.1		498.1	µg/L		1% 25
	As(V)	38.27		38.53	µg/L		0.7% 25
	DMAs	ND		ND	µg/L		N/C 25
	MMAs	ND		ND	µg/L		N/C 25
B171687-MS1	Matrix Spike, (1727041-11)						
	As(III)	504.1	50.00	543.2	µg/L	NR 75-125	
	As(V)	38.27	50.00	86.89	µg/L	97% 75-125	
	DMAs	ND	49.00	48.01	µg/L	98% 75-125	
	MMAs	ND	50.35	49.88	µg/L	99% 75-125	
B171687-MSD1	Matrix Spike Duplicate, (1727041-11)						
	As(III)	504.1	50.00	550.4	µg/L	NR 75-125	N/C 25
	As(V)	38.27	50.00	87.68	µg/L	99% 75-125	0.9% 25
	DMAs	ND	49.00	49.04	µg/L	100% 75-125	2% 25
	MMAs	ND	50.35	50.45	µg/L	100% 75-125	1% 25



Accuracy & Precision Summary

Batch: B171701
 Lab Matrix: Water
 Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B171701-BS1	Blank Spike, (1727001) As		20.41	21.02	µg/L	103% 75-125	
B171701-SRM1	Standard Reference Material (1724007, T221 as SRM) As		17.70	18.31	µg/L	103% 75-125	
B171701-SRM2	Standard Reference Material (1721039, NIST 1640a (batch SRM)) As		8.075	8.057	µg/L	100% 75-125	
B171701-SRM3	Standard Reference Material (1724007, T221 as SRM) As		17.70	18.84	µg/L	106% 75-125	
B171701-SRM4	Standard Reference Material (1721039, NIST 1640a (batch SRM)) As		8.075	7.761	µg/L	96% 75-125	
B171701-DUP2	Duplicate, (1727041-03) As	ND		ND	µg/L		N/C 20
B171701-MS2	Matrix Spike, (1727041-03) As	ND	102.0	99.99	µg/L	98% 75-125	
B171701-MSD2	Matrix Spike Duplicate, (1727041-03) As	ND	102.0	101.3	µg/L	99% 75-125	1% 20



Method Blanks & Reporting Limits

Batch: B171687
Matrix: Water
Method: SOP BAL-4100
Analyte: As(III)

Sample	Result	Units	
B171687-BLK1	0.00	µg/L	
B171687-BLK2	0.00	µg/L	
B171687-BLK3	0.00	µg/L	
B171687-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: As(V)

Sample	Result	Units	
B171687-BLK1	0.001	µg/L	
B171687-BLK2	0.0005	µg/L	
B171687-BLK3	0.00009	µg/L	
B171687-BLK4	-0.0008	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: DMA_s

Sample	Result	Units	
B171687-BLK1	0.00	µg/L	
B171687-BLK2	0.00	µg/L	
B171687-BLK3	0.00	µg/L	
B171687-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.005
Limit:	0.021		MRL: 0.021

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1727041
Client PM: Rachel Kirkman
Client Project: GPC-Plant McDonough

Method Blanks & Reporting Limits

Analyte: MMAs

Sample	Result	Units	
B171687-BLK1	0.00	µg/L	
B171687-BLK2	0.00	µg/L	
B171687-BLK3	0.00	µg/L	
B171687-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.023		MRL: 0.023

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1727041
Client PM: Rachel Kirkman
Client Project: GPC-Plant McDonough

Method Blanks & Reporting Limits

Batch: B171701
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B171701-BLK5	-0.001	µg/L
B171701-BLK6	0.002	µg/L
B171701-BLK7	-0.002	µg/L
B171701-BLK8	-0.004	µg/L

Average: -0.001
Limit: 0.040

MDL: 0.011
MRL: 0.040

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1727041
Client PM: Rachel Kirkman
Client Project: GPC-Plant McDonough

Sample Containers

Lab ID:	Sample:	Des Container	Size	Lot	Report Matrix:	Sample Type:	Preservation	Pres-Lot	Collected:	Received:	pH	Ship. Cont.
1727041-01	FB-1	A	Bottle HDPE ICP-W	125 mL	17-0079	Water	Sample	0.2% HNO3 (BAL)	1724042	07/06/2017	<2	Cooler

Comments: Half Filtered into 1727041-12

Lab ID:	Sample:	Des Container	Size	Lot	Report Matrix:	Sample Type:	Preservation	Pres-Lot	Collected:	Received:	pH	Ship. Cont.
1727041-02	FB-1	A	Vacutainer	6 mL	16-0257	Water	Sample	EDTA (PP)	NA	07/06/2017	4-6	Cooler
		B	EXTRA_VOL	6 mL	16-0257	Water	Sample	EDTA (PP)	NA	07/07/2017	4-6	Cooler

Lab ID:	Sample:	Des Container	Size	Lot	Report Matrix:	Sample Type:	Preservation	Pres-Lot	Collected:	Received:	pH	Ship. Cont.
1727041-03	B-70A	A	Bottle HDPE ICP-W	125 mL	17-0079	Water	Sample	0.2% HNO3 (BAL)	1724042	07/06/2017	<2	Cooler

Lab ID:	Sample:	Des Container	Size	Lot	Report Matrix:	Sample Type:	Preservation	Pres-Lot	Collected:	Received:	pH	Ship. Cont.
1727041-04	B-70A	A	Bottle HDPE ICP-W	125 mL	17-0079	Water	Sample	0.2% HNO3 (BAL)	1724042	07/06/2017	<2	Cooler

Lab ID:	Sample:	Des Container	Size	Lot	Report Matrix:	Sample Type:	Preservation	Pres-Lot	Collected:	Received:	pH	Ship. Cont.
1727041-05	B-70A	A	Vacutainer	6 mL	16-0257	Water	Sample	EDTA (PP)	NA	07/06/2017	4-6	Cooler
		B	EXTRA_VOL	6 mL	16-0257	Water	Sample	EDTA (PP)	NA	07/07/2017	4-6	Cooler



Sample Containers

Lab ID: 1727041-06			Report Matrix: Water		Collected: 07/06/2017
Sample: B-69			Sample Type: Sample		Received: 07/07/2017
Des Container	Size	Lot	Preservation	Pres-Lot	pH Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0079	0.2% HNO3 (BAL)	1724042	<2 Cooler

Lab ID: 1727041-07			Report Matrix: Water		Collected: 07/06/2017
Sample: B-69			Sample Type: Sample		Received: 07/07/2017
Des Container	Size	Lot	Preservation	Pres-Lot	pH Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0079	0.2% HNO3 (BAL)	1724042	<2 Cooler

Lab ID: 1727041-08			Report Matrix: Water		Collected: 07/06/2017
Sample: B-69			Sample Type: Sample		Received: 07/07/2017
Des Container	Size	Lot	Preservation	Pres-Lot	pH Ship. Cont.
A Vacutainer	6 mL	16-0257	EDTA (PP)	NA	4-6 Cooler
B EXTRA_VOL	6 mL	16-0257	EDTA (PP)	NA	4-6 Cooler

Lab ID: 1727041-09			Report Matrix: Water		Collected: 07/06/2017
Sample: B-68			Sample Type: Sample		Received: 07/07/2017
Des Container	Size	Lot	Preservation	Pres-Lot	pH Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0079	0.2% HNO3 (BAL)	1724042	<2 Cooler

Lab ID: 1727041-10			Report Matrix: Water		Collected: 07/06/2017
Sample: B-68			Sample Type: Sample		Received: 07/07/2017
Des Container	Size	Lot	Preservation	Pres-Lot	pH Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0079	0.2% HNO3 (BAL)	1724042	<2 Cooler

Lab ID: 1727041-11			Report Matrix: Water		Collected: 07/06/2017
Sample: B-68			Sample Type: Sample		Received: 07/07/2017
Des Container	Size	Lot	Preservation	Pres-Lot	pH Ship. Cont.
A Vacutainer	6 mL	16-0257	EDTA (PP)	NA	4-6 Cooler
B EXTRA_VOL	6 mL	16-0257	EDTA (PP)	NA	4-6 Cooler

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1727041
Client PM: Rachel Kirkman
Client Project: GPC-Plant McDonough

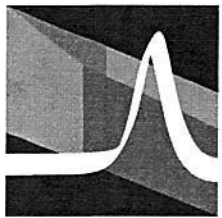
Shipping Containers

Cooler

Received: July 7, 2017 9:30
Tracking No: 787106210796 via FedEx
Coolant Type: Ice
Temperature: 3.0 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#15

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes



**BROOKS
APPLIED
LABS**

Chain-of-Custody Form

Ship samples to:
18804 North Creek Parkway, Suite 100
Bothell, WA 98011

For BAL use only
Received by: [Signature] Date: 7/7/17 BAL Report 1727041
Work Order ID: 1727091 Time: 9:30
Project ID: 526-GB1701

Client: Georgia Power Company PO Number: 1779172 Mailing Address: 241 Ralph McGill Blvd
Contact: John Abraham Phone: _____ Atlanta, GA 30308
Client Project ID: _____ Email: j.abraham@southern.com Email Receipt Confirmation? (Yes/No)
Samples Collected By: Ben Hodges - Golder Associates BAL PM: _____

Requested TAT (business days)		Collection		Client Sample Info				BAL Analyses Required					Comments		
		Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) <u>Ar, Se, Ni, Cr</u>	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Unknown		Filtration	Other (specify)
<input checked="" type="checkbox"/> 20 (standard) <input type="checkbox"/> 15* <input type="checkbox"/> 10* <input type="checkbox"/> 5* <input type="checkbox"/> Other _____ <small>*Surcharges may apply to expedited TATs</small>		Specify Here													
Sample ID															
1	FB-1	7/6/17	0900	water	3	No/Yes			1	2	X				
2	B-70A	7/6/17	0955	water	4	Yes/No			2	2					Filtered/unfiltered As
3	B-69	7/6/17	1515	water	4	Yes/No			2	2					(Total/Dissolved)
4	B-68	7/6/17	1335	water	4	Yes/No			2	2					on all samples
5															
6															
7															
8															
9															
10															
Trip Blank															
Relinquished By: <u>[Signature]</u>		Date: <u>7/6/17</u>		Time: <u>1700</u>		Relinquished By:			Date:		Time:				
Received By:		Date:		Time:		Total Number of Packages:									



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

December 11, 2017

Golder Associates - Greensboro
ATTN: Rachel Kirkman
5B Oak Branch Drive
Greensboro, NC, 27407
RachelKirkman@golder.com

RE: Project GOL-GB1701

Dear Rachel Kirkman,

On November 14, 2017, Brooks Applied Labs (BAL) received one (1) water sample in a sealed container with a temperature of 3.0°C. The sample was logged-in for total recoverable and dissolved arsenic [As] and arsenic speciation analyses, including arsenite [As(III)], arsenate [As(V)], monomethylarsonic acid [MMAs], and dimethylarsinic acid [DMAs].

The fractions submitted for dissolved arsenic and arsenic speciation analyses were filtered in the field by the client.

All samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology. Reagent water for dilutions and sample preservatives is monitored for contamination to account for any biases associated with the sample results.

Total Recoverable and Dissolved Arsenic Quantitation by ICP-QQQ-MS

Arsenic quantitation was performed by inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com. Prior to analysis all total recoverable arsenic sample fractions were preserved to (1% HNO_3 (v/v) + 1% HCl (v/v)) and oven digested in the same containers the samples were received in.

The total recoverable and dissolved arsenic results were *not* method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The matrix spike and matrix spike duplicate (B173142-MS2/B173142-MSD2) associated with sample 1746012-01 were spiked below the native sample concentration. Recoveries are not valid indicators of data quality but have been included as a demonstration of instrument precision.

Arsenic Speciation Analysis by IC-ICP-CRC-MS

Arsenic speciation analysis was performed by ion chromatography coupled to an inductively coupled plasma collision reaction cell mass spectrometer (IC-ICP-CRC-MS).

The blank spike (B173144-BS1) for DMA yielded an elevated recovery (129%). Sample results were non-detect for DMA and were determined to not have been adversely affected, therefore no qualification is necessary.

The arsenic speciation results were *not* method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

If the native sample result and/or the DUP result is not detected (ND) above the MDL, then the associated RPD is not calculated (N/C).

All data was reported without qualification (aside from concentration qualifiers) and all associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report.

Please feel free to contact me if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Brooks Applied Labs, LLC
jeremy@brooksapplied.com



Margaret Shultz
Project Coordinator
Brooks Applied Labs, LLC
margaret@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	standard reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 9/23/09)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
AP-1 B-3A	1746012-01	Groundwater	Sample	11/13/2017	11/14/2017
AP-1 B-3A	1746012-02	Groundwater	Sample	11/13/2017	11/14/2017

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	11/21/2017	11/28/2017	B173142	1701480
As(III)	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421
As(V)	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421
DMAs	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421
MMAs	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AP-1 B-3A 1746012-01	As	Groundwater	TR	2220		0.561	2.04	µg/L	B173142	1701480
AP-1 B-3A 1746012-02	As	Groundwater	D	2130		0.561	2.04	µg/L	B173142	1701480
1746012-02	As(III)	Groundwater	D	1660		2.00	10.0	µg/L	B173144	1701421
1746012-02	As(V)	Groundwater	D	214		2.00	10.0	µg/L	B173144	1701421
1746012-02	DMAs	Groundwater	D	≤ 2.50	U	2.50	10.5	µg/L	B173144	1701421
1746012-02	MMAs	Groundwater	D	≤ 2.00	U	2.00	11.5	µg/L	B173144	1701421



Accuracy & Precision Summary

Batch: B173142
 Lab Matrix: Water
 Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B173142-BS1	Blank Spike, (1747054) As		25.00	19.18	µg/L	77% 75-125	
B173142-BS2	Blank Spike, (1747054) As		25.00	19.31	µg/L	77% 75-125	
B173142-BS3	Blank Spike, (1747054) As		25.00	18.89	µg/L	76% 75-125	
B173142-DUP2	Duplicate, (1746012-01) As	2222		2226	µg/L		0.2% 20
B173142-MS2	Matrix Spike, (1746012-01) As	2222	1020	3362	µg/L	112% 75-125	
B173142-MSD2	Matrix Spike Duplicate, (1746012-01) As	2222	1020	3314	µg/L	107% 75-125	1% 20

Batch: B173144
 Lab Matrix: Water
 Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B173144-BS1	Blank Spike, (1736006) As(III)		5.010	4.760	µg/L	95% 75-125	
	As(V)		5.000	4.681	µg/L	94% 75-125	
	DMA _s		3.198	4.121	µg/L	129% 75-125	
B173144-BS2	Blank Spike, (1714054) MMA _s		4.634	4.904	µg/L	106% 75-125	



Accuracy & Precision Summary

Batch: B173144
 Lab Matrix: Water
 Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B173144-DUP1	Duplicate, (1746039-01)						
	As(III)	ND		ND	µg/L		N/C 25
	As(V)	0.215		0.205	µg/L		5% 25
	DMAAs	ND		ND	µg/L		N/C 25
	MMAAs	ND		ND	µg/L		N/C 25
B173144-MS1	Matrix Spike, (1746039-01)						
	As(III)	ND	20.00	19.15	µg/L	96% 75-125	
	As(V)	0.215	20.00	19.72	µg/L	98% 75-125	
	DMAAs	ND	20.40	19.52	µg/L	96% 75-125	
	MMAAs	ND	20.00	19.25	µg/L	96% 75-125	
B173144-MSD1	Matrix Spike Duplicate, (1746039-01)						
	As(III)	ND	20.00	19.10	µg/L	96% 75-125	0.2% 25
	As(V)	0.215	20.00	19.34	µg/L	96% 75-125	2% 25
	DMAAs	ND	20.40	19.63	µg/L	96% 75-125	0.5% 25
	MMAAs	ND	20.00	19.33	µg/L	97% 75-125	0.4% 25

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1746012
Client PM: Rachel Kirkman
Client Project: GOL-GB1701

Method Blanks & Reporting Limits

Batch: B173142
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B173142-BLK1	0.004	µg/L
B173142-BLK2	0.005	µg/L
B173142-BLK3	0.006	µg/L
B173142-BLK4	0.005	µg/L

Average: 0.005
Limit: 0.040

MDL: 0.011
MRL: 0.040



Method Blanks & Reporting Limits

Batch: B173144
Matrix: Water
Method: SOP BAL-4100
Analyte: As(III)

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: As(V)

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: DMAs

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.005
Limit:	0.021		MRL: 0.021



Method Blanks & Reporting Limits

Analyte: MMAs

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.023		MRL: 0.023

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1746012
Client PM: Rachel Kirkman
Client Project: GOL-GB1701

Sample Containers

Lab ID: 1746012-01			Report Matrix: Groundwater			Collected: 11/13/2017
Sample: AP-1 B-3A			Sample Type: Sample			Received: 11/14/2017
Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746012

Lab ID: 1746012-02			Report Matrix: Groundwater			Collected: 11/13/2017
Sample: AP-1 B-3A			Sample Type: Sample			Received: 11/14/2017
Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746012
B Vacutainer	6mL	16-0257	EDTA (PP)			Cooler - 1746012
C EXTRA_VOL	6mL	16-0257	EDTA (PP)			Cooler - 1746012

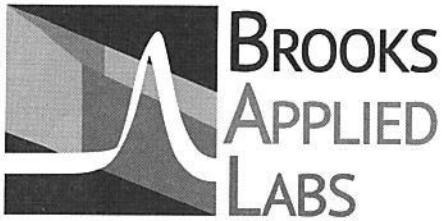
Shipping Containers

Cooler - 1746012

Received: November 14, 2017 9:30
Tracking No: 788444303244 via FedEx
Coolant Type: Ice
Temperature: 3.0 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#8

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes



Chain-of-Custody Form

BAL Report 1746012

Ship samples to:
18804 North Creek Parkway, Suite 100
Bothell, WA 98011

Received by: Maclim One For BAL use only Date: 11/14/17
 Work Order ID: _____ Time: 9:30
 Project ID: _____

Client: Golder Associates PO Number: 1779172 Mailing Address: 3730 Chamblee Tucker Rd
 Contact: Rachel Kirkman Phone: 336-402-5542 Atlanta GA 30341
 Client Project ID: _____ Email: rachel_kirkman@golder.com Email Receipt Confirmation? (Yes/No)
 Samples Collected By: Ben Hodges BAL PM: _____

Requested TAT (business days)		Collection		Client Sample Info				BAL Analyses Required						Comments			
		Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, II, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Unknown	Filtration		Other (specify)	Other (specify)	
<input checked="" type="checkbox"/> 20 (standard)																	Samples for dissolved and As Speciation were field filtered Specify Here
<input type="checkbox"/> 15*																	
<input type="checkbox"/> 10*																	
<input type="checkbox"/> 5*																	
<input type="checkbox"/> Other _____																	
*Surcharges may apply to expedited TATs																	
Sample ID																	
1	AP-1 B-3A	11/13/17	1400	GW	4	Yes/No				T/D*	X						
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Trip Blank																	

Relinquished By:	Date:	Time:	Relinquished By:	Date:	Time:
Received By:	Date:	Time:	Total Number of Packages:		



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

December 11, 2017

Golder Associates - Greensboro
ATTN: Rachel Kirkman
5B Oak Branch Drive
Greensboro, NC, 27407
RachelKirkman@golder.com

RE: Project GOL-GB1701

Dear Rachel Kirkman,

On November 15, 2017, Brooks Applied Labs (BAL) received four (4) water samples in a sealed container with a temperature of 1.5°C. The sample was logged-in for total recoverable and dissolved arsenic [As] and arsenic speciation analyses, including arsenite [As(III)], arsenate [As(V)], monomethylarsonic acid [MMAs], and dimethylarsinic acid [DMAs].

The fractions submitted for dissolved arsenic and arsenic speciation analyses were filtered in the field by the client.

All samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology. Reagent water for dilutions and sample preservatives is monitored for contamination to account for any biases associated with the sample results.

Total Recoverable and Dissolved Arsenic Quantitation by ICP-QQQ-MS

Arsenic quantitation was performed by inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com. Prior to analysis all total recoverable arsenic sample fractions were preserved to (1% HNO₃ (v/v) + 1% HCl (v/v)) and oven digested in the same containers the samples were received in.

The total recoverable and dissolved arsenic results were *not* method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The matrix spike and matrix spike duplicate (B173142-MS1/B173142-MSD1) associated with sample 1746016-01 were spiked at a level $\leq 25\%$ of the native sample concentration, therefore the recoveries are not reported (NR) and the RPDs are not calculated (N/C). The actual recoveries were 87% and 75%, respectively, and the RPD between the MS and MSD was 2%.

Arsenic Speciation Analysis by IC-ICP-CRC-MS

Arsenic speciation analysis was performed by ion chromatography coupled to an inductively coupled plasma collision reaction cell mass spectrometer (IC-ICP-CRC-MS).

The blank spike (B173144-BS1) for DMAs yielded an elevated recovery (129%). Sample results were non-detect for DMA and were determined to not have been adversely affected, therefore no qualification is necessary.

The spiking level of the matrix spike and matrix spike duplicate (B173144-MS2/B173144-MSD2) for As(III) was below the native sample concentration (1746016-06). Recoveries are not valid indicators of data quality, but have been included as a demonstration of instrument precision.

The arsenic speciation results were *not* method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

If the native sample result and/or the DUP result is not detected (ND) above the MDL, then the associated RPD is not calculated (N/C).

All data was reported without qualification (aside from concentration qualifiers) and all associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report.

Please feel free to contact me if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Brooks Applied Labs, LLC
jeremy@brooksapplied.com



Margaret Shultz
Project Coordinator
Brooks Applied Labs, LLC
margaret@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	standard reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 9/23/09)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
AP-1 B-7A	1746016-01	Groundwater	Sample	11/14/2017	11/15/2017
AP-1 B-7A	1746016-02	Groundwater	Sample	11/14/2017	11/15/2017
AP-1 B-7B	1746016-03	Groundwater	Sample	11/14/2017	11/15/2017
AP-1 B-7B	1746016-04	Groundwater	Sample	11/14/2017	11/15/2017
AP-1 B-3B	1746016-05	Groundwater	Sample	11/14/2017	11/15/2017
AP-1 B-3B	1746016-06	Groundwater	Sample	11/14/2017	11/15/2017
FB-1	1746016-07	Water	Field Blank	11/14/2017	11/15/2017
FB-1	1746016-08	Water	Field Blank	11/14/2017	11/15/2017

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1638 Mod	11/21/2017	11/28/2017	B173142	1701471
As(III)	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421
As(V)	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421
DMAs	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421
MMAAs	Water	SOP BAL-4100	11/16/2017	11/17/2017	B173144	1701421



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AP-1 B-7A										
1746016-01	As	Groundwater	TR	1110		0.112	0.408	µg/L	B173142	1701471
AP-1 B-7A										
1746016-02	As	Groundwater	D	1000		0.112	0.408	µg/L	B173142	1701471
1746016-02	As(III)	Groundwater	D	848		0.200	1.00	µg/L	B173144	1701421
1746016-02	As(V)	Groundwater	D	96.7		0.200	1.00	µg/L	B173144	1701421
1746016-02	DMAs	Groundwater	D	≤ 0.250	U	0.250	1.05	µg/L	B173144	1701421
1746016-02	MMAAs	Groundwater	D	≤ 0.200	U	0.200	1.15	µg/L	B173144	1701421
AP-1 B-7B										
1746016-03	As	Groundwater	TR	1190		0.112	0.408	µg/L	B173142	1701471
AP-1 B-7B										
1746016-04	As	Groundwater	D	1120		0.112	0.408	µg/L	B173142	1701471
1746016-04	As(III)	Groundwater	D	947		0.200	1.00	µg/L	B173144	1701421
1746016-04	As(V)	Groundwater	D	98.5		0.200	1.00	µg/L	B173144	1701421
1746016-04	DMAs	Groundwater	D	≤ 0.250	U	0.250	1.05	µg/L	B173144	1701421
1746016-04	MMAAs	Groundwater	D	≤ 0.200	U	0.200	1.15	µg/L	B173144	1701421
AP-1 B-3B										
1746016-05	As	Groundwater	TR	1850		0.112	0.408	µg/L	B173142	1701471
AP-1 B-3B										
1746016-06	As	Groundwater	D	1800		0.112	0.408	µg/L	B173142	1701471
1746016-06	As(III)	Groundwater	D	1600		2.00	10.0	µg/L	B173144	1701421
1746016-06	As(V)	Groundwater	D	170		2.00	10.0	µg/L	B173144	1701421
1746016-06	DMAs	Groundwater	D	≤ 2.50	U	2.50	10.5	µg/L	B173144	1701421
1746016-06	MMAAs	Groundwater	D	≤ 2.00	U	2.00	11.5	µg/L	B173144	1701421
FB-1										
1746016-07	As	Water	TR	≤ 0.112	U	0.112	0.408	µg/L	B173142	1701471
FB-1										
1746016-08	As	Water	D	≤ 0.112	U	0.112	0.408	µg/L	B173142	1701471
1746016-08	As(III)	Water	D	≤ 0.200	U	0.200	1.00	µg/L	B173144	1701421
1746016-08	As(V)	Water	D	0.345	J	0.200	1.00	µg/L	B173144	1701421
1746016-08	DMAs	Water	D	≤ 0.250	U	0.250	1.05	µg/L	B173144	1701421
1746016-08	MMAAs	Water	D	≤ 0.200	U	0.200	1.15	µg/L	B173144	1701421



Accuracy & Precision Summary

Batch: B173142
 Lab Matrix: Water
 Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B173142-BS1	Blank Spike, (1747054) As		25.00	19.18	µg/L	77% 75-125	
B173142-BS2	Blank Spike, (1747054) As		25.00	19.31	µg/L	77% 75-125	
B173142-BS3	Blank Spike, (1747054) As		25.00	18.89	µg/L	76% 75-125	
B173142-DUP1	Duplicate, (1746016-01) As	1111		1092	µg/L		2% 20
B173142-MS1	Matrix Spike, (1746016-01) As	1111	204.1	1289	µg/L	NR 75-125	
B173142-MSD1	Matrix Spike Duplicate, (1746016-01) As	1111	204.1	1265	µg/L	NR 75-125	N/C 20

Batch: B173144
 Lab Matrix: Water
 Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B173144-BS1	Blank Spike, (1736006) As(III)		5.010	4.760	µg/L	95% 75-125	
	As(V)		5.000	4.681	µg/L	94% 75-125	
	DMAAs		3.198	4.121	µg/L	129% 75-125	
B173144-BS2	Blank Spike, (1714054) MMAAs		4.634	4.904	µg/L	106% 75-125	



Accuracy & Precision Summary

Batch: B173144
 Lab Matrix: Water
 Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B173144-DUP3	Duplicate, (1746016-06)						
	As(III)	1595		1590	µg/L		0.3% 25
	As(V)	169.7		163.8	µg/L		4% 25
	DMAAs	ND		ND	µg/L		N/C 25
	MMAAs	ND		ND	µg/L		N/C 25
B173144-MS2	Matrix Spike, (1746016-06)						
	As(III)	1595	500.0	2065	µg/L	94% 75-125	
	As(V)	169.7	500.0	644.9	µg/L	95% 75-125	
	DMAAs	ND	510.0	488.9	µg/L	96% 75-125	
	MMAAs	ND	500.0	473.5	µg/L	95% 75-125	
B173144-MSD2	Matrix Spike Duplicate, (1746016-06)						
	As(III)	1595	500.0	2047	µg/L	90% 75-125	0.9% 25
	As(V)	169.7	500.0	651.8	µg/L	96% 75-125	1% 25
	DMAAs	ND	510.0	482.8	µg/L	95% 75-125	1% 25
	MMAAs	ND	500.0	481.2	µg/L	96% 75-125	2% 25

Project ID: GOL-GB1701
PM: Jeremy Maute



BAL Report 1746016
Client PM: Rachel Kirkman
Client Project: GOL-GB1701

Method Blanks & Reporting Limits

Batch: B173142
Matrix: Water
Method: EPA 1638 Mod
Analyte: As

Sample	Result	Units
B173142-BLK1	0.004	µg/L
B173142-BLK2	0.005	µg/L
B173142-BLK3	0.006	µg/L
B173142-BLK4	0.005	µg/L

Average: 0.005
Limit: 0.040

MDL: 0.011
MRL: 0.040



Method Blanks & Reporting Limits

Batch: B173144
Matrix: Water
Method: SOP BAL-4100
Analyte: As(III)

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: As(V)

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: DMAs

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.005
Limit:	0.021		MRL: 0.021



Method Blanks & Reporting Limits

Analyte: MMAs

Sample	Result	Units	
B173144-BLK1	0.00	µg/L	
B173144-BLK2	0.00	µg/L	
B173144-BLK3	0.00	µg/L	
B173144-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.023		MRL: 0.023



Sample Containers

Lab ID: 1746016-01
Sample: AP-1 B-7A
Report Matrix: Groundwater
Sample Type: Sample
Collected: 11/14/2017
Received: 11/15/2017

Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016

Lab ID: 1746016-02
Sample: AP-1 B-7A
Report Matrix: Groundwater
Sample Type: Sample
Collected: 11/14/2017
Received: 11/15/2017

Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016
B Vacutainer	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016
C EXTRA_VOL	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016

Lab ID: 1746016-03
Sample: AP-1 B-7B
Report Matrix: Groundwater
Sample Type: Sample
Collected: 11/14/2017
Received: 11/15/2017

Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016

Lab ID: 1746016-04
Sample: AP-1 B-7B
Report Matrix: Groundwater
Sample Type: Sample
Collected: 11/14/2017
Received: 11/15/2017

Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016
B Vacutainer	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016
C EXTRA_VOL	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016

Lab ID: 1746016-05
Sample: AP-1 B-3B
Report Matrix: Groundwater
Sample Type: Sample
Collected: 11/14/2017
Received: 11/15/2017

Des Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016



Sample Containers

Lab ID: 1746016-06		Report Matrix: Groundwater				Collected: 11/14/2017	
Sample: AP-1 B-3B		Sample Type: Sample				Received: 11/15/2017	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016
B	Vacutainer	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016
C	EXTRA_VOL	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016

Lab ID: 1746016-07		Report Matrix: Water				Collected: 11/14/2017	
Sample: FB-1		Sample Type: Field Blank				Received: 11/15/2017	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016

Lab ID: 1746016-08		Report Matrix: Water				Collected: 11/14/2017	
Sample: FB-1		Sample Type: Field Blank				Received: 11/15/2017	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle HDPE ICP-W	125 mL	17-0169	0.2% HNO3 (BAL)	1736020	<2	Cooler - 1746016
B	Vacutainer	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016
C	EXTRA_VOL	6 mL	16-0257	EDTA (PP)	n/a	n/a	Cooler - 1746016

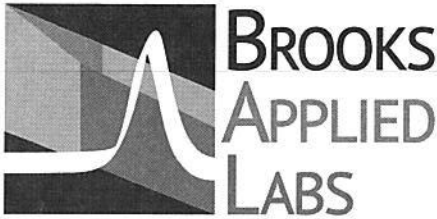
Shipping Containers

Cooler - 1746016

Received: November 15, 2017 10:00
Tracking No: 788462235246 via FedEx
Coolant Type: Ice
Temperature: 1.5 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#15

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes



Chain-of-Custody Form

Ship samples to:
18804 North Creek Parkway, Suite 100
Bothell, WA 98011

BAL Report 1746016

For BAL use only
 Received by: Hali Jefferson Date: 11/15/17
 Work Order ID: _____ Time: 10:00
 Project ID: _____

Client: Golden Associates PO Number: 1779172 Mailing Address: 3730 Chamblee Tucker Rd
 Contact: Rachel Kirkman Phone: 336-402-5542 Atlanta, GA 30341
 Client Project ID: _____ Email: rachel_kirkman@golden.com Email Receipt Confirmation? Yes/No
 Samples Collected By: Ben Hodges BAL PM: _____

Requested TAT (business days) <input checked="" type="checkbox"/> 20 (standard) <input type="checkbox"/> 15* <input type="checkbox"/> 10* <input type="checkbox"/> 5* <input type="checkbox"/> Other _____ <small>*Surcharges may apply to expedited TATs</small>		Collection		Client Sample Info				BAL Analyses Required						Comments Specify Here	
		Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg, III, V, MMA, DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Unknown	Filtration		Other (specify)
1	AP-1 B-7A	11/14/17	1100	GW	4	Y/N				T/D	X				Samples for dissolved and As speciation were field filtered
2	AP-1 B-7B	11/14/17	1700	GW	4	Y/N				T/D	X				
3	AP-2 B-3B	11/14/17	1430	GW	4	Y/N				T/D	X				
4	FB-1	11/14/17	1050	W	4	Y/N				T/D	X				
5															
6															
7															
8															
9															
10															
Trip Blank															

Relinquished By: [Signature] Date: 11/14/17 Time: 1830 Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____ Total Number of Packages: _____

January 07, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-1 RADS
Pace Project No.: 92510818

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-1 RADJ

Pace Project No.: 92510818

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-1 RADS
Pace Project No.: 92510818

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92510818001	B-105D	Water	12/09/20 15:30	12/10/20 09:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92510818

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92510818001	B-105D	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92510818

Sample: B-105D **Lab ID: 92510818001** Collected: 12/09/20 15:30 Received: 12/10/20 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.378 ± 0.285 (0.479) C:92% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.873 ± 0.488 (0.898) C:72% T:80%	pCi/L	01/04/21 11:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.25 ± 0.773 (1.38)	pCi/L	01/05/21 10:13	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92510818

QC Batch:	428417	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92510818001

METHOD BLANK:	2070210	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 92510818001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0869 ± 0.143 (0.495) C:87% T:NA	pCi/L	12/30/20 07:44	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92510818

QC Batch: 428749

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92510818001

METHOD BLANK: 2071921

Matrix: Water

Associated Lab Samples: 92510818001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.161 ± 0.312 (0.758) C:74% T:81%	pCi/L	01/04/21 11:42	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92510818

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92510818

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92510818001	B-105D	EPA 9315	428417		
92510818001	B-105D	EPA 9320	428749		
92510818001	B-105D	Total Radium Calculation	429587		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt (SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
 Upon Receipt

Client Name:
Georgia power - coal

Project #: **WO#: 92510818**



Courier: Commercial Fed Ex UPS USPS Client Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *MT 12/10/20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: *233* Type of Ice: Wet Blue None

Cooler Temp: *23* Correction Factor: Add/Subtract (°C) *±0.4*

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *2.7*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		4. <i>Standard</i>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.
-Includes Date/Time/ID/Analysis Matrix:	<i>MT</i>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)

Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
Page 2 of 2

Issuing Authority:
Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92510818

PM: KLH1

Due Date: 01/04/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S03S kit (N/A)	V/GX (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.



Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JJY
Date: 12/29/2020
Worklist: 58052
Matrix: DW

Method Blank Assessment	
MB Sample ID	2070210
MB concentration:	-0.087
M/B Counting Uncertainty:	0.142
MB MDC:	0.495
MB Numerical Performance Indicator:	-1.20
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS58052	LCSD58052
Count Date:	12/30/2020	12/30/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.041	24.041
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.504
Target Conc. (pCi/L, g, F):	4.756	4.766
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	5.553	4.271
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.831	0.794
Numerical Performance Indicator:	1.88	-1.22
Percent Recovery:	116.76%	89.61%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	
Sample I.D.:	LCS58052
Duplicate Sample I.D.:	LCSD58052
Sample Result (pCi/L, g, F):	5.553
Sample Result Counting Uncertainty (pCi/L, g, F):	0.831
Sample Duplicate Result (pCi/L, g, F):	4.271
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.794
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.185
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	26.31%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision: N/A LAM 1/7/2021

Numerical Indicator less than 3 OK for water batch

LAM 1/7/2021



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: MK1
Date: 12/28/2020
Batch ID: 58061
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2070551
MB concentration:	0.050
M/B Counting Uncertainty:	0.294
MB MDC:	0.601
MB Numerical Performance Indicator:	0.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS58061	LCSD58061
Count Date:	1/6/2021	1/6/2021
Spike I.D.:	20-032	20-032
Spike Concentration (pCi/mL):	32.180	32.180
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.665	0.658
Target Conc. (pCi/L, g, F):	4.836	4.890
Uncertainty (Calculated):	0.227	0.230
Result (pCi/L, g, F):	5.128	4.105
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.996	0.903
Numerical Performance Indicator:	0.56	-1.65
Percent Recovery:	106.06%	83.95%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	73%	73%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS58061	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD58061	
Sample Result (pCi/L, g, F):	5.128	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.996	
Sample Duplicate Result (pCi/L, g, F):	4.105	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.903	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.492	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	23.26%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	32%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

SLC 11/6/2021 Page 14 of 14

January 07, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-234 RADS
Pace Project No.: 92510824

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92510824001	B-104D	Water	12/09/20 11:45	12/10/20 09:05
92510824002	B-107D	Water	12/09/20 11:35	12/10/20 09:05
92510824003	B-108D	Water	12/09/20 09:50	12/10/20 09:05
92510824004	B-111D	Water	12/09/20 14:45	12/10/20 09:05
92510824005	FD	Water	12/09/20 00:00	12/10/20 09:05
92510824006	FB	Water	12/09/20 11:18	12/10/20 09:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-234 RADS
Pace Project No.: 92510824

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92510824001	B-104D	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92510824002	B-107D	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92510824003	B-108D	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92510824004	B-111D	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92510824005	FD	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92510824006	FB	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Sample: B-104D **Lab ID: 92510824001** Collected: 12/09/20 11:45 Received: 12/10/20 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	5.14 ± 1.11 (0.547) C:92% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	10.1 ± 2.03 (0.796) C:65% T:85%	pCi/L	01/04/21 11:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	15.2 ± 3.14 (1.34)	pCi/L	01/05/21 10:13	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Sample: B-107D **Lab ID: 92510824002** Collected: 12/09/20 11:35 Received: 12/10/20 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.806 ± 0.425 (0.682) C:94% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.683 ± 0.409 (0.752) C:69% T:82%	pCi/L	01/04/21 11:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.49 ± 0.834 (1.43)	pCi/L	01/05/21 10:13	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Sample: B-108D **Lab ID: 92510824003** Collected: 12/09/20 09:50 Received: 12/10/20 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.615 ± 0.349 (0.530) C:91% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.699 ± 0.503 (0.992) C:68% T:81%	pCi/L	01/04/21 11:28	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.31 ± 0.852 (1.52)	pCi/L	01/05/21 10:13	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Sample: B-111D **Lab ID: 92510824004** Collected: 12/09/20 14:45 Received: 12/10/20 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	6.52 ± 1.34 (0.715) C:89% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	5.80 ± 1.25 (0.747) C:73% T:85%	pCi/L	01/04/21 11:28	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	12.3 ± 2.59 (1.46)	pCi/L	01/05/21 10:13	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FD Lab ID: 92510824005 Collected: 12/09/20 00:00 Received: 12/10/20 09:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.713 ± 0.364 (0.505) C:93% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.455 ± 0.424 (0.874) C:73% T:86%	pCi/L	01/04/21 11:28	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.17 ± 0.788 (1.38)	pCi/L	01/05/21 10:13	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FB Lab ID: 92510824006 Collected: 12/09/20 11:18 Received: 12/10/20 09:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.203 ± 0.249 (0.511) C:83% T:NA	pCi/L	12/30/20 07:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.315 ± 0.363 (0.763) C:70% T:84%	pCi/L	01/04/21 11:28	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.518 ± 0.612 (1.27)	pCi/L	01/05/21 10:17	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

QC Batch:	428749	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92510824001, 92510824002, 92510824003, 92510824004, 92510824005, 92510824006

METHOD BLANK: 2071921 Matrix: Water

Associated Lab Samples: 92510824001, 92510824002, 92510824003, 92510824004, 92510824005, 92510824006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.161 ± 0.312 (0.758) C:74% T:81%	pCi/L	01/04/21 11:42	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92510824

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92510824001	B-104D	EPA 9315	428417		
92510824002	B-107D	EPA 9315	428417		
92510824003	B-108D	EPA 9315	428417		
92510824004	B-111D	EPA 9315	428417		
92510824005	FD	EPA 9315	428417		
92510824006	FB	EPA 9315	428417		
92510824001	B-104D	EPA 9320	428749		
92510824002	B-107D	EPA 9320	428749		
92510824003	B-108D	EPA 9320	428749		
92510824004	B-111D	EPA 9320	428749		
92510824005	FD	EPA 9320	428749		
92510824006	FB	EPA 9320	428749		
92510824001	B-104D	Total Radium Calculation	429587		
92510824002	B-107D	Total Radium Calculation	429587		
92510824003	B-108D	Total Radium Calculation	429587		
92510824004	B-111D	Total Radium Calculation	429587		
92510824005	FD	Total Radium Calculation	429587		
92510824006	FB	Total Radium Calculation	429590		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

Georgia power - local

Project #:

WO# : 92510824



Courier: Commercial Fed Ex Pace UPS USPS Other: Client

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *MT 12/40/20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: *233* Type of Ice: Wet Blue None

Cooler Temp: *23* Correction Factor: Add/Subtract (°C) *± 0.4*

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *2.7*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	<i>Standard</i>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix:	<i>MT</i>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2

Issuing Authority:
 Pace Carolina Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

WO# : 92510824

PM: KLH1

Due Date: 01/04/21

CLIENT: GA-GA Power

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	VJGK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BPIN	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	4	/	/	/	/
5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
8	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers).



Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JJY
Date: 12/29/2020
Worklist: 58052
Matrix: DW

Method Blank Assessment	
MB Sample ID	2070210
MB concentration:	-0.087
M/B Counting Uncertainty:	0.142
MB MDC:	0.495
MB Numerical Performance Indicator:	-1.20
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS58052	LCSD58052
Count Date:	12/30/2020	12/30/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.041	24.041
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.504
Target Conc. (pCi/L, g, F):	4.756	4.766
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	5.553	4.271
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.831	0.794
Numerical Performance Indicator:	1.88	-1.22
Percent Recovery:	116.76%	89.61%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS58052	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD58052	
Sample Result (pCi/L, g, F):	5.553	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.831	
Sample Duplicate Result (pCi/L, g, F):	4.271	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.794	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	2.185	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	26.31%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision: N/A LAM 1/7/2021

Numerical Indicator less than 3 OK for water batch

LAM 1/7/2021



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: MK1
Date: 12/28/2020
Batch ID: 58061
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2070551
MB concentration:	0.050
M/B Counting Uncertainty:	0.294
MB MDC:	0.601
MB Numerical Performance Indicator:	0.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS58061	LCS58061
Count Date:	1/6/2021	1/6/2021
Spike I.D.:	20-032	20-032
Spike Concentration (pCi/mL):	32.180	32.180
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.665	0.658
Target Conc. (pCi/L, g, F):	4.836	4.890
Uncertainty (Calculated):	0.227	0.230
Result (pCi/L, g, F):	5.128	4.105
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.996	0.903
Numerical Performance Indicator:	0.56	-1.65
Percent Recovery:	106.06%	83.95%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	73%	73%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSD (Y or N)?	Y
Sample I.D.:	LCS58061	Enter Duplicate
Duplicate Sample I.D.:	LCS58061	sample IDs if
Sample Result (pCi/L, g, F):	5.128	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.996	LCSD/LCSD in
Sample Duplicate Result (pCi/L, g, F):	4.105	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.903	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.492	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	23.26%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	32%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

SLC 11/6/2021
Page 19 of 19

December 28, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92510827

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92510827001	B-105D	Water	12/09/20 15:30	12/10/20 09:05

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92510827001	B-105D	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92510827

Sample: B-105D		Lab ID: 92510827001		Collected: 12/09/20 15:30		Received: 12/10/20 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/10/20 10:39		
pH	6.48	Std. Units			1		12/10/20 10:39		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	76.9	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 22:37	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 19:32	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 19:32	7440-38-2	
Barium	0.030	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 19:32	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	12/16/20 13:14	12/18/20 19:32	7440-41-7	
Boron	0.79	mg/L	0.10	0.0052	1	12/16/20 13:14	12/18/20 19:32	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 19:32	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 19:32	7440-47-3	
Cobalt	0.012	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 19:32	7440-48-4	
Lead	0.000052J	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 19:32	7439-92-1	
Lithium	0.014J	mg/L	0.030	0.00081	1	12/16/20 13:14	12/18/20 19:32	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 19:32	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 19:32	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 19:32	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.000087J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 14:05	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	474	mg/L	10.0	10.0	1		12/10/20 11:53		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	17.1	mg/L	1.0	0.60	1		12/16/20 00:52	16887-00-6	
Fluoride	0.075J	mg/L	0.10	0.050	1		12/16/20 00:52	16984-48-8	
Sulfate	220	mg/L	5.0	2.5	5		12/16/20 10:31	14808-79-8	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92510827

QC Batch: 587757	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D ATL
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92510827001

METHOD BLANK: 3106013 Matrix: Water
Associated Lab Samples: 92510827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	12/17/20 22:24	

LABORATORY CONTROL SAMPLE: 3106014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3106015 3106016

Parameter	Units	3106015		3106016		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92510829003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	90.5	1	1	88.9	89.0	-151	-150	75-125	0	20 M1

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

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92510827

QC Batch: 587466 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92510827001

METHOD BLANK: 3104613 Matrix: Water
Associated Lab Samples: 92510827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	12/18/20 19:20	
Arsenic	mg/L	ND	0.0050	0.00078	12/18/20 19:20	
Barium	mg/L	ND	0.010	0.00071	12/18/20 19:20	
Beryllium	mg/L	ND	0.0030	0.000046	12/18/20 19:20	
Boron	mg/L	ND	0.10	0.0052	12/18/20 19:20	
Cadmium	mg/L	ND	0.0025	0.00012	12/18/20 19:20	
Chromium	mg/L	ND	0.010	0.00055	12/18/20 19:20	
Cobalt	mg/L	ND	0.0050	0.00038	12/18/20 19:20	
Lead	mg/L	ND	0.0050	0.000036	12/18/20 19:20	
Lithium	mg/L	ND	0.030	0.00081	12/18/20 19:20	
Molybdenum	mg/L	ND	0.010	0.00069	12/18/20 19:20	
Selenium	mg/L	ND	0.010	0.0016	12/18/20 19:20	
Thallium	mg/L	ND	0.0010	0.00014	12/18/20 19:20	

LABORATORY CONTROL SAMPLE: 3104614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	105	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3104615 3104616

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92510827001	Result	Conc.	Conc.								
Antimony	mg/L	ND	0.1	0.1	0.1	0.10	110	104	75-125	6	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.097	102	97	75-125	5	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

Parameter	Units	3104615		3104616		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92510827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.030	0.1	0.1	0.13	0.12	99	94	75-125	4	20		
Beryllium	mg/L	ND	0.1	0.1	0.098	0.089	98	89	75-125	9	20		
Boron	mg/L	0.79	1	1	1.9	1.8	113	98	75-125	8	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	105	101	75-125	3	20		
Cobalt	mg/L	0.012	0.1	0.1	0.11	0.11	101	97	75-125	3	20		
Lead	mg/L	0.000052J	0.1	0.1	0.098	0.093	98	93	75-125	6	20		
Lithium	mg/L	0.014J	0.1	0.1	0.11	0.10	95	89	75-125	5	20		
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.092	97	92	75-125	5	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.091	97	91	75-125	6	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92510827

QC Batch: 586401	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92510827001

METHOD BLANK: 3099362 Matrix: Water
Associated Lab Samples: 92510827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	12/14/20 12:56	

LABORATORY CONTROL SAMPLE: 3099363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	84	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3099364 3099365

Parameter	Units	3099364		3099365		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	0.000079J	0.0025	0.0020	0.0024	77	92	75-125	17	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

QC Batch: 585931	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92510827001

METHOD BLANK: 3096989 Matrix: Water

Associated Lab Samples: 92510827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	12/10/20 11:52	

LABORATORY CONTROL SAMPLE: 3096990

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	417	104	84-108	

SAMPLE DUPLICATE: 3097556

Parameter	Units	92510779001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	105	101	4	10	

SAMPLE DUPLICATE: 3097589

Parameter	Units	92510794007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	299	287	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92510827

QC Batch: 586999 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92510827001

METHOD BLANK: 3102402 Matrix: Water
Associated Lab Samples: 92510827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/15/20 18:20	
Fluoride	mg/L	ND	0.10	0.050	12/15/20 18:20	
Sulfate	mg/L	ND	1.0	0.50	12/15/20 18:20	

LABORATORY CONTROL SAMPLE: 3102403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.3	99	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	50	47.4	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3102404 3102405

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511446001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	5.9	50	50	60.1	59.7	109	108	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	105	104	90-110	1	10		
Sulfate	mg/L	2.2	50	50	54.0	53.7	104	103	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3102406 3102407

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511524002 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	73.9	50	50	108	109	68	69	90-110	1	10	M1	
Fluoride	mg/L	0.41	2.5	2.5	2.9	2.9	99	99	90-110	0	10		
Sulfate	mg/L	89.4	50	50	121	122	63	65	90-110	1	10	M1	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE


Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92510827

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92510827001	B-105D				
92510827001	B-105D	EPA 3010A	587757	EPA 6010D	587879
92510827001	B-105D	EPA 3005A	587466	EPA 6020B	587562
92510827001	B-105D	EPA 7470A	586401	EPA 7470A	586700
92510827001	B-105D	SM 2450C-2011	585931		
92510827001	B-105D	EPA 300.0 Rev 2.1 1993	586999		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Georgia power - local Project #: **WO#: 92510827**



Courier: Commercial Fed Ex UPS USPS Client Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: MT 12/10/20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: 233 Type of Ice: Wet Blue None

Cooler Temp: 2.3 Correction Factor: Add/Subtract (°C) ± 0.4

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 2.7

USDA Regulated Soil (N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	<u>Standard</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers: _____

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)

Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
Page 2 of 2

Issuing Authority:
Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO#: 92510827

PM: KLH1

Due Date: 12/24/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFLU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S03S kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
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6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
8	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

December 28, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92510829

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92510829

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92510829001	B-104D	Water	12/09/20 11:45	12/10/20 09:05
92510829002	B-107D	Water	12/09/20 11:35	12/10/20 09:05
92510829003	B-108D	Water	12/09/20 09:50	12/10/20 09:05
92510829004	B-111D	Water	12/09/20 14:45	12/10/20 09:05
92510829005	FD	Water	12/09/20 00:00	12/10/20 09:05
92510829006	FB	Water	12/09/20 11:18	12/10/20 09:05

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92510829001	B-104D	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92510829002	B-107D	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92510829003	B-108D	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92510829004	B-111D	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92510829005	FD	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92510829006	FB	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Sample: B-104D		Lab ID: 92510829001		Collected: 12/09/20 11:45		Received: 12/10/20 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/28/20 12:34		
pH	6.44	Std. Units			1		12/28/20 12:34		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	154	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 22:43	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00079J	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 19:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 19:54	7440-38-2	
Barium	0.026	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 19:54	7440-39-3	
Beryllium	0.0013J	mg/L	0.015	0.00023	5	12/16/20 13:14	12/22/20 13:23	7440-41-7	D3
Boron	0.26J	mg/L	0.50	0.026	5	12/16/20 13:14	12/22/20 13:23	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 19:54	7440-43-9	
Chromium	0.0011J	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 19:54	7440-47-3	
Cobalt	0.17	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 19:54	7440-48-4	
Lead	0.000051J	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 19:54	7439-92-1	
Lithium	0.039J	mg/L	0.15	0.0040	5	12/16/20 13:14	12/22/20 13:23	7439-93-2	D3
Molybdenum	0.0012J	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 19:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 19:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 19:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.000079J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 13:44	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	862	mg/L	20.0	20.0	1		12/10/20 11:54		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	7.7	mg/L	1.0	0.60	1		12/16/20 01:05	16887-00-6	
Fluoride	0.33	mg/L	0.10	0.050	1		12/16/20 01:05	16984-48-8	
Sulfate	415	mg/L	10.0	5.0	10		12/16/20 10:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Sample: B-107D Lab ID: 92510829002 Collected: 12/09/20 11:35 Received: 12/10/20 09:05 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/28/20 12:34		
pH	5.91	Std. Units			1		12/28/20 12:34		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	85.4	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 22:49	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 20:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 20:00	7440-38-2	
Barium	0.13	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 20:00	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00023	5	12/16/20 13:14	12/22/20 13:28	7440-41-7	D3
Boron	11.7	mg/L	0.50	0.026	5	12/16/20 13:14	12/22/20 13:28	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 20:00	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 20:00	7440-47-3	
Cobalt	0.0017J	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 20:00	7440-48-4	
Lead	0.000044J	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 20:00	7439-92-1	
Lithium	0.017J	mg/L	0.15	0.0040	5	12/16/20 13:14	12/22/20 13:28	7439-93-2	D3
Molybdenum	ND	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 20:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 20:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 20:00	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00016J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 13:53	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	564	mg/L	10.0	10.0	1		12/10/20 11:54		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12.5	mg/L	1.0	0.60	1		12/19/20 01:17	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		12/19/20 01:17	16984-48-8	
Sulfate	273	mg/L	6.0	3.0	6		12/19/20 12:19	14808-79-8	M6

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Sample: B-108D		Lab ID: 92510829003		Collected: 12/09/20 09:50		Received: 12/10/20 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/28/20 12:34		
pH	5.94	Std. Units			1		12/28/20 12:34		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	90.5	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 22:55	7440-70-2	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 20:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 20:06	7440-38-2	
Barium	0.066	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 20:06	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00023	5	12/16/20 13:14	12/22/20 13:34	7440-41-7	D3
Boron	6.7	mg/L	0.50	0.026	5	12/16/20 13:14	12/22/20 13:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 20:06	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 20:06	7440-47-3	
Cobalt	0.0048J	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 20:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 20:06	7439-92-1	
Lithium	0.016J	mg/L	0.15	0.0040	5	12/16/20 13:14	12/22/20 13:34	7439-93-2	D3
Molybdenum	ND	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 20:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 20:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 20:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.00014J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 13:55	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	573	mg/L	10.0	10.0	1		12/10/20 11:54		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	29.1	mg/L	1.0	0.60	1		12/19/20 02:41	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		12/19/20 02:41	16984-48-8	
Sulfate	277	mg/L	6.0	3.0	6		12/19/20 13:03	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Sample: B-111D		Lab ID: 92510829004		Collected: 12/09/20 14:45		Received: 12/10/20 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/28/20 12:34		
pH	6.64	Std. Units			1		12/28/20 12:34		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	105	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 23:31	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 20:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 20:12	7440-38-2	
Barium	0.027	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 20:12	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00023	5	12/16/20 13:14	12/22/20 13:40	7440-41-7	D3
Boron	0.34J	mg/L	0.50	0.026	5	12/16/20 13:14	12/22/20 13:40	7440-42-8	D3
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 20:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 20:12	7440-47-3	
Cobalt	0.00076J	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 20:12	7440-48-4	
Lead	0.000058J	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 20:12	7439-92-1	
Lithium	0.021J	mg/L	0.15	0.0040	5	12/16/20 13:14	12/22/20 13:40	7439-93-2	D3
Molybdenum	0.0055J	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 20:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 20:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 20:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	0.000094J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 13:58	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	490	mg/L	10.0	10.0	1		12/10/20 11:54		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12.8	mg/L	1.0	0.60	1		12/19/20 02:55	16887-00-6	
Fluoride	0.33	mg/L	0.10	0.050	1		12/19/20 02:55	16984-48-8	
Sulfate	197	mg/L	5.0	2.5	5		12/19/20 13:18	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Sample: FD		Lab ID: 92510829005		Collected: 12/09/20 00:00	Received: 12/10/20 09:05	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	89.7	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 23:37	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 20:34	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 20:34	7440-38-2		
Barium	0.061	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 20:34	7440-39-3		
Beryllium	ND	mg/L	0.015	0.00023	5	12/16/20 13:14	12/22/20 13:45	7440-41-7	D3	
Boron	6.4	mg/L	0.50	0.026	5	12/16/20 13:14	12/22/20 13:45	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 20:34	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 20:34	7440-47-3		
Cobalt	0.0044J	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 20:34	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 20:34	7439-92-1		
Lithium	0.015J	mg/L	0.15	0.0040	5	12/16/20 13:14	12/22/20 13:45	7439-93-2	D3	
Molybdenum	ND	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 20:34	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 20:34	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 20:34	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	0.000097J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 14:00	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	569	mg/L	10.0	10.0	1		12/10/20 12:04			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	29.0	mg/L	1.0	0.60	1		12/19/20 03:09	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		12/19/20 03:09	16984-48-8		
Sulfate	276	mg/L	6.0	3.0	6		12/19/20 13:33	14808-79-8		

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

Sample: FB		Lab ID: 92510829006		Collected: 12/09/20 11:18	Received: 12/10/20 09:05	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	12/17/20 10:10	12/17/20 23:43	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	12/16/20 13:14	12/18/20 20:40	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	12/16/20 13:14	12/18/20 20:40	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	12/16/20 13:14	12/18/20 20:40	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	12/16/20 13:14	12/18/20 20:40	7440-41-7		
Boron	0.044J	mg/L	0.10	0.0052	1	12/16/20 13:14	12/18/20 20:40	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	12/16/20 13:14	12/18/20 20:40	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	12/16/20 13:14	12/18/20 20:40	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	12/16/20 13:14	12/18/20 20:40	7440-48-4		
Lead	0.000048J	mg/L	0.0050	0.000036	1	12/16/20 13:14	12/18/20 20:40	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	12/16/20 13:14	12/18/20 20:40	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	12/16/20 13:14	12/18/20 20:40	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	12/16/20 13:14	12/18/20 20:40	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	12/16/20 13:14	12/18/20 20:40	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	0.000087J	mg/L	0.00050	0.000078	1	12/14/20 08:30	12/14/20 14:03	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		12/10/20 12:04			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		12/19/20 03:23	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		12/19/20 03:23	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		12/19/20 03:23	14808-79-8		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

QC Batch: 587757 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

METHOD BLANK: 3106013 Matrix: Water
Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	12/17/20 22:24	

LABORATORY CONTROL SAMPLE: 3106014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3106015 3106016

Parameter	Units	3106015		3106016		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92510829003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	90.5	1	1	88.9	89.0	-151	-150	75-125	0	20 M1

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

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

QC Batch: 587466 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

METHOD BLANK: 3104613 Matrix: Water
Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	12/18/20 19:20	
Arsenic	mg/L	ND	0.0050	0.00078	12/18/20 19:20	
Barium	mg/L	ND	0.010	0.00071	12/18/20 19:20	
Beryllium	mg/L	ND	0.0030	0.000046	12/18/20 19:20	
Boron	mg/L	ND	0.10	0.0052	12/18/20 19:20	
Cadmium	mg/L	ND	0.0025	0.00012	12/18/20 19:20	
Chromium	mg/L	ND	0.010	0.00055	12/18/20 19:20	
Cobalt	mg/L	ND	0.0050	0.00038	12/18/20 19:20	
Lead	mg/L	ND	0.0050	0.000036	12/18/20 19:20	
Lithium	mg/L	ND	0.030	0.00081	12/18/20 19:20	
Molybdenum	mg/L	ND	0.010	0.00069	12/18/20 19:20	
Selenium	mg/L	ND	0.010	0.0016	12/18/20 19:20	
Thallium	mg/L	ND	0.0010	0.00014	12/18/20 19:20	

LABORATORY CONTROL SAMPLE: 3104614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	105	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3104615 3104616

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92510827001	Result	Spike Conc.	Spike Conc.								
Antimony	mg/L	ND	0.1	0.1	0.1	0.10	110	104	75-125	6	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.097	102	97	75-125	5	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92510829

Parameter	Units	3104615		3104616		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92510827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.030	0.1	0.1	0.13	0.12	99	94	75-125	4	20		
Beryllium	mg/L	ND	0.1	0.1	0.098	0.089	98	89	75-125	9	20		
Boron	mg/L	0.79	1	1	1.9	1.8	113	98	75-125	8	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	105	101	75-125	3	20		
Cobalt	mg/L	0.012	0.1	0.1	0.11	0.11	101	97	75-125	3	20		
Lead	mg/L	0.000052J	0.1	0.1	0.098	0.093	98	93	75-125	6	20		
Lithium	mg/L	0.014J	0.1	0.1	0.11	0.10	95	89	75-125	5	20		
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.092	97	92	75-125	5	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.091	97	91	75-125	6	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

QC Batch: 586401 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

METHOD BLANK: 3099362 Matrix: Water
Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	12/14/20 12:56	

LABORATORY CONTROL SAMPLE: 3099363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	84	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3099364 3099365

Parameter	Units	3099364		3099365		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	0.000079J	0.0025	0.0020	0.0024	77	92	75-125	17	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92510829

QC Batch: 585931 Analysis Method: SM 2450C-2011
 QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Peachtree Corners, GA
 Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

METHOD BLANK: 3096989 Matrix: Water
 Associated Lab Samples: 92510829001, 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	12/10/20 11:52	

LABORATORY CONTROL SAMPLE: 3096990

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	417	104	84-108	

SAMPLE DUPLICATE: 3097556

Parameter	Units	92510779001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	105	101	4	10	

SAMPLE DUPLICATE: 3097589

Parameter	Units	92510794007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	299	287	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

QC Batch: 586999 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92510829001

METHOD BLANK: 3102402 Matrix: Water
Associated Lab Samples: 92510829001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/15/20 18:20	
Fluoride	mg/L	ND	0.10	0.050	12/15/20 18:20	
Sulfate	mg/L	ND	1.0	0.50	12/15/20 18:20	

LABORATORY CONTROL SAMPLE: 3102403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.3	99	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	50	47.4	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3102404 3102405

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511446001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	5.9	50	50	60.1	59.7	109	108	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	105	104	90-110	1	10		
Sulfate	mg/L	2.2	50	50	54.0	53.7	104	103	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3102406 3102407

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511524002 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	73.9	50	50	108	109	68	69	90-110	1	10	M1	
Fluoride	mg/L	0.41	2.5	2.5	2.9	2.9	99	99	90-110	0	10		
Sulfate	mg/L	89.4	50	50	121	122	63	65	90-110	1	10	M1	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92510829

QC Batch: 587003 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

METHOD BLANK: 3102423 Matrix: Water
Associated Lab Samples: 92510829002, 92510829003, 92510829004, 92510829005, 92510829006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/19/20 00:49	
Fluoride	mg/L	ND	0.10	0.050	12/19/20 00:49	
Sulfate	mg/L	ND	1.0	0.50	12/19/20 00:49	

LABORATORY CONTROL SAMPLE: 3102424

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.5	101	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	48.5	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3102425 3102426

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92510829002 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	12.5	50	50	65.8	66.0	107	107	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	106	108	90-110	2	10		
Sulfate	mg/L	273	50	50	312	313	77	80	90-110	0	10 M6		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3102427 3102428

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511102002 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	29.7	50	50	82.6	83.7	106	108	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	106	110	90-110	3	10		
Sulfate	mg/L	42.8	50	50	93.8	94.6	102	104	90-110	1	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92510829

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92510829

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92510829001	B-104D				
92510829002	B-107D				
92510829003	B-108D				
92510829004	B-111D				
92510829001	B-104D	EPA 3010A	587757	EPA 6010D	587879
92510829002	B-107D	EPA 3010A	587757	EPA 6010D	587879
92510829003	B-108D	EPA 3010A	587757	EPA 6010D	587879
92510829004	B-111D	EPA 3010A	587757	EPA 6010D	587879
92510829005	FD	EPA 3010A	587757	EPA 6010D	587879
92510829006	FB	EPA 3010A	587757	EPA 6010D	587879
92510829001	B-104D	EPA 3005A	587466	EPA 6020B	587562
92510829002	B-107D	EPA 3005A	587466	EPA 6020B	587562
92510829003	B-108D	EPA 3005A	587466	EPA 6020B	587562
92510829004	B-111D	EPA 3005A	587466	EPA 6020B	587562
92510829005	FD	EPA 3005A	587466	EPA 6020B	587562
92510829006	FB	EPA 3005A	587466	EPA 6020B	587562
92510829001	B-104D	EPA 7470A	586401	EPA 7470A	586700
92510829002	B-107D	EPA 7470A	586401	EPA 7470A	586700
92510829003	B-108D	EPA 7470A	586401	EPA 7470A	586700
92510829004	B-111D	EPA 7470A	586401	EPA 7470A	586700
92510829005	FD	EPA 7470A	586401	EPA 7470A	586700
92510829006	FB	EPA 7470A	586401	EPA 7470A	586700
92510829001	B-104D	SM 2450C-2011	585931		
92510829002	B-107D	SM 2450C-2011	585931		
92510829003	B-108D	SM 2450C-2011	585931		
92510829004	B-111D	SM 2450C-2011	585931		
92510829005	FD	SM 2450C-2011	585931		
92510829006	FB	SM 2450C-2011	585931		
92510829001	B-104D	EPA 300.0 Rev 2.1 1993	586999		
92510829002	B-107D	EPA 300.0 Rev 2.1 1993	587003		
92510829003	B-108D	EPA 300.0 Rev 2.1 1993	587003		
92510829004	B-111D	EPA 300.0 Rev 2.1 1993	587003		
92510829005	FD	EPA 300.0 Rev 2.1 1993	587003		
92510829006	FB	EPA 300.0 Rev 2.1 1993	587003		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

Georgia power - coal

Project #:

WO#: 92510829



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *MT 12/10/20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: *233* Type of Ice: Wet Blue None

Cooler Temp:

23 Correction Factor: Add/Subtract (°C) *±0.4*

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *2.7*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	<i>Standard</i>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix:	<i>MT</i>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

WO# : 92510829

PM: KLH1

Due Date: 12/24/20

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

CLIENT: GA-GA Power

**Bottom half of box is to list number of bottles

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BPIN	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2	/	/	/	/
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10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers).

January 11, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-1 RADS
Pace Project No.: 92512943

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-1 RADJ

Pace Project No.: 92512943

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-1 RADS
Pace Project No.: 92512943

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92512943001	B-110D	Water	12/17/20 15:40	12/18/20 15:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1 RADS
Pace Project No.: 92512943

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92512943001	B-110D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92512943

Sample: B-110D **Lab ID: 92512943001** Collected: 12/17/20 15:40 Received: 12/18/20 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.645 ± 0.382 (0.631) C:88% T:NA	pCi/L	01/06/21 07:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.334 ± 0.541 (1.17) C:72% T:79%	pCi/L	01/05/21 13:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.979 ± 0.923 (1.80)	pCi/L	01/06/21 14:34	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92512943

QC Batch: 428750

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92512943001

METHOD BLANK: 2071922

Matrix: Water

Associated Lab Samples: 92512943001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.694 ± 0.380 (0.676) C:79% T:80%	pCi/L	01/05/21 13:26	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92512943

QC Batch: 429175

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92512943001

METHOD BLANK: 2073293

Matrix: Water

Associated Lab Samples: 92512943001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.176 ± 0.138 (0.246) C:97% T:NA	pCi/L	01/05/21 17:40	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92512943

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE


Project: PLANT MCDONOUGH AP-1 RADS

Pace Project No.: 92512943

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92512943001	B-110D	EPA 9315	429175		
92512943001	B-110D	EPA 9320	428750		
92512943001	B-110D	Total Radium Calculation	429861		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: GA Power

Project #: **WO# : 92512943**



92512943

Date/Initials Person Examining Contents: 12/18/20
LOH

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer: RF Gun ID: 233 Type of Ice: Wet Blue None

Cooler Temp: 3.7 Correction Factor: Add/Subtract (°C) 0.4

Cooler Temp Corrected (°C): 4.1

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.
-Includes Date/Time/ID/Analysis Matrix:	<u>W</u>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY _____ Field Data Required? Yes No

_____ Lot ID of split containers: _____

CLIENT NOTIFICATION/RESOLUTION _____

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 North Carolina Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92512943

PM: KLH1

Due Date: 01/12/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP5U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG3H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	V69T-40 mL VOA Na2S2O3 (N/A)	V69U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GX (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 1/5/2021
Worklist: 58138
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2073293	
MB concentration:	0.176	
M/B Counting Uncertainty:	0.135	
MB MDC:	0.246	
MB Numerical Performance Indicator:	2.55	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD58138	LCSD58138
Count Date:	1/6/2021	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.041	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.515	
Target Conc. (pCi/L, g, F):	4.669	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.726	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.782	
Numerical Performance Indicator:	0.14	
Percent Recovery:	101.21%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	92512557001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	92512557001DUP	
Sample Result (pCi/L, g, F):	0.259	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.248	
Sample Duplicate Result (pCi/L, g, F):	0.181	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.219	
Are sample and/or duplicate results below RL?	See Below##	
Duplicate Numerical Performance Indicator:	0.458	92512557001
Duplicate RPD:	35.10%	92512557001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:		
MS/MSD Duplicate Status vs Numerical Indicator:		
MS/MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision.

N/A
AM 1/6/21

KLB
1-6-2021

AM 1/6/21



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 1/5/2021
Worklist: 58138
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2073293	
MB concentration:	0.176	
M/B Counting Uncertainty:	0.135	
MB MDC:	0.246	
MB Numerical Performance Indicator:	2.55	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD58138	LCSD58138
Count Date:	1/6/2021	1/6/2021
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.041	24.041
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.515	0.507
Target Conc. (pCi/L, g, F):	4.669	4.743
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.726	4.173
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.782	0.736
Numerical Performance Indicator:	0.14	-1.51
Percent Recovery:	101.21%	87.98%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCSD58138	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Duplicate Sample I.D.:	LCSD58138	
Sample Result (pCi/L, g, F):	4.726	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.782	
Sample Duplicate Result (pCi/L, g, F):	4.173	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.736	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.009	92512557001
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.99%	92512557001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

KUB
1-6-2021

LAM 1/6/21



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 12/31/2020
Worklist: 58095
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	2071922	
MB concentration:	0.694	
M/B 2 Sigma CSU:	0.380	
MB MDC:	0.676	
MB Numerical Performance Indicator:	3.58	
MB Status vs Numerical Indicator:	Fail*	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCSD58095	LCSD58095
Count Date:	1/5/2021	1/5/2021
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.002	37.002
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.803	0.801
Target Conc. (pCi/L, g, F):	4.610	4.617
Uncertainty (Calculated):	0.226	0.226
Result (pCi/L, g, F):	5.581	5.412
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.255	1.220
Numerical Performance Indicator:	1.49	1.25
Percent Recovery:	121.08%	117.21%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCSD58095	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD58095	
Sample Result (pCi/L, g, F):	5.581	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.255	
Sample Duplicate Result (pCi/L, g, F):	5.412	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.220	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.190	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	3.25%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*The method blank result is below the reporting limit for this analysis and is acceptable.

12/31/2021

January 11, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-234 RADS
Pace Project No.: 92512944

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-234 RADS
Pace Project No.: 92512944

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92512944001	B-102D	Water	12/17/20 10:15	12/18/20 15:30
92512944002	B-106D	Water	12/17/20 13:05	12/18/20 15:30
92512944003	EB	Water	12/17/20 09:50	12/18/20 15:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92512944001	B-102D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92512944002	B-106D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92512944003	EB	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

Sample: B-102D **Lab ID: 92512944001** Collected: 12/17/20 10:15 Received: 12/18/20 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.162 ± 0.271 (0.610) C:89% T:NA	pCi/L	01/06/21 07:00	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.06 ± 0.644 (1.24) C:70% T:73%	pCi/L	01/05/21 13:26	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.22 ± 0.915 (1.85)	pCi/L	01/06/21 14:34	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

Sample: B-106D **Lab ID: 92512944002** Collected: 12/17/20 13:05 Received: 12/18/20 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.195 ± 0.379 (0.872) C:68% T:NA	pCi/L	01/06/21 07:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.757 ± 0.568 (1.13) C:69% T:75%	pCi/L	01/05/21 13:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.952 ± 0.947 (2.00)	pCi/L	01/06/21 14:34	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

Sample: EB **Lab ID: 92512944003** Collected: 12/17/20 09:50 Received: 12/18/20 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.0835 ± 0.164 (0.513) C:94% T:NA	pCi/L	01/06/21 07:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.531 ± 0.595 (1.26) C:70% T:79%	pCi/L	01/05/21 13:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.531 ± 0.759 (1.77)	pCi/L	01/06/21 14:34	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

QC Batch:	428750	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92512944001, 92512944002, 92512944003

METHOD BLANK: 2071922 Matrix: Water

Associated Lab Samples: 92512944001, 92512944002, 92512944003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.694 ± 0.380 (0.676) C:79% T:80%	pCi/L	01/05/21 13:26	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

QC Batch:	429175	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92512944001, 92512944002, 92512944003

METHOD BLANK: 2073293 Matrix: Water

Associated Lab Samples: 92512944001, 92512944002, 92512944003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.176 ± 0.138 (0.246) C:97% T:NA	pCi/L	01/05/21 17:40	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-234 RADS
Pace Project No.: 92512944

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-234 RADS

Pace Project No.: 92512944

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92512944001	B-102D	EPA 9315	429175		
92512944002	B-106D	EPA 9315	429175		
92512944003	EB	EPA 9315	429175		
92512944001	B-102D	EPA 9320	428750		
92512944002	B-106D	EPA 9320	428750		
92512944003	EB	EPA 9320	428750		
92512944001	B-102D	Total Radium Calculation	429861		
92512944002	B-106D	Total Radium Calculation	429861		
92512944003	EB	Total Radium Calculation	429861		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt: _____ Client Name: G. Alower Project #: _____
 Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

WO# : 92512944

 92512944

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 12/18/20
LOH

Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: Wet Blue None
 HR Gun ID: 233 Type of Ice: _____

Biological Tissue Frozen?
 Yes No N/A

Cooler Temp: 3.7 Correction Factor: 0.4
 Add/Subtract (°C) 4.1

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.1
 USDA Regulated Soil (N/A, water sample)
 Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <u>W</u>	9.
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY _____ Field Data Required? Yes No

Lot ID of split containers: _____

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92512944

PM: KLH1

Due Date: 01/12/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1		1	1																									
2		1	1																									
3		1	1																									
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

January 05, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92512947

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92512947

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92512947001	B-110D	Water	12/17/20 15:40	12/18/20 15:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92512947

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92512947001	B-110D	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

Sample: B-110D		Lab ID: 92512947001		Collected: 12/17/20 15:40		Received: 12/18/20 15:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/18/20 16:56		
pH	6.99	Std. Units			1		12/18/20 16:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	47.8	mg/L	1.0	0.070	1	12/28/20 09:00	12/28/20 21:49	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	12/30/20 09:56	12/30/20 19:52	7440-36-0	
Arsenic	0.0017J	mg/L	0.0050	0.00078	1	12/30/20 09:56	12/30/20 19:52	7440-38-2	
Barium	0.0061J	mg/L	0.010	0.00071	1	12/30/20 09:56	12/30/20 19:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	12/30/20 09:56	12/31/20 17:17	7440-41-7	
Boron	0.28	mg/L	0.10	0.0052	1	12/30/20 09:56	12/30/20 19:52	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/30/20 09:56	12/30/20 19:52	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/30/20 09:56	12/30/20 19:52	7440-47-3	
Cobalt	0.0016J	mg/L	0.0050	0.00038	1	12/30/20 09:56	12/30/20 19:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	12/30/20 09:56	12/30/20 19:52	7439-92-1	
Lithium	0.011J	mg/L	0.030	0.00081	1	12/30/20 09:56	12/30/20 19:52	7439-93-2	
Molybdenum	0.076	mg/L	0.010	0.00069	1	12/30/20 09:56	12/30/20 19:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/30/20 09:56	12/30/20 19:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/30/20 09:56	12/30/20 19:52	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:31	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	251	mg/L	10.0	10.0	1		12/22/20 17:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.1	mg/L	1.0	0.60	1		12/23/20 23:28	16887-00-6	
Fluoride	0.72	mg/L	0.10	0.050	1		12/23/20 23:28	16984-48-8	
Sulfate	51.4	mg/L	1.0	0.50	1		12/23/20 23:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

QC Batch: 589491	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D ATL
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92512947001

METHOD BLANK: 3113717 Matrix: Water
Associated Lab Samples: 92512947001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	12/28/20 21:38	

LABORATORY CONTROL SAMPLE: 3113718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3113719 3113720

Parameter	Units	3113719		3113720		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92512951001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	71.5	1	1	75.6	73.7	406	223	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

QC Batch: 589986 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92512947001

METHOD BLANK: 3115564 Matrix: Water
Associated Lab Samples: 92512947001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	12/30/20 19:40	
Arsenic	mg/L	ND	0.0050	0.00078	12/30/20 19:40	
Barium	mg/L	ND	0.010	0.00071	12/30/20 19:40	
Beryllium	mg/L	ND	0.0030	0.000046	12/31/20 16:06	
Boron	mg/L	ND	0.10	0.0052	12/30/20 19:40	
Cadmium	mg/L	ND	0.0025	0.00012	12/30/20 19:40	
Chromium	mg/L	ND	0.010	0.00055	12/30/20 19:40	
Cobalt	mg/L	ND	0.0050	0.00038	12/30/20 19:40	
Lead	mg/L	ND	0.0050	0.000036	12/30/20 19:40	
Lithium	mg/L	ND	0.030	0.00081	12/30/20 19:40	
Molybdenum	mg/L	ND	0.010	0.00069	12/30/20 19:40	
Selenium	mg/L	ND	0.010	0.0016	12/30/20 19:40	
Thallium	mg/L	ND	0.0010	0.00014	12/30/20 19:40	

LABORATORY CONTROL SAMPLE: 3115565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.093	93	80-120	
Arsenic	mg/L	0.1	0.089	89	80-120	
Barium	mg/L	0.1	0.086	86	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.91	91	80-120	
Cadmium	mg/L	0.1	0.092	92	80-120	
Chromium	mg/L	0.1	0.092	92	80-120	
Cobalt	mg/L	0.1	0.092	92	80-120	
Lead	mg/L	0.1	0.088	88	80-120	
Lithium	mg/L	0.1	0.086	86	80-120	
Molybdenum	mg/L	0.1	0.095	95	80-120	
Selenium	mg/L	0.1	0.088	88	80-120	
Thallium	mg/L	0.1	0.088	88	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3115566 3115567

Parameter	Units	92512947001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Arsenic	mg/L	0.0017J	0.1	0.1	0.095	0.094	93	92	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92512947

Parameter	Units	3115566		3115567		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92512947001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.0061J	0.1	0.1	0.094	0.091	87	85	75-125	2	20		
Beryllium	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Boron	mg/L	0.28	1	1	1.1	1.1	80	85	75-125	5	20		
Cadmium	mg/L	ND	0.1	0.1	0.091	0.091	91	91	75-125	0	20		
Chromium	mg/L	ND	0.1	0.1	0.090	0.090	90	90	75-125	0	20		
Cobalt	mg/L	0.0016J	0.1	0.1	0.091	0.091	90	89	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.089	0.086	89	86	75-125	3	20		
Lithium	mg/L	0.011J	0.1	0.1	0.094	0.093	82	82	75-125	0	20		
Molybdenum	mg/L	0.076	0.1	0.1	0.17	0.17	96	91	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.091	0.089	91	89	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.089	0.087	89	87	75-125	3	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

QC Batch: 588542	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92512947001

METHOD BLANK: 3109729 Matrix: Water

Associated Lab Samples: 92512947001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	12/22/20 12:50	

LABORATORY CONTROL SAMPLE: 3109730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3109731 3109732

Parameter	Units	3109731		3109732		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92512574004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0022	0.0023	89	90	75-125	1	20

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

QC Batch: 588927	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92512947001

METHOD BLANK: 3111378 Matrix: Water
Associated Lab Samples: 92512947001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	12/22/20 17:31	

LABORATORY CONTROL SAMPLE: 3111379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	386	96	84-108	

SAMPLE DUPLICATE: 3111380

Parameter	Units	92512580004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	294	295	0	10	

SAMPLE DUPLICATE: 3111381

Parameter	Units	92513185001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	339	340	0	10	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

QC Batch: 589104 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92512947001

METHOD BLANK: 3112052 Matrix: Water
Associated Lab Samples: 92512947001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/23/20 16:31	
Fluoride	mg/L	ND	0.10	0.050	12/23/20 16:31	
Sulfate	mg/L	ND	1.0	0.50	12/23/20 16:31	

LABORATORY CONTROL SAMPLE: 3112053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	52.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112054 3112055

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92513456002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	409	50	50	471	456	125	94	90-110	3	10	M6	
Fluoride	mg/L	0.14	2.5	2.5	2.1	2.1	77	79	90-110	2	10	M1	
Sulfate	mg/L	403	50	50	466	450	126	93	90-110	4	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112056 3112057

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92512580004	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.4	50	50	57.4	57.5	108	108	90-110	0	10		
Fluoride	mg/L	0.18	2.5	2.5	2.7	2.7	102	102	90-110	0	10		
Sulfate	mg/L	11.3	50	50	65.5	65.6	108	109	90-110	0	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 92512947

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 92512947

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92512947001	B-110D				
92512947001	B-110D	EPA 3010A	589491	EPA 6010D	589516
92512947001	B-110D	EPA 3005A	589986	EPA 6020B	590063
92512947001	B-110D	EPA 7470A	588542	EPA 7470A	588758
92512947001	B-110D	SM 2450C-2011	588927		
92512947001	B-110D	EPA 300.0 Rev 2.1 1993	589104		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: GA Power

Project # **WO# : 92512947**

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____



Date/Initials Person Examining Contents: 12/18/20
LOH

Custody Seal Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer: IR Gun ID: 233 Type of Ice: Wet Blue None

Biological Tissue Frozen? Yes No N/A

Cooler Temp: 3.7 Correction Factor: Add/Subtract (°C) 0.4

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.1

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (Internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>W</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92512947

PH: KLH1

Due Date: 01/05/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)			
1		1				1																								
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers).

January 05, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Stephen Benda
Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92512951

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92512951001	B-102D	Water	12/17/20 10:15	12/18/20 15:30
92512951002	B-106D	Water	12/17/20 13:05	12/18/20 15:30
92512951003	EB	Water	12/17/20 09:50	12/18/20 15:30

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92512951001	B-102D	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92512951002	B-106D	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92512951003	EB	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Sample: B-102D		Lab ID: 92512951001		Collected: 12/17/20 10:15		Received: 12/18/20 15:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/18/20 17:05		
pH	5.39	Std. Units			1		12/18/20 17:05		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	71.5	mg/L	1.0	0.070	1	12/28/20 09:00	12/28/20 21:54	7440-70-2	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0016J	mg/L	0.0030	0.00028	1	12/30/20 09:56	12/30/20 20:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/30/20 09:56	12/30/20 20:15	7440-38-2	
Barium	0.022	mg/L	0.010	0.00071	1	12/30/20 09:56	12/30/20 20:15	7440-39-3	
Beryllium	0.0014J	mg/L	0.0030	0.000046	1	12/30/20 09:56	12/31/20 17:40	7440-41-7	
Boron	2.4	mg/L	0.10	0.0052	1	12/30/20 09:56	12/30/20 20:15	7440-42-8	
Cadmium	0.00067J	mg/L	0.0025	0.00012	1	12/30/20 09:56	12/30/20 20:15	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/30/20 09:56	12/30/20 20:15	7440-47-3	
Cobalt	0.014	mg/L	0.0050	0.00038	1	12/30/20 09:56	12/30/20 20:15	7440-48-4	
Lead	0.000037J	mg/L	0.0050	0.000036	1	12/30/20 09:56	12/30/20 20:15	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00081	1	12/30/20 09:56	12/30/20 20:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	12/30/20 09:56	12/30/20 20:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/30/20 09:56	12/30/20 20:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/30/20 09:56	12/30/20 20:15	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:33	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	449	mg/L	10.0	10.0	1		12/22/20 17:34		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10.3	mg/L	1.0	0.60	1		12/23/20 23:43	16887-00-6	
Fluoride	0.079J	mg/L	0.10	0.050	1		12/23/20 23:43	16984-48-8	
Sulfate	249	mg/L	5.0	2.5	5		12/24/20 11:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Sample: B-106D		Lab ID: 92512951002		Collected: 12/17/20 13:05		Received: 12/18/20 15:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		12/18/20 17:05		
pH	5.82	Std. Units			1		12/18/20 17:05		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	43.2	mg/L	1.0	0.070	1	12/28/20 09:00	12/28/20 22:25	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00048J	mg/L	0.0030	0.00028	1	12/30/20 09:56	12/30/20 20:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/30/20 09:56	12/30/20 20:20	7440-38-2	
Barium	0.022	mg/L	0.010	0.00071	1	12/30/20 09:56	12/30/20 20:20	7440-39-3	
Beryllium	0.00012J	mg/L	0.0030	0.000046	1	12/30/20 09:56	12/31/20 17:45	7440-41-7	
Boron	1.4	mg/L	0.10	0.0052	1	12/30/20 09:56	12/30/20 20:20	7440-42-8	
Cadmium	0.00020J	mg/L	0.0025	0.00012	1	12/30/20 09:56	12/30/20 20:20	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/30/20 09:56	12/30/20 20:20	7440-47-3	
Cobalt	0.00087J	mg/L	0.0050	0.00038	1	12/30/20 09:56	12/30/20 20:20	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	12/30/20 09:56	12/30/20 20:20	7439-92-1	
Lithium	0.0048J	mg/L	0.030	0.00081	1	12/30/20 09:56	12/30/20 20:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	12/30/20 09:56	12/30/20 20:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/30/20 09:56	12/30/20 20:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/30/20 09:56	12/30/20 20:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:35	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	340	mg/L	10.0	10.0	1		12/22/20 17:34		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8.0	mg/L	1.0	0.60	1		12/24/20 01:42	16887-00-6	
Fluoride	0.052J	mg/L	0.10	0.050	1		12/24/20 01:42	16984-48-8	
Sulfate	179	mg/L	4.0	2.0	4		12/24/20 12:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Sample: EB		Lab ID: 92512951003		Collected: 12/17/20 09:50		Received: 12/18/20 15:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	12/28/20 09:00	12/28/20 22:30	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	12/30/20 09:56	12/30/20 20:26	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	12/30/20 09:56	12/30/20 20:26	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	12/30/20 09:56	12/30/20 20:26	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	12/30/20 09:56	12/31/20 17:51	7440-41-7		
Boron	0.010J	mg/L	0.10	0.0052	1	12/30/20 09:56	12/30/20 20:26	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	12/30/20 09:56	12/30/20 20:26	7440-43-9		
Chromium	0.00058J	mg/L	0.010	0.00055	1	12/30/20 09:56	12/30/20 20:26	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	12/30/20 09:56	12/30/20 20:26	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	12/30/20 09:56	12/30/20 20:26	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	12/30/20 09:56	12/30/20 20:26	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	12/30/20 09:56	12/30/20 20:26	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	12/30/20 09:56	12/30/20 20:26	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	12/30/20 09:56	12/30/20 20:26	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:38	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		12/22/20 17:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		12/24/20 01:57	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		12/24/20 01:57	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		12/24/20 01:57	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

QC Batch: 589491 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92512951001, 92512951002, 92512951003

METHOD BLANK: 3113717 Matrix: Water
Associated Lab Samples: 92512951001, 92512951002, 92512951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	12/28/20 21:38	

LABORATORY CONTROL SAMPLE: 3113718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3113719 3113720

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92512951001	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Calcium	mg/L	71.5	1	1	75.6	73.7	406	223	75-125	2	20	M1	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

QC Batch: 589986 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92512951001, 92512951002, 92512951003

METHOD BLANK: 3115564 Matrix: Water
Associated Lab Samples: 92512951001, 92512951002, 92512951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	12/30/20 19:40	
Arsenic	mg/L	ND	0.0050	0.00078	12/30/20 19:40	
Barium	mg/L	ND	0.010	0.00071	12/30/20 19:40	
Beryllium	mg/L	ND	0.0030	0.000046	12/31/20 16:06	
Boron	mg/L	ND	0.10	0.0052	12/30/20 19:40	
Cadmium	mg/L	ND	0.0025	0.00012	12/30/20 19:40	
Chromium	mg/L	ND	0.010	0.00055	12/30/20 19:40	
Cobalt	mg/L	ND	0.0050	0.00038	12/30/20 19:40	
Lead	mg/L	ND	0.0050	0.000036	12/30/20 19:40	
Lithium	mg/L	ND	0.030	0.00081	12/30/20 19:40	
Molybdenum	mg/L	ND	0.010	0.00069	12/30/20 19:40	
Selenium	mg/L	ND	0.010	0.0016	12/30/20 19:40	
Thallium	mg/L	ND	0.0010	0.00014	12/30/20 19:40	

LABORATORY CONTROL SAMPLE: 3115565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.093	93	80-120	
Arsenic	mg/L	0.1	0.089	89	80-120	
Barium	mg/L	0.1	0.086	86	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.91	91	80-120	
Cadmium	mg/L	0.1	0.092	92	80-120	
Chromium	mg/L	0.1	0.092	92	80-120	
Cobalt	mg/L	0.1	0.092	92	80-120	
Lead	mg/L	0.1	0.088	88	80-120	
Lithium	mg/L	0.1	0.086	86	80-120	
Molybdenum	mg/L	0.1	0.095	95	80-120	
Selenium	mg/L	0.1	0.088	88	80-120	
Thallium	mg/L	0.1	0.088	88	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3115566 3115567

Parameter	Units	92512947001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Arsenic	mg/L	0.0017J	0.1	0.1	0.095	0.094	93	92	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92512951

Parameter	Units	3115566		3115567		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92512947001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.0061J	0.1	0.1	0.094	0.091	87	85	75-125	2	20		
Beryllium	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Boron	mg/L	0.28	1	1	1.1	1.1	80	85	75-125	5	20		
Cadmium	mg/L	ND	0.1	0.1	0.091	0.091	91	91	75-125	0	20		
Chromium	mg/L	ND	0.1	0.1	0.090	0.090	90	90	75-125	0	20		
Cobalt	mg/L	0.0016J	0.1	0.1	0.091	0.091	90	89	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.089	0.086	89	86	75-125	3	20		
Lithium	mg/L	0.011J	0.1	0.1	0.094	0.093	82	82	75-125	0	20		
Molybdenum	mg/L	0.076	0.1	0.1	0.17	0.17	96	91	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.091	0.089	91	89	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.089	0.087	89	87	75-125	3	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92512951

QC Batch: 588542	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92512951001, 92512951002, 92512951003

METHOD BLANK: 3109729 Matrix: Water

Associated Lab Samples: 92512951001, 92512951002, 92512951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	12/22/20 12:50	

LABORATORY CONTROL SAMPLE: 3109730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3109731 3109732

Parameter	Units	92512574004		3109731		3109732		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Mercury	mg/L	ND	0.0025	0.0025	0.0022	0.0023	89	90	75-125	1	20

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92512951

QC Batch: 588927

Analysis Method: SM 2450C-2011

QC Batch Method: SM 2450C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92512951001, 92512951002, 92512951003

METHOD BLANK: 3111378

Matrix: Water

Associated Lab Samples: 92512951001, 92512951002, 92512951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	12/22/20 17:31	

LABORATORY CONTROL SAMPLE: 3111379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	386	96	84-108	

SAMPLE DUPLICATE: 3111380

Parameter	Units	92512580004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	294	295	0	10	

SAMPLE DUPLICATE: 3111381

Parameter	Units	92513185001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	339	340	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

QC Batch: 589104 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92512951001

METHOD BLANK: 3112052 Matrix: Water
Associated Lab Samples: 92512951001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/23/20 16:31	
Fluoride	mg/L	ND	0.10	0.050	12/23/20 16:31	
Sulfate	mg/L	ND	1.0	0.50	12/23/20 16:31	

LABORATORY CONTROL SAMPLE: 3112053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	52.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112054 3112055

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92513456002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	409	50	50	471	456	125	94	90-110	3	10	M6	
Fluoride	mg/L	0.14	2.5	2.5	2.1	2.1	77	79	90-110	2	10	M1	
Sulfate	mg/L	403	50	50	466	450	126	93	90-110	4	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112056 3112057

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92512580004	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.4	50	50	57.4	57.5	108	108	90-110	0	10		
Fluoride	mg/L	0.18	2.5	2.5	2.7	2.7	102	102	90-110	0	10		
Sulfate	mg/L	11.3	50	50	65.5	65.6	108	109	90-110	0	10		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92512951

QC Batch: 589110	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92512951002, 92512951003

METHOD BLANK: 3112064 Matrix: Water

Associated Lab Samples: 92512951002, 92512951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/23/20 23:58	
Fluoride	mg/L	ND	0.10	0.050	12/23/20 23:58	
Sulfate	mg/L	ND	1.0	0.50	12/23/20 23:58	

LABORATORY CONTROL SAMPLE: 3112065

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.4	105	90-110	
Fluoride	mg/L	2.5	2.6	102	90-110	
Sulfate	mg/L	50	52.8	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112066 3112067

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92513456001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	449	50	50	492	491	86	84	90-110	0	10	M6	
Fluoride	mg/L	0.17	2.5	2.5	2.0	1.9	74	71	90-110	4	10	M1	
Sulfate	mg/L	125	50	50	173	173	95	95	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112068 3112069

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511640003 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	5.0	50	50	59.6	59.5	109	109	90-110	0	10		
Fluoride	mg/L	0.19	2.5	2.5	2.9	2.9	108	107	90-110	1	10		
Sulfate	mg/L	106	50	50	158	159	104	106	90-110	1	10		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH AP-234

Pace Project No.: 92512951

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-234
Pace Project No.: 92512951

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92512951001	B-102D				
92512951002	B-106D				
92512951001	B-102D	EPA 3010A	589491	EPA 6010D	589516
92512951002	B-106D	EPA 3010A	589491	EPA 6010D	589516
92512951003	EB	EPA 3010A	589491	EPA 6010D	589516
92512951001	B-102D	EPA 3005A	589986	EPA 6020B	590063
92512951002	B-106D	EPA 3005A	589986	EPA 6020B	590063
92512951003	EB	EPA 3005A	589986	EPA 6020B	590063
92512951001	B-102D	EPA 7470A	588542	EPA 7470A	588758
92512951002	B-106D	EPA 7470A	588542	EPA 7470A	588758
92512951003	EB	EPA 7470A	588542	EPA 7470A	588758
92512951001	B-102D	SM 2450C-2011	588927		
92512951002	B-106D	SM 2450C-2011	588927		
92512951003	EB	SM 2450C-2011	588927		
92512951001	B-102D	EPA 300.0 Rev 2.1 1993	589104		
92512951002	B-106D	EPA 300.0 Rev 2.1 1993	589110		
92512951003	EB	EPA 300.0 Rev 2.1 1993	589110		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Knoxville

Sample Condition Upon Receipt

Client Name:

G. A. Power

Project #:

WO# : 92512951



Courier: Commercial Fed Ex Pace UPS USPS Other: Client

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *12/18/20* *LOH*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Thermometer: HK Gun ID: *233* Type of Ice: Wet Blue None

Yes No N/A

Cooler Temp: *3.7* Correction Factor: Add/Subtract (°C) *0.4*

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *4.1*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <i>W</i>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92512951

PH: KLH1

Due Date: 01/05/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 [pH < 2] (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Peachtree Corners, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Prepared For:

**Georgia Power
2480 Maner Road
Atlanta, GA 30339**

Attention: Mr. Joju Abraham

Report Number: AAG0117

July 17, 2017

Project: Plant McDonough

Project #:1779172

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink that reads "Betsy McDonough" written over a horizontal line.

Project Manager

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Georgia Power
2480 Maner Road
Atlanta GA, 30339
Attention: Mr. Joju Abraham

July 17, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-68	AAG0117-01	Ground Water	07/06/17 13:35	07/07/17 09:35
B-69	AAG0117-02	Ground Water	07/06/17 15:15	07/07/17 09:35
B-70A	AAG0117-03	Ground Water	07/06/17 09:55	07/07/17 09:35



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339
 Attention: Mr. Joju Abraham

July 17, 2017

Report No.: AAG0117

Project: Plant McDonough

Client ID: B-68

Lab Number ID: AAG0117-01

Date/Time Sampled: 7/6/2017 1:35:00PM

Date/Time Received: 7/7/2017 9:35:00AM

Matrix: Ground Water

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
Biochemical Oxygen Demand	ND	2.0	mg/L	SM 5210 B		1	7/07/17 13:45	7/12/17 9:00	7070128	RNB
Chemical Oxygen Demand	147	10	mg/L	EPA 410.4		1	7/10/17 11:00	7/10/17 15:00	7070194	ALS
Dissolved Organic Carbon	ND	1.0	mg/L	EPA 9060A		1	7/10/17 15:15	7/11/17 8:03	7070192	djs
Ferrous Iron	ND	0.20	mg/L	SM 3500-Fe B	H-01	1	7/11/17 11:20	7/11/17 11:20	7070215	DJS
Total Sulfide	ND	0.2	mg/L	SM 4500-S D		1	7/11/17 14:00	7/11/17 14:00	7070216	DJS
Total Organic Carbon	2.1	1.0	mg/L	EPA 9060A		1	7/10/17 15:15	7/10/17 21:36	7070189	djs
Inorganic Anions										
Sulfate	37	5.0	mg/L	EPA 9056A		1	7/07/17 10:15	7/07/17 15:24	7070130	SLH
Metals, Total										
Iron	4.87	0.0400	mg/L	EPA 6010D		1	7/11/17 14:15	7/12/17 12:04	7070219	FBS
Metals										
Ferric Iron	4.87	0.200	mg/L	Calc.		1	7/11/17 14:15	7/12/17 12:04	[CALC]	FBS



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 Atlanta GA, 30339
 Attention: Mr. Joju Abraham

July 17, 2017

Report No.: AAG0117

Project: Plant McDonough

Client ID: B-69

Lab Number ID: AAG0117-02

Date/Time Sampled: 7/6/2017 3:15:00PM

Date/Time Received: 7/7/2017 9:35:00AM

Matrix: Ground Water

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
Biochemical Oxygen Demand	ND	2.0	mg/L	SM 5210 B		1	7/07/17 13:45	7/12/17 9:00	7070128	RNB
Chemical Oxygen Demand	103	10	mg/L	EPA 410.4		1	7/10/17 11:00	7/10/17 15:00	7070194	ALS
Dissolved Organic Carbon	ND	1.0	mg/L	EPA 9060A		1	7/10/17 15:15	7/11/17 8:37	7070192	djs
Ferrous Iron	ND	0.20	mg/L	SM 3500-Fe B	H-01	1	7/11/17 11:20	7/11/17 11:20	7070215	DJS
Total Sulfide	ND	0.2	mg/L	SM 4500-S D		1	7/11/17 14:00	7/11/17 14:00	7070216	DJS
Total Organic Carbon	ND	1.0	mg/L	EPA 9060A		1	7/10/17 15:15	7/10/17 21:53	7070189	djs
Inorganic Anions										
Sulfate	17	5.0	mg/L	EPA 9056A		1	7/07/17 10:15	7/07/17 17:08	7070130	SLH
Metals, Total										
Iron	0.630	0.0400	mg/L	EPA 6010D		1	7/11/17 14:15	7/12/17 12:11	7070219	FBS
Metals										
Ferric Iron	0.630	0.200	mg/L	Calc.		1	7/11/17 14:15	7/12/17 12:11	[CALC]	FBS



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July 17, 2017

Report No.: AAG0117

Project: Plant McDonough

Client ID: B-70A

Lab Number ID: AAG0117-03

Date/Time Sampled: 7/6/2017 9:55:00AM

Date/Time Received: 7/7/2017 9:35:00AM

Matrix: Ground Water

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
Biochemical Oxygen Demand	ND	2.0	mg/L	SM 5210 B		1	7/07/17 13:45	7/12/17 9:00	7070128	RNB
Chemical Oxygen Demand	66	10	mg/L	EPA 410.4		1	7/10/17 11:00	7/10/17 15:00	7070194	ALS
Dissolved Organic Carbon	1.5	1.0	mg/L	EPA 9060A		1	7/10/17 15:15	7/11/17 9:11	7070192	djs
Ferrous Iron	ND	0.20	mg/L	SM 3500-Fe B	H-01	1	7/11/17 11:20	7/11/17 11:20	7070215	DJS
Total Sulfide	ND	0.2	mg/L	SM 4500-S D		1	7/11/17 14:00	7/11/17 14:00	7070216	DJS
Total Organic Carbon	3.6	1.0	mg/L	EPA 9060A		1	7/10/17 15:15	7/10/17 22:09	7070189	djs
Inorganic Anions										
Sulfate	ND	5.0	mg/L	EPA 9056A	J	1	7/07/17 10:15	7/07/17 17:28	7070130	SLH
Metals, Total										
Iron	0.141	0.0400	mg/L	EPA 6010D		1	7/11/17 14:15	7/12/17 12:15	7070219	FBS
Metals										
Ferric Iron	ND	0.200	mg/L	Calc.		1	7/11/17 14:15	7/12/17 12:15	[CALC]	FBS



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July 17, 2017

Report No.: AAG0117

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7070128 - SM 5210 B										
Blank (7070128-BLK1) Prepared: 07/07/17 Analyzed: 07/12/17										
Biochemical Oxygen Demand	ND	2.0	mg/L							
LCS (7070128-BS1) Prepared: 07/07/17 Analyzed: 07/12/17										
Biochemical Oxygen Demand	216	2.0	mg/L	198.00		109	85-115			
Duplicate (7070128-DUP1) Source: AAG0109-01 Prepared: 07/07/17 Analyzed: 07/12/17										
Biochemical Oxygen Demand	97.0	9.0	mg/L		95.0			2	20	
Batch 7070189 - EPA 9060A										
Blank (7070189-BLK1) Prepared & Analyzed: 07/10/17										
Total Organic Carbon	ND	1.0	mg/L							
LCS (7070189-BS1) Prepared & Analyzed: 07/10/17										
Total Organic Carbon	20.1	1.0	mg/L	20.000		100	88-112			
Matrix Spike (7070189-MS1) Source: AAF1111-12 Prepared & Analyzed: 07/10/17										
Total Organic Carbon	25.8	1.0	mg/L	20.000	5.6	101	67-141			
Matrix Spike Dup (7070189-MSD1) Source: AAF1111-12 Prepared & Analyzed: 07/10/17										
Total Organic Carbon	25.7	1.0	mg/L	20.000	5.6	101	67-141	0.04	16	
Batch 7070192 - EPA 9060A										
Blank (7070192-BLK1) Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	ND	1.0	mg/L							



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July 17, 2017

Report No.: AAG0117

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7070192 - EPA 9060A										
LCS (7070192-BS1) Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	19.4	1.0	mg/L	20.000		97	88-112			
Duplicate (7070192-DUP1) Source: AAG0031-02 Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	1.8	1.0	mg/L		1.8			2	14	
Duplicate (7070192-DUP2) Source: AAG0032-01 Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	1.7	1.0	mg/L		1.6			10	14	
Duplicate (7070192-DUP3) Source: AAG0117-01 Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	ND	1.0	mg/L		ND				14	
Duplicate (7070192-DUP4) Source: AAG0117-02 Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	ND	1.0	mg/L		ND				14	
Duplicate (7070192-DUP5) Source: AAG0117-03 Prepared: 07/10/17 Analyzed: 07/11/17										
Dissolved Organic Carbon	1.2	1.0	mg/L		1.5			17	14	QR-03
Batch 7070194 - EPA 410.4										
Blank (7070194-BLK1) Prepared & Analyzed: 07/10/17										
Chemical Oxygen Demand	ND	10	mg/L							
LCS (7070194-BS1) Prepared & Analyzed: 07/10/17										
Chemical Oxygen Demand	216	10	mg/L	200.00		108	90-110			
Duplicate (7070194-DUP1) Source: AAF0580-01RE1 Prepared & Analyzed: 07/10/17										
Chemical Oxygen Demand	67	10	mg/L		74			11	10	QR-03



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July 17, 2017

Report No.: AAG0117

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7070194 - EPA 410.4										
Matrix Spike (7070194-MS1)		Source: AAG0094-01			Prepared & Analyzed: 07/10/17					
Chemical Oxygen Demand	266	10	mg/L	200.00	193	36	90-110			QM-05
Matrix Spike (7070194-MS2)		Source: AAG0117-01			Prepared & Analyzed: 07/10/17					
Chemical Oxygen Demand	358	10	mg/L	200.00	147	105	90-110			
Matrix Spike Dup (7070194-MSD1)		Source: AAG0094-01			Prepared & Analyzed: 07/10/17					
Chemical Oxygen Demand	254	10	mg/L	200.00	193	30	90-110	5	10	QM-05
Batch 7070215 - SM 3500-Fe B										
Blank (7070215-BLK1)					Prepared & Analyzed: 07/11/17					
Ferrous Iron	ND	0.20	mg/L							
LCS (7070215-BS1)					Prepared & Analyzed: 07/11/17					
Ferrous Iron	0.42	0.20	mg/L	0.40000		106	80-120			
Matrix Spike (7070215-MS1)		Source: AAG0117-01			Prepared & Analyzed: 07/11/17					
Ferrous Iron	0.52	0.20	mg/L	0.40000	ND	130	80-120			QM-05
Matrix Spike Dup (7070215-MSD1)		Source: AAG0117-01			Prepared & Analyzed: 07/11/17					
Ferrous Iron	0.50	0.20	mg/L	0.40000	ND	126	80-120	4	10	QM-05
Batch 7070216 - SM 4500-S D										
Blank (7070216-BLK1)					Prepared & Analyzed: 07/11/17					
Total Sulfide	ND	0.2	mg/L							



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339
 Attention: Mr. Joju Abraham

July 17, 2017

Report No.: AAG0117

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7070216 - SM 4500-S D										
LCS (7070216-BS1)										
Total Sulfide	0.519	0.2	mg/L	0.50100		104	80-120			
Prepared & Analyzed: 07/11/17										
Matrix Spike (7070216-MS1)										
Total Sulfide	0.665	0.2	mg/L	0.50100	ND	133	30-129			QM-05
Source: AAG0112-01 Prepared & Analyzed: 07/11/17										
Matrix Spike Dup (7070216-MSD1)										
Total Sulfide	0.688	0.2	mg/L	0.50100	ND	137	30-129	3.40	10	QM-05
Source: AAG0112-01 Prepared & Analyzed: 07/11/17										



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July 17, 2017

Report No.: AAG0117

Inorganic Anions - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7070130 - EPA 300.0										
Blank (7070130-BLK1) Prepared & Analyzed: 07/07/17										
Sulfate	ND	5.0	mg/L							
LCS (7070130-BS1) Prepared & Analyzed: 07/07/17										
Sulfate	10.1	5.0	mg/L	10.050		100	90-110			
Matrix Spike (7070130-MS1) Source: AAG0109-03 Prepared & Analyzed: 07/07/17										
Sulfate	38.1	5.0	mg/L	10.050	31.0	71	90-110			QM-05
Matrix Spike (7070130-MS2) Source: AAG0117-03 Prepared & Analyzed: 07/07/17										
Sulfate	12.5	5.0	mg/L	10.050	2.35	101	90-110			
Matrix Spike Dup (7070130-MSD1) Source: AAG0109-03 Prepared & Analyzed: 07/07/17										
Sulfate	38.2	5.0	mg/L	10.050	31.0	71	90-110	0.2	15	QM-05



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July 17, 2017

Report No.: AAG0117

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7070219 - EPA 3010A										
Blank (7070219-BLK1)										
Prepared: 07/11/17 Analyzed: 07/12/17										
Iron	ND	0.0400	mg/L							
LCS (7070219-BS1)										
Prepared: 07/11/17 Analyzed: 07/12/17										
Iron	1.02	0.0400	mg/L	1.0000		102	80-120			
Matrix Spike (7070219-MS1)										
Source: AAG0117-01 Prepared: 07/11/17 Analyzed: 07/12/17										
Iron	6.09	0.0400	mg/L	1.0000	4.87	122	75-125			
Matrix Spike Dup (7070219-MSD1)										
Source: AAG0117-01 Prepared: 07/11/17 Analyzed: 07/12/17										
Iron	5.84	0.0400	mg/L	1.0000	4.87	97	75-125	4	20	
Post Spike (7070219-PS1)										
Source: AAG0117-01 Prepared: 07/11/17 Analyzed: 07/12/17										
Iron	6.04		mg/L	1.0000	4.87	117	80-120			



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July 17, 2017

Laboratory Certifications

Code	Description	Number	Expires
GADW	Georgia DW Inorganics Eff: 07/01/2016	812	08/30/2017
GADWM	Georgia DW Microbiology Eff: 07/01/2015	812	12/09/2019
NC	North Carolina	381	12/31/2017
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2016	E87315	06/30/2018
NELDW	FL DOH NELAC (Drinking Water) Eff: 07/01/2016	E87315	06/30/2018
SC	South Carolina	98011001	08/30/2017
TX	Texas	T104704397-08-TX	03/31/2018
VA	Virginia	460204	12/14/2017



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July 17, 2017

Legend

Definition of Laboratory Terms

- ND** - None Detected at the Reporting Limit
- TIC** - Tentatively Identified Compound
- CFU** - Colony Forming Units
- SOP** - Method run per Pace Standard Operating Procedure
- RL** - Reporting Limit
- DF** - Dilution Factor
- * - Analyte not included in the NELAC list of certified analytes.

Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for diphenylamine.
Phthalic acid and phthalic anhydride are reported as dimethyl phthalate
Maleic acid and maleic anhydride are reported as dimethyl malate
1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene
Drinking Water Records will be available for at least 5 years and are subject to disposal after the 5 years have elapsed.

Definition of Qualifiers

- QR-03** The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to suspected matrix interference and/or non-homogeneous sample matrix.
- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).
- H-01** Sample was received outside of the EPA recommended holding time or was received with insufficient time to run sample within the EPA recommended holding time.

Note: Unless otherwise noted, all results are reported on an as received basis.



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Atlanta GA, 30339
Attention: Mr. Joju Abraham

July 17, 2017

Report Notes

The Ferrous Irons were received out of hold. MMR

CHAIN OF CUSTODY RECORD



Pace Analytical Services, LLC - Atlanta GA
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
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PAGE: 1 OF 1

CLIENT NAME:		ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE	PRESERVATION				
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	P	P	V	V	P	P										
Georgia Power Company		PRESERVATION:	2	5	7	2	7	3										
241 Ralph McGill Blvd Atlanta, GA 30308		# of																
REPORT TO:	CC:	CONTAINERS	BOD/sulfate	COD	Sulfide	DOC	TOC	Ferrous Iron	Metals (Fe)									
Joju Abraham	rkirkman@golden.com																	
REQUESTED COMPLETION DATE:	PO #:																	
Standard	1779172																	
PROJECT NAME/STATE:																		
Plant McDonough Investigation																		
PROJECT #:																		
1779172																		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION													
7/6/17	1335	GW	X		B-68	9	1	1	1	2	2	1	1					
7/6/17	1515	GW	X		B-69	9	1	1	1	2	2	1	1					
7/6/17	0955	GW	X		B-70A	9	1	1	1	2	2	1	1					
SAMPLED BY AND TITLE:		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	FOR LAB USE ONLY												
[Signature]		7/6/17 1600	[Signature]		7/6/17 0935	LAB #:		AAG0117										
RECEIVED BY:		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	Entered into LIMS:		MR										
[Signature]		7/6/17 0935	[Signature]			Tracking #:												
RECEIVED BY LAB:		DATE/TIME:	SAMPLE SHIPPED VIA:															
[Signature]		7/6/17 0935	UPS FED-EX USPS COURIER CLIENT OTHER FS															
Checked: []		Temperature:	Custody Seal:															
[]		30.6 Min 3.6 Max	Intact Broken Not Present N/A															

REMARKS/ADDITIONAL INFORMATION
 1 All results are subject
 2 to Attorney Client
 3 privilege



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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LOG-IN CHECKLIST

Printed: 7/7/2017 2:54:53PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: Plant McDonough

Date Received: 07/07/17 09:35

Work Order: AAG0117

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 3

#Containers: 27

Minimum Temp(C): 3.6

Maximum Temp(C): 3.6

Custody Seal(s) Used: N/A

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	N/A
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	NO
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

The Ferrous Irons were received out of hold. MMR



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Prepared For:

**Golder Associates - Atlanta
3730 Chamblee Tucker Road
Atlanta, GA 30341**

Attention: Mr. Tim Richards

Report Number: AAK0414

November 21, 2017

Project: Plant McDonough

Project #:1777449

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink that reads "Betsy McDonough" written over a horizontal line.

Project Manager

This report may not be reproduced, except in full, without written approval from Pace Analytical Services, LLC. Pace Analytical Services, LLC. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference (NELAC). All test results relate only to the samples analyzed.



PACE ANALYTICAL SERVICES, LLC.

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Golder Associates - Atlanta
3730 Chamblee Tucker Road
Atlanta GA, 30341
Attention: Mr. Tim Richards

November 21, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AP-1_Composite Profile	AAK0414-01	Soil	11/13/17 10:55	11/13/17 14:05



PACE ANALYTICAL SERVICES, LLC.

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November 21, 2017

Case Narrative

The Total Organic Carbon analysis by method EPA 9060 was performed by Pace-Green Bay, 1241 Bellevue Street, Suite 9, Green Bay WI 54302. The Pace-Green Bay lab contact is Cindy Varga at 715-223-5638. Please see the attached subcontractor report.



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November 21, 2017

Report No.: AAK0414

Project: Plant McDonough

Client ID: AP-1_Composite Profile

Lab Number ID: AAK0414-01

Date/Time Sampled: 11/13/2017 10:55:00AM

Date/Time Received: 11/13/2017 2:05:00PM

Matrix: Soil

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
pH	6.69		pH Units	EPA 9045D		1	11/13/17 16:15	11/13/17 16:15	7110346	JAD
% Solids	71.7	0.04	% by Weight	SOP		1	11/16/17 10:40	11/16/17 10:40	7110462	JPT
Sulfide	ND	3.5	mg/kg dry	Moisture EPA 9030B/9034		1	11/14/17 13:00	11/14/17 17:15	7110374	DJS
Inorganic Anions										
Sulfate, Extractable	ND	68	mg/kg dry	EPA 9056A		1	11/15/17 10:27	11/15/17 15:15	7110409	RLC
Metals, Total										
Calcium	1920	34.3	mg/kg dry	EPA 6010D		1	11/15/17 16:10	11/16/17 12:51	7110395	FBS



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November 21, 2017

Report No.: AAK0414

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7110346 - EPA 9045D										
Duplicate (7110346-DUP1)		Source: AAK0414-01			Prepared & Analyzed: 11/13/17					
pH	6.70		pH Units		6.69			0.1	5	
Batch 7110374 - EPA 9030										
Blank (7110374-BLK1)					Prepared & Analyzed: 11/14/17					
Sulfide	ND	2.5	mg/kg wet							
LCS (7110374-BS1)					Prepared & Analyzed: 11/14/17					
Sulfide	98.8	2.5	mg/kg wet	103.60		95	40-104			
Matrix Spike (7110374-MS1)		Source: AAK0309-01			Prepared & Analyzed: 11/14/17					
Sulfide	57.1	2.7	mg/kg dry	112.39	ND	51	10-143			
Batch 7110462 - % Solids										
Duplicate (7110462-DUP1)		Source: AAK0414-01			Prepared & Analyzed: 11/16/17					
% Solids	71.5	0.04	% by Weight		71.7			0.3	10	
Duplicate (7110462-DUP2)		Source: AAK0513-01			Prepared & Analyzed: 11/16/17					
% Solids	82.7	0.04	% by Weight		79.1			4	10	



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November 21, 2017

Report No.: AAK0414

Inorganic Anions - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7110409 - EPA 9056A										
Blank (7110409-BLK1)										
Prepared & Analyzed: 11/15/17										
Sulfate, Extractable	ND	50	mg/kg wet							
LCS (7110409-BS1)										
Prepared & Analyzed: 11/15/17										
Sulfate, Extractable	102	49	mg/kg wet	97.351		105	90-110			
Matrix Spike (7110409-MS1)										
Source: AAK0219-05										
Prepared & Analyzed: 11/15/17										
Sulfate, Extractable	8600	350	mg/kg dry	700.29	7810	112	90-110			QM-05
Matrix Spike Dup (7110409-MSD1)										
Source: AAK0219-05										
Prepared & Analyzed: 11/15/17										
Sulfate, Extractable	8170	350	mg/kg dry	699.98	7810	51	90-110	5	15	QM-05



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November 21, 2017

Report No.: AAK0414

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 7110395 - EPA 3050B										
Blank (7110395-BLK1)					Prepared: 11/15/17 Analyzed: 11/16/17					
Calcium	ND	25.0	mg/kg wet							
LCS (7110395-BS1)					Prepared: 11/15/17 Analyzed: 11/16/17					
Calcium	26.6	25.0	mg/kg wet	25.000		107	80-120			
Duplicate (7110395-DUP1)					Source: AAK0486-02 Prepared: 11/15/17 Analyzed: 11/16/17					
Calcium	5090	28.0	mg/kg dry		644			155	20	QR-03
Matrix Spike (7110395-MS1)					Source: AAK0345-07 Prepared: 11/15/17 Analyzed: 11/16/17					
Calcium	310	28.2	mg/kg dry	28.165	361	0	75-125			QR-01
Matrix Spike Dup (7110395-MSD1)					Source: AAK0345-07 Prepared: 11/15/17 Analyzed: 11/16/17					
Calcium	337	27.8	mg/kg dry	27.751	361	0	75-125	8	20	QR-01
Post Spike (7110395-PS1)					Source: AAK0345-07 Prepared: 11/15/17 Analyzed: 11/16/17					
Calcium	13.1		mg/L	1.0000	12.9	26	80-120			QR-01



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November 21, 2017

Laboratory Certifications

Code	Description	Number	Expires
GADW	Georgia DW Inorganics Eff: 07/01/2016	812	06/30/2018
GADWM	Georgia DW Microbiology Eff: 07/01/2015	812	12/09/2019
NC	North Carolina	381	12/31/2017
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2016	E87315	06/30/2018
NELDW	FL DOH NELAC (Drinking Water) Eff: 07/01/2016	E87315	06/30/2018
SC	South Carolina	98011001	11/30/2017
TX	Texas	T104704397-08-TX	03/31/2018
VA	Virginia	460204	12/14/2017



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November 21, 2017

Legend

Definition of Laboratory Terms

- ND** - None Detected at the Reporting Limit
- TIC** - Tentatively Identified Compound
- CFU** - Colony Forming Units
- SOP** - Method run per Pace Standard Operating Procedure
- RL** - Reporting Limit
- DF** - Dilution Factor
- * - Analyte not included in the NELAC list of certified analytes.

Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for diphenylamine.
Phthalic acid and phthalic anhydride are reported as dimethyl phthalate
Maleic acid and maleic anhydride are reported as dimethyl malate
1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene
Drinking Water Records will be available for at least 5 years and are subject to disposal after the 5 years have elapsed.

Definition of Qualifiers

- QR-03** The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to suspected matrix interference and/or non-homogeneous sample matrix.
- QR-01** RPD was outside acceptance limits due to sample concentrations near or below the reporting limit.
- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.

Note: Unless otherwise noted, all results are reported on an as received basis.

CHAIN OF CUSTODY RECORD



Pace Analytical Services, LLC - Atlanta GA
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:											D W W G S T W	P S L S D A L P	MATRIX CODES:			
REPORT TO:					PRESERVATION:													DW - DRINKING WATER		S - SOIL	
REQUESTED COMPLETION DATE:					# of													WW - WASTEWATER		SL - SLUDGE	
Golden Associates																	1 - HCl, ≤6°C		2 - H ₂ SO ₄ , ≤6°C		
3730 Chamblee-Tucker Rd Atlanta GA 30341																	3 - HNO ₃		4 - NaOH, ≤6°C		
Tim Richards timothy_richards@golden.com																	5 - NaOH/ZnAc, ≤6°C		6 - Na ₂ S ₂ O ₃ , ≤6°C		
1777449																	7 - ≤6°C not frozen				
Plant McDonough GA																					
PROJECT # 1777449																					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION					CONTAINERS					↓	REMARKS/ADDITIONAL INFORMATION					
11/13/17	1055	S	X		AP-1 - Composite Profile					ToC / EP4 9060 Metals (Ca only) EPA 6010 Pb, Sulfate, Solids, % Solids							3 Jars of 1 blended Sample				

SAMPLED BY AND TITLE: Chris Gargan		DATE/TIME: 11/13/17 1055		RELINQUISHED BY: <i>[Signature]</i>		DATE/TIME: 1405 11/13/17		FOR LAB USE ONLY	
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		LAB #: AAK 0414 CMA	
RECEIVED BY LAB: <i>[Signature]</i>		DATE/TIME: 11/13/17 1405		SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		DATE/TIME:		Entered into LIMS:	
Temperature: Min: 5.0°C Max:		Custody Seal: Intact Broken Not Present N/A		# of Coolers		Cooler ID:		Tracking #:	

Page 10 of 12

Sample Condition Upon Receipt



Client Name: Golder Assoc.

Project # AAK 0419

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THR082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 5.0°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 11/3/17 C24

		Comments:
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>PH</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>SD</u>	
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

November 22, 2017

Betsy McDaniel
Pace Analytical Atlanta
110 Technology Parkway
Peachtree Corners, GA 30092

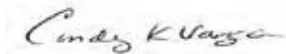
RE: Project: AAK0414 PLANT MCDONOUGH
Pace Project No.: 40160761

Dear Betsy McDaniel:

Enclosed are the analytical results for sample(s) received by the laboratory on November 14, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Cindy Varga
cindy.varga@pacelabs.com
(920)469-2436
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40160761001	AP-1 COMPOSITE PROFILE	Solid	11/13/17 10:55	11/14/17 09:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40160761001	AP-1 COMPOSITE PROFILE	ASTM D2974-87	KTS	1
		EPA 9060	TJJ	6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

Sample: AP-1 COMPOSITE **Lab ID: 40160761001** Collected: 11/13/17 10:55 Received: 11/14/17 09:45 Matrix: Solid
PROFILE

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	28.9	%	0.10	1		11/21/17 10:38		
Total Organic Carbon Quad		Analytical Method: EPA 9060						
Total Organic Carbon	41100	mg/kg	15000	1		11/16/17 16:19	7440-44-0	
Total Organic Carbon	45600	mg/kg	14500	1		11/16/17 16:37	7440-44-0	
Total Organic Carbon	48700	mg/kg	14000	1		11/16/17 16:43	7440-44-0	
Total Organic Carbon	49100	mg/kg	14100	1		11/16/17 16:56	7440-44-0	
Mean Total Organic Carbon	46100	mg/kg	14400	1		11/16/17 16:19	7440-44-0	
Surrogates								
RSD%	8.0	%		1		11/16/17 16:19		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

QC Batch: 274974

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 40160761001

SAMPLE DUPLICATE: 1617682

Parameter	Units	40161094010 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.8	14.9	1	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AAK0414 PLANT MCDONOUGH
Pace Project No.: 40160761

QC Batch: 274252 Analysis Method: EPA 9060
QC Batch Method: EPA 9060 Analysis Description: 9060 TOC Average
Associated Lab Samples: 40160761001

METHOD BLANK: 1613744 Matrix: Solid
Associated Lab Samples: 40160761001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	<194	647	11/16/17 11:45	

LABORATORY CONTROL SAMPLE: 1613745

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	120000	119000	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1613746 1613747

Parameter	Units	35345339001		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result				
Mean Total Organic Carbon	mg/kg	7190	27000	27100	30200	32300	85	93	50-150	7	30

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AAK0414 PLANT MCDONOUGH

Pace Project No.: 40160761

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40160761001	AP-1 COMPOSITE PROFILE	ASTM D2974-87	274974		
40160761001	AP-1 COMPOSITE PROFILE	EPA 9060	274252		
40160761001	AP-1 COMPOSITE PROFILE	EPA 9060	274253		

REPORT OF LABORATORY ANALYSIS

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Regulated Domestic and Foreign Soils Checklist

Project #: 40160761 Time: 0945
 Initials: SKW Date: 11-14-17

Origin (Circle One): Domestic Foreign

If "Domestic", State of Origin (Circle One): AL AR AZ CA FL GA ID LA MS NC NM NY OK OR SC TN TX

If "Foreign", Country of Origin: _____

Note: Soils from Hawaii and Puerto Rico are of Foreign Origin

Sample analysis will take place at (Circle all that apply):

Green Bay Subcontract Laboratory

Name of Subcontract Laboratory: _____

	Action	Completed
1) Did "Regulated" sticker get placed on Samples?	Regulated sticker must be placed onto each sample container.	<u>Yes</u> / No
2) If samples were sent to a subcontract laboratory, do they hold a valid Soil Permit and Compliance Agreement from the USDA? <small>If not being subcontracted please circle NA.</small>	Subcontract Laboratories are required to hold a valid Soil Permit and Compliance Agreement before we can send soil samples to them. Verify validity by contacting USDA/APHIS.	Yes / No / <u>NA</u>
3) Were Samples placed in designate container in Walk-In Cooler?	Regulated samples retained in the Green Bay Laboratory must be stored in designated containers in the Walk-In Cooler.	<u>Yes</u> / No
4) Were there signs of breakage or leakage? <small>If no please complete 5, circle NA for 6 and move to 7. If yes please circle NA for 5, and move to 6.</small>	Check for broken glass or loose soil in the cooler.	Yes / <u>No</u>
5) Were ice and melt water separated from cooler and disposed of properly? (No signs of breakage or leakage)	Foreign and Domestic Sources: Ice and melt water can be disposed of by dumping down the sink.	<u>Yes</u> / No / NA
6) Were ice and melt water separated from cooler and disposed of properly? (Signs of breakage or leakage)	Foreign and Domestic Sources: Ice and melt water must be baked at 140°C then cooled and dumped down the sink. Soils must be disposed of by baking and then placing in appropriate waste barrel.	Yes / No / <u>NA</u>
7) Was the cooler decontaminated?	Soak cooler for 30 minutes with 1:10 bleach solution, drain in sink, let cooler air dry.	<u>Yes</u> / No

Comments: _____

Sample Condition Upon Receipt

40160761

Face Analytical

Client Name: Golder Assoc.

Project # AAK 0419

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THR082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 5.0°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: 11/3/17 C 24

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>PH</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>SD</u>	
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



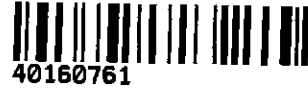
Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Client Name: Pace, GA

Project #:

WO#: 40160761



Courier: [X] Fed Ex [] UPS - Client [] Pace Other: []

Tracking #: 741360598265

Custody Seal on Cooler/Box Present: [] yes [X] no Seals intact: [] yes [] no

Custody Seal on Samples Present: [] yes [X] no Seals intact: [] yes [] no

Packing Material: [] Bubble Wrap [X] Bubble Bags [] None [] Other

Thermometer Used: SR68 Type of Ice: [X] Wet [] Blue Dry [] None [X] Samples on ice, cooling process has begun

Cooler Temperature: Uncorr: 3 ICorr: 3 Biological Tissue is Frozen: [] yes [] no

Temp Blank Present: [X] yes [] no

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 11-14-17
Initials: [Signature]

Comments:

Table with 15 rows of inspection criteria and checkboxes. Includes items like Chain of Custody Present, Short Hold Time Analysis, Rush Turn Around Time Requested, etc.

Client Notification/ Resolution:

If checked, see attached form for additional comments []

Person Contacted: [] Date/Time: []

Comments/ Resolution: Plastic around cap of sample. 11-14-17 [Signature]

Project Manager Review: [Signature]

Date: 11/14/17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-137545-1

Client Project/Site: CCR Plant McDonough

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

5/17/2017 6:14:54 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?



Visit us at:

www.testamericainc.com

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

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

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

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Table of Contents

Cover Page	1
Table of Contents	2
Detection Summary	3
Method Summary	4
Sample Summary	5
Client Sample Results	6
Definitions	7
Chronicle	8
QC Association	9
QC Sample Results	10
Chain of Custody	12
Receipt Checklists	13
Certification Summary	14

Detection Summary

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Client Sample ID: B-68A

Lab Sample ID: 400-137545-1

No Detections.

Client Sample ID: B-73

Lab Sample ID: 400-137545-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0063		0.0013	0.00046	mg/L	5		6020	Total Recoverable

Client Sample ID: B-74

Lab Sample ID: 400-137545-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0033		0.0013	0.00046	mg/L	5		6020	Total Recoverable

Client Sample ID: B-72

Lab Sample ID: 400-137545-4

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN

Protocol References:

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



Sample Summary

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-137545-1	B-68A	Water	05/01/17 14:23	05/05/17 08:23
400-137545-2	B-73	Water	05/02/17 14:09	05/05/17 08:23
400-137545-3	B-74	Water	05/03/17 10:16	05/05/17 08:23
400-137545-4	B-72	Water	05/04/17 09:36	05/05/17 08:23

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Client Sample Results

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Client Sample ID: B-68A
Date Collected: 05/01/17 14:23
Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		05/15/17 16:40	05/16/17 15:57	5

Client Sample ID: B-73
Date Collected: 05/02/17 14:09
Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0063		0.0013	0.00046	mg/L		05/15/17 16:40	05/16/17 16:02	5

Client Sample ID: B-74
Date Collected: 05/03/17 10:16
Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0033		0.0013	0.00046	mg/L		05/15/17 16:40	05/16/17 16:06	5

Client Sample ID: B-72
Date Collected: 05/04/17 09:36
Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		05/15/17 16:40	05/16/17 16:11	5

Definitions/Glossary

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Glossary

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

Lab Chronicle

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Client Sample ID: B-68A

Date Collected: 05/01/17 14:23

Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			353567	05/15/17 16:40	JAP	TAL PEN
Total Recoverable	Analysis	6020		5	353834	05/16/17 15:57	DRE	TAL PEN

Client Sample ID: B-73

Date Collected: 05/02/17 14:09

Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			353567	05/15/17 16:40	JAP	TAL PEN
Total Recoverable	Analysis	6020		5	353834	05/16/17 16:02	DRE	TAL PEN

Client Sample ID: B-74

Date Collected: 05/03/17 10:16

Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			353567	05/15/17 16:40	JAP	TAL PEN
Total Recoverable	Analysis	6020		5	353834	05/16/17 16:06	DRE	TAL PEN

Client Sample ID: B-72

Date Collected: 05/04/17 09:36

Date Received: 05/05/17 08:23

Lab Sample ID: 400-137545-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			353567	05/15/17 16:40	JAP	TAL PEN
Total Recoverable	Analysis	6020		5	353834	05/16/17 16:11	DRE	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

QC Association Summary

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Metals

Prep Batch: 353567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-137545-1	B-68A	Total Recoverable	Water	3005A	
400-137545-2	B-73	Total Recoverable	Water	3005A	
400-137545-3	B-74	Total Recoverable	Water	3005A	
400-137545-4	B-72	Total Recoverable	Water	3005A	
MB 400-353567/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-353567/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-137660-D-7-E MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-137660-D-7-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 353646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-353646/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-353646/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
600-147744-F-1-E MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
600-147744-F-1-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 353834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-137545-1	B-68A	Total Recoverable	Water	6020	353567
400-137545-2	B-73	Total Recoverable	Water	6020	353567
400-137545-3	B-74	Total Recoverable	Water	6020	353567
400-137545-4	B-72	Total Recoverable	Water	6020	353567
MB 400-353567/1-A ^5	Method Blank	Total Recoverable	Water	6020	353567
MB 400-353646/1-A ^5	Method Blank	Total Recoverable	Water	6020	353646
LCS 400-353567/2-A	Lab Control Sample	Total Recoverable	Water	6020	353567
LCS 400-353646/2-A	Lab Control Sample	Total Recoverable	Water	6020	353646
400-137660-D-7-E MS ^5	Matrix Spike	Total Recoverable	Water	6020	353567
400-137660-D-7-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	353567
600-147744-F-1-E MS ^5	Matrix Spike	Total Recoverable	Water	6020	353646
600-147744-F-1-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	353646

QC Sample Results

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-353567/1-A ^5
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353567

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		05/15/17 14:44	05/16/17 14:41	5

Lab Sample ID: LCS 400-353567/2-A
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353567

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0500	0.0530		mg/L		106	80 - 120

Lab Sample ID: 400-137660-D-7-E MS ^5
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 353567

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	<0.00046		0.0500	0.0540		mg/L		108	75 - 125

Lab Sample ID: 400-137660-D-7-F MSD ^5
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 353567

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	<0.00046		0.0500	0.0525		mg/L		105	75 - 125	3	20

Lab Sample ID: MB 400-353646/1-A ^5
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		05/16/17 10:27	05/16/17 17:51	5

Lab Sample ID: LCS 400-353646/2-A
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0500	0.0530		mg/L		106	80 - 120

Lab Sample ID: 600-147744-F-1-E MS ^5
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 353646

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0020		0.0500	0.0559		mg/L		108	75 - 125

Lab Sample ID: 600-147744-F-1-F MSD ^5
Matrix: Water
Analysis Batch: 353834

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 353646

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.0020		0.0500	0.0565		mg/L		109	75 - 125	1	20

TestAmerica Pensacola

QC Sample Results

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

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Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-137545-1

SDG Number:

Login Number: 137545

List Number: 1

Creator: Franklin, Justin H

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.5°C IR-2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR Plant McDonough

TestAmerica Job ID: 400-137545-1

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-17
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-17
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-17
Louisiana (DW)	NELAP Secondary AB	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-17
Massachusetts	State Program	1	M-FL094	06-30-17
Michigan	State Program	5	9912	06-30-17
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-17
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-17
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-16-10	09-30-17
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17 *
West Virginia DEP	State Program	3	136	06-30-17

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

TestAmerica Pensacola



Quantitative X-Ray Diffraction by Rietveld Refinement

Report Prepared for: Golder Associates
Project Number/ LIMS No. 17836-01/MI4519-JAN20
Sample Receipt: January 21, 2020
Sample Analysis: January 22, 2020
Reporting Date: January 23, 2020

Instrument: BRUKER AXS D8 Advance Diffractometer
Test Conditions: Co radiation, 35 kV, 40 mA
Regular Scanning: Step: 0.02°, Step time: 1s, 2θ range: 3-80°
Interpretations: PDF2/PDF4 powder diffraction databases issued by the International Center for Diffraction Data (ICDD). DiffracPlus Eva and Topas software.
Detection Limit: 0.5-2%. Strongly dependent on crystallinity.

Contents:
1) Method Summary
2) Quantitative XRD Results
3) XRD Pattern(s)

Kim Gibbs, H.B.Sc., P.Geo.
Senior Mineralogist

Lain Glossop, H.B.Sc.
Senior Mineralogist

ACCREDITATION: SGS Minerals Services Lakefield is accredited to the requirements of ISO/IEC 17025 for specific tests as listed on our scope of accreditation, including geochemical, mineralogical and trade mineral tests. To view a list of the accredited methods, please visit the following website and search SGS Canada - Minerals Services - Lakefield: <http://palcan.scc.ca/SpecsSearch/GLSearchForm.do>.



Method Summary

The Rietveld Method of Mineral Identification by XRD (ME-LR-MIN-MET-MN-D05) method used by SGS Minerals Services is accredited to the requirements of ISO/IEC 17025.

Mineral Identification and Interpretation:

Mineral identification and interpretation involves matching the diffraction pattern of an unknown material to patterns of single-phase reference materials. The reference patterns are compiled by the Joint Committee on Powder Diffraction Standards - International Center for Diffraction Data (JCPDS-ICDD) database and released on software as Powder Diffraction Files (PDF).

Interpretations do not reflect the presence of non-crystalline and/or amorphous compounds, except when internal standards have been added by request. Mineral proportions may be strongly influenced by crystallinity, crystal structure and preferred orientations. Mineral or compound identification and quantitative analysis results should be accompanied by supporting chemical assay data or other additional tests.

Quantitative Rietveld Analysis:

Quantitative Rietveld Analysis is performed by using Topas 4.2 (Bruker AXS), a graphics based profile analysis program built around a non-linear least squares fitting system, to determine the amount of different phases present in a multicomponent sample. Whole pattern analyses are predicated by the fact that the X-ray diffraction pattern is a total sum of both instrumental and specimen factors. Unlike other peak intensity-based methods, the Rietveld method uses a least squares approach to refine a theoretical line profile until it matches the obtained experimental patterns.

Rietveld refinement is completed with a set of minerals specifically identified for the sample. Zero values indicate that the mineral was included in the refinement calculations, but the calculated concentration was less than 0.05wt%. Minerals not identified by the analyst are not included in refinement calculations for specific samples and are indicated with a dash.

DISCLAIMER: This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.



Summary of Rietveld Quantitative Analysis X-Ray Diffraction Results

Mineral/Compound	B-76 (28-38')	B-77 (32-40')	B-78 (25-30')	B-79 (30-35')	B-81 (45.4-47.5')	B-82 (35.5-37.5')	B-84 (43.5-45')	B-85 (23.5-25')	B-87 (33.5-35')	B-92 (6-8')	B-93 (6-8')
	JAN4519-01 (wt %)	JAN4519-02 (wt %)	JAN4519-03 (wt %)	JAN4519-04 (wt %)	JAN4519-05 (wt %)	JAN4519-06 (wt %)	JAN4519-07 (wt %)	JAN4519-08 (wt %)	JAN4519-09 (wt %)	JAN4519-10 (wt %)	JAN4519-11 (wt %)
Quartz	49.3	46.2	32.5	21.5	39.7	31.3	34.3	33.5	28.7	45.0	38.5
Albite	10.9	4.6	38.5	39.2	19.7	3.2	3.5	25.7	26.4	5.1	15.8
Microcline	6.5	5.9	12.5	10.7	23.3	4.8	-	16.3	12.9	5.4	16.8
Chlorite	4.6	7.2	-	-	-	5.4	7.0	-	-	-	-
Kaolinite	10.6	13.7	-	6.2	6.1	11.8	13.3	6.1	7.0	18.9	18.1
Muscovite	12.5	11.1	7.7	10.2	9.1	22.9	16.2	4.4	7.0	19.3	10.0
Biotite	4.0	3.9	3.8	5.4	-	7.2	4.9	4.0	6.2	2.5	-
Pyrite	0.6	-	-	-	-	0.5	-	-	-	-	-
Magnetite	0.8	-	-	0.6	-	2.8	-	-	-	1.1	0.3
Gibbsite	-	1.9	-	-	-	-	-	-	-	-	-
Sillimanite	-	2.3	-	-	-	-	-	-	-	1.2	-
Montmorillonite	-	3.2	-	-	-	2.3	-	4.0	4.8	-	-
Anhydrite	-	-	0.4	0.6	-	-	1.2	0.8	0.8	1.5	-
Anorthite	-	-	3.8	3.9	2.2	-	-	3.8	4.5	-	-
Dolomite	-	-	0.2	-	-	-	-	-	-	-	-
Ankerite	-	-	0.7	0.4	-	-	-	0.6	0.9	-	0.5
Diopside	-	-	-	1.2	-	-	-	0.8	0.7	-	-
Hematite	-	-	-	-	-	2.0	-	-	-	-	-
Talc	-	-	-	-	-	4.1	-	-	-	-	-
Magnesite	-	-	-	-	-	1.7	-	-	-	-	-
Orthoclase	-	-	-	-	-	-	19.7	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100	100	100

Zero values indicate that the mineral was included in the refinement, but the calculated concentration is below a measurable value.

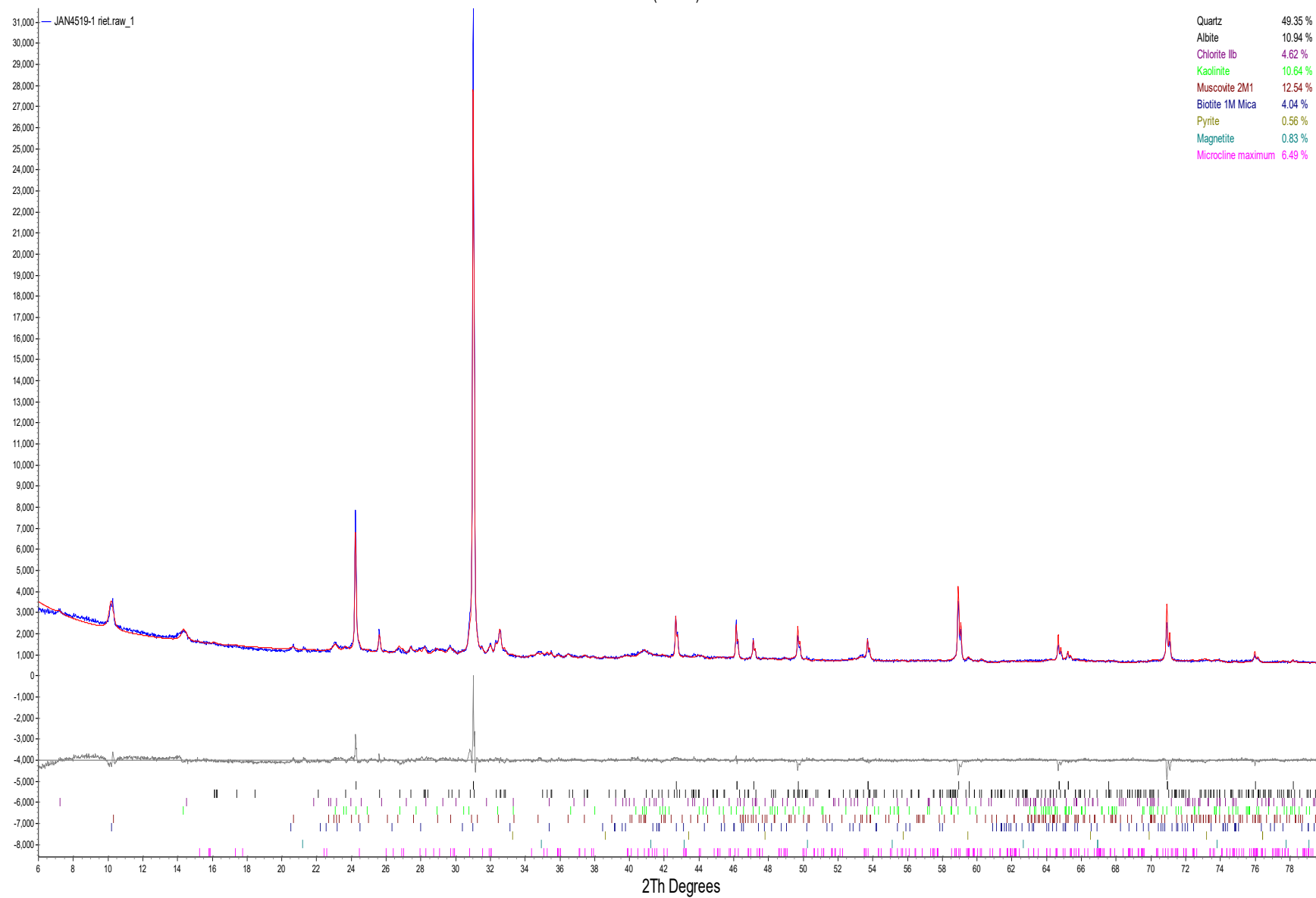
Dashes indicate that the mineral was not identified by the analyst and not included in the refinement calculation for the sample.

The weight percent quantities indicated have been normalized to a sum of 100%. The quantity of amorphous material has not been determined.

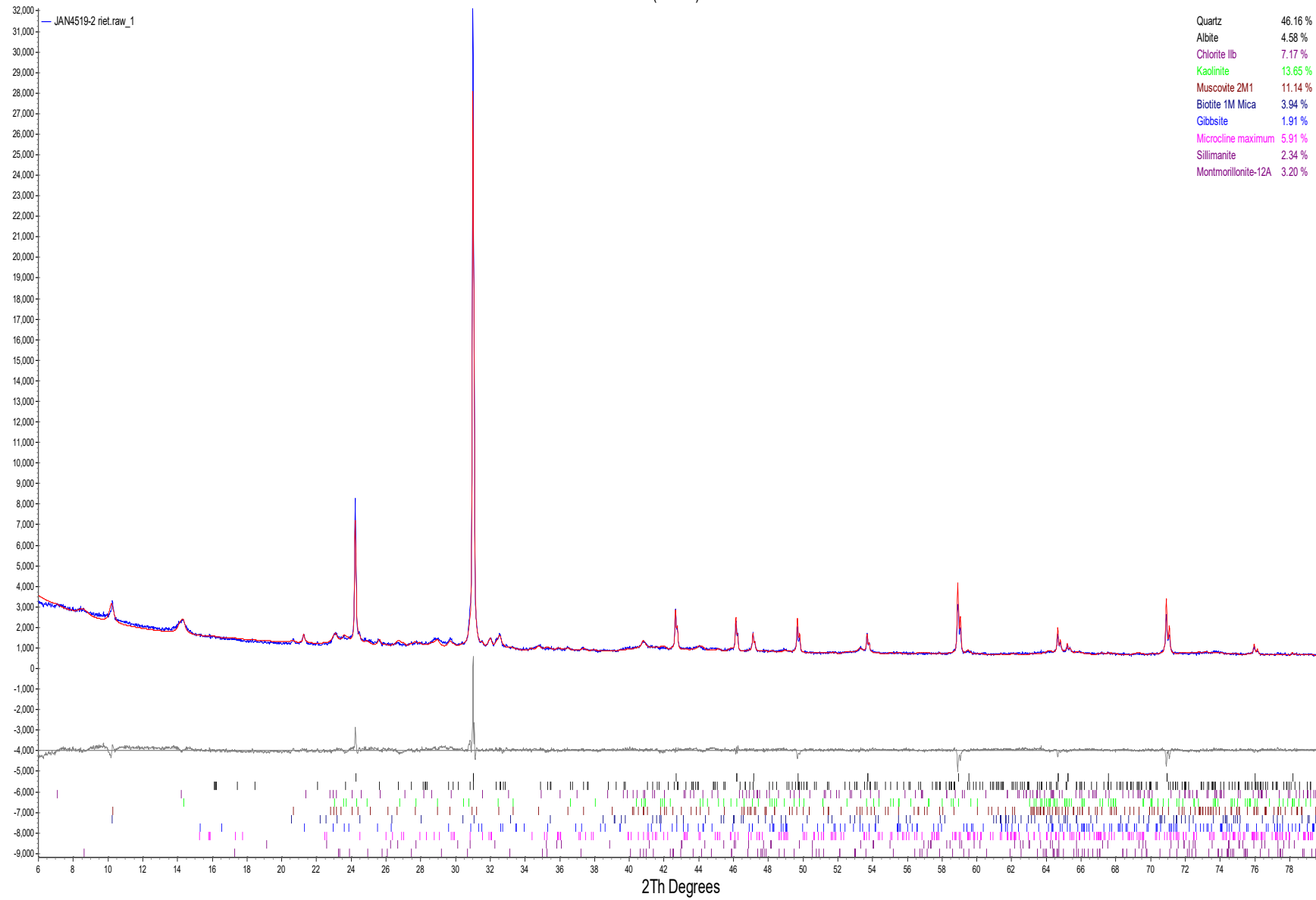
Mineral List

Mineral/Compound	Formula
Quartz	SiO ₂
Albite	NaAlSi ₃ O ₈
Microcline	KAlSi ₃ O ₈
Chlorite	(Fe, ₁ (Mg,Mn) ₅ ,Al)(Si ₃ Al)O ₁₀ (OH) ₈
Kaolinite	Al ₂ Si ₂ O ₅ (OH) ₄
Muscovite	KAl ₂ (AlSi ₃ O ₁₀)(OH) ₂
Biotite	K(Mg,Fe) ₃ (AlSi ₃ O ₁₀)(OH) ₂
Pyrite	FeS ₂
Magnetite	Fe ₃ O ₄
Gibbsite	Al(OH) ₃
Sillimanite	Al ₂ SiO ₅
Montmorillonite	(Na,Ca) _{0.3} (Al,Mg) ₂ Si ₂ O ₁₀ (OH) ₂ ·10H ₂ O
Anhydrite	CaSO ₄
Anorthite	CaAl ₂ Si ₂ O ₈
Dolomite	CaMg(CO ₃) ₂
Ankerite	CaFe(CO ₃) ₂
Diopside	CaMgSi ₂ O ₆
Hematite	Fe ₂ O ₃
Talc	Mg ₃ Si ₄ O ₁₀ (OH) ₂
Magnesite	MgCO ₃
Orthoclase	KAlSi ₃ O ₈

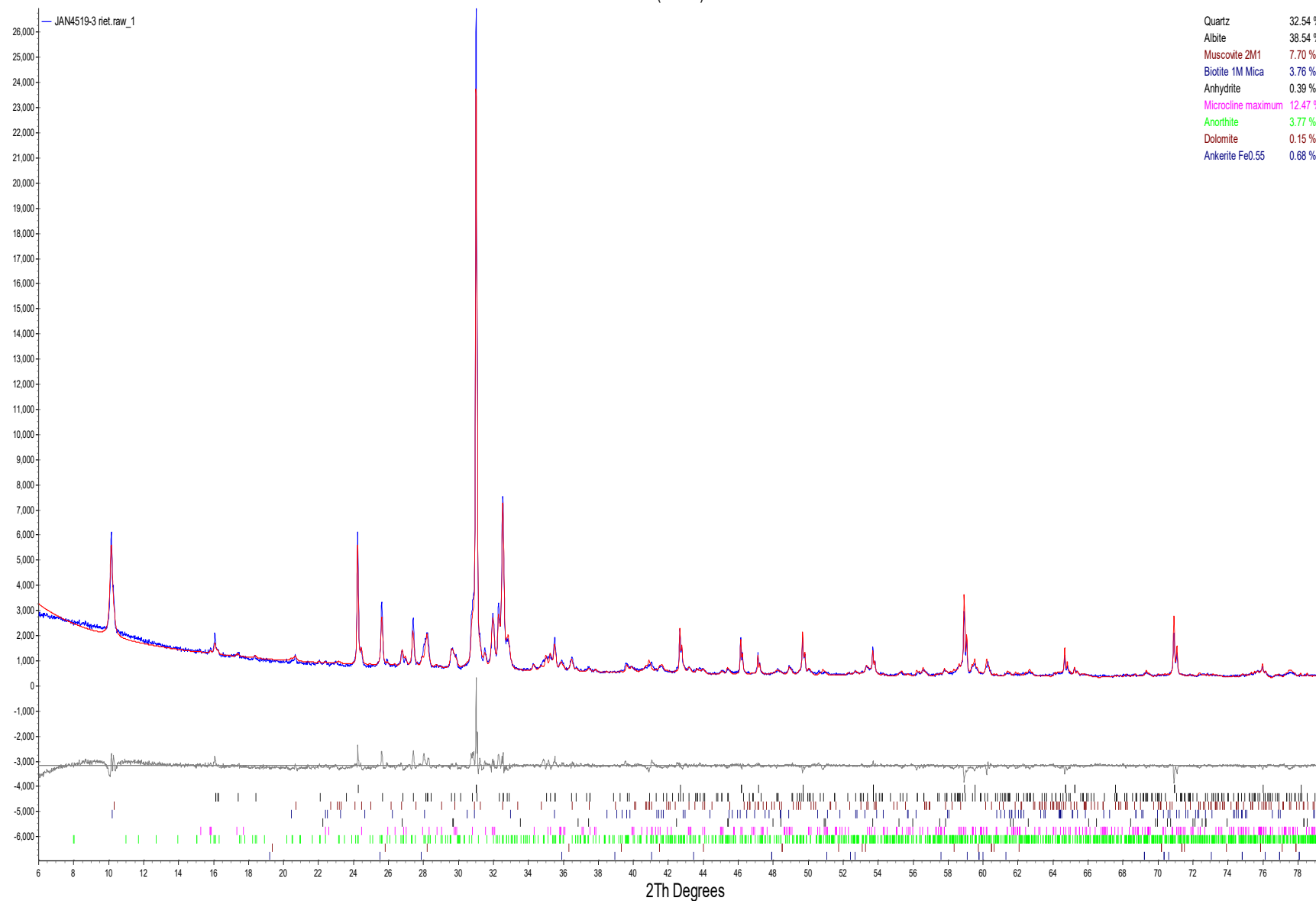
B-76 (28-38')



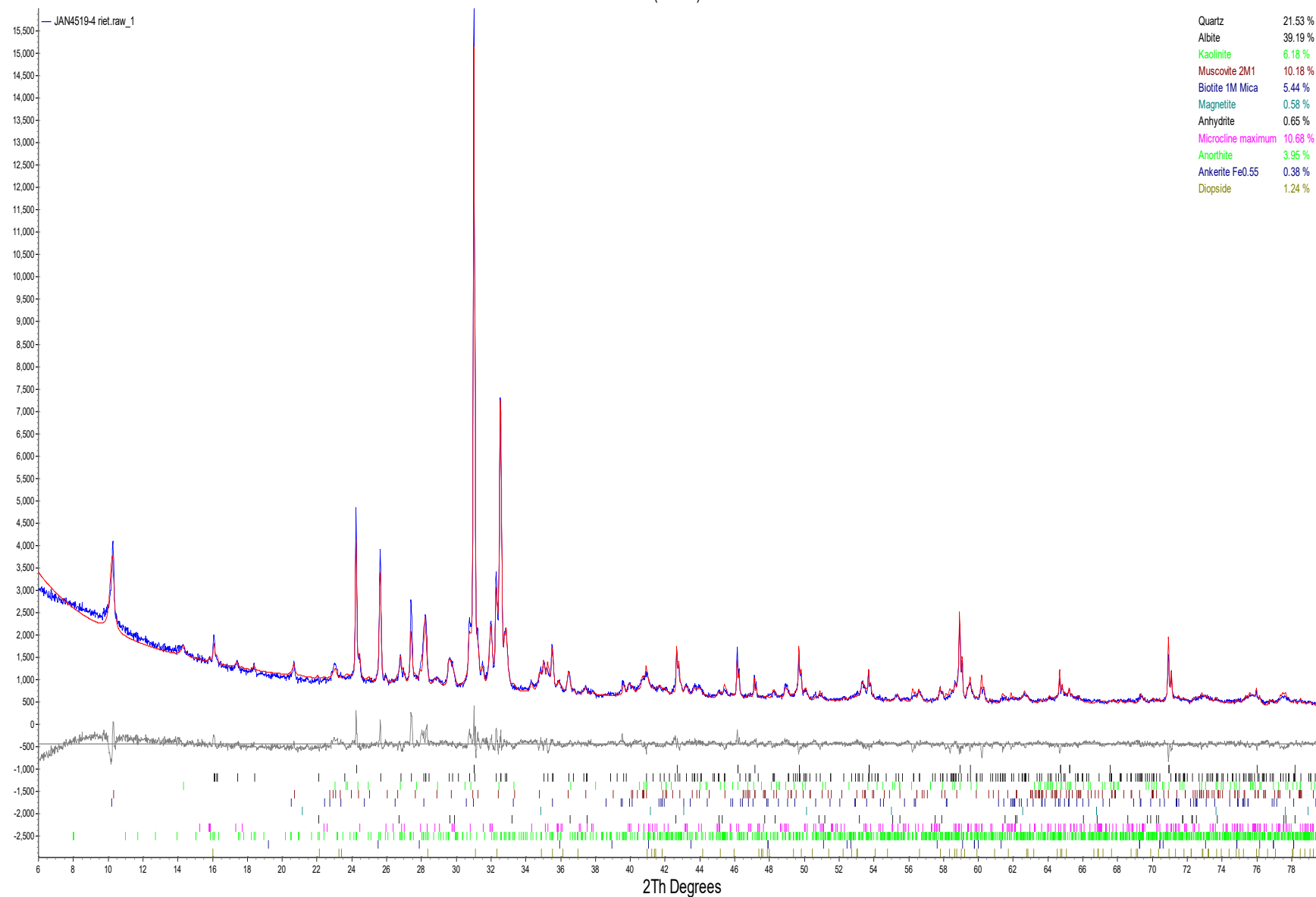
B-77 (32-40')



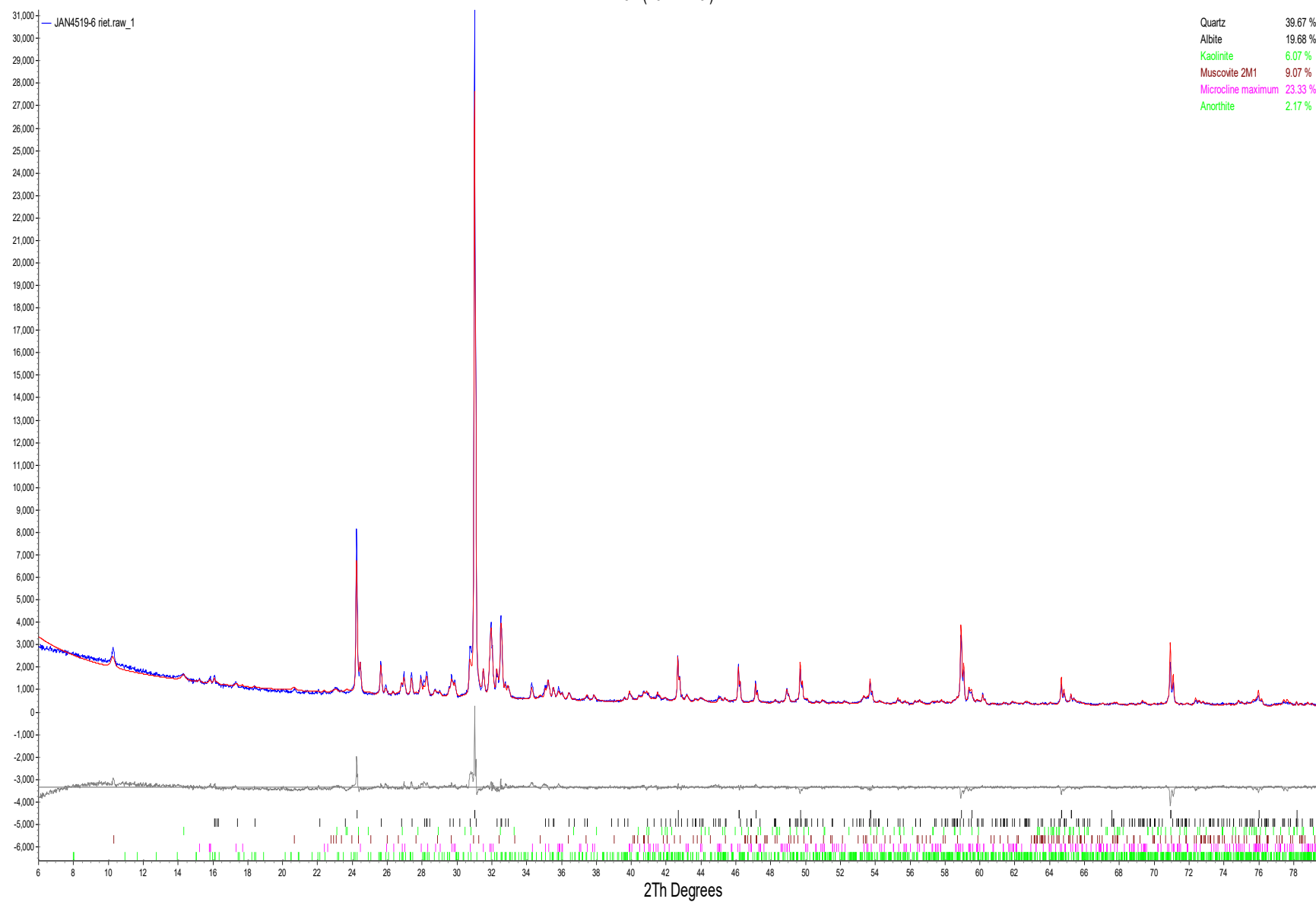
B-78 (25-30')



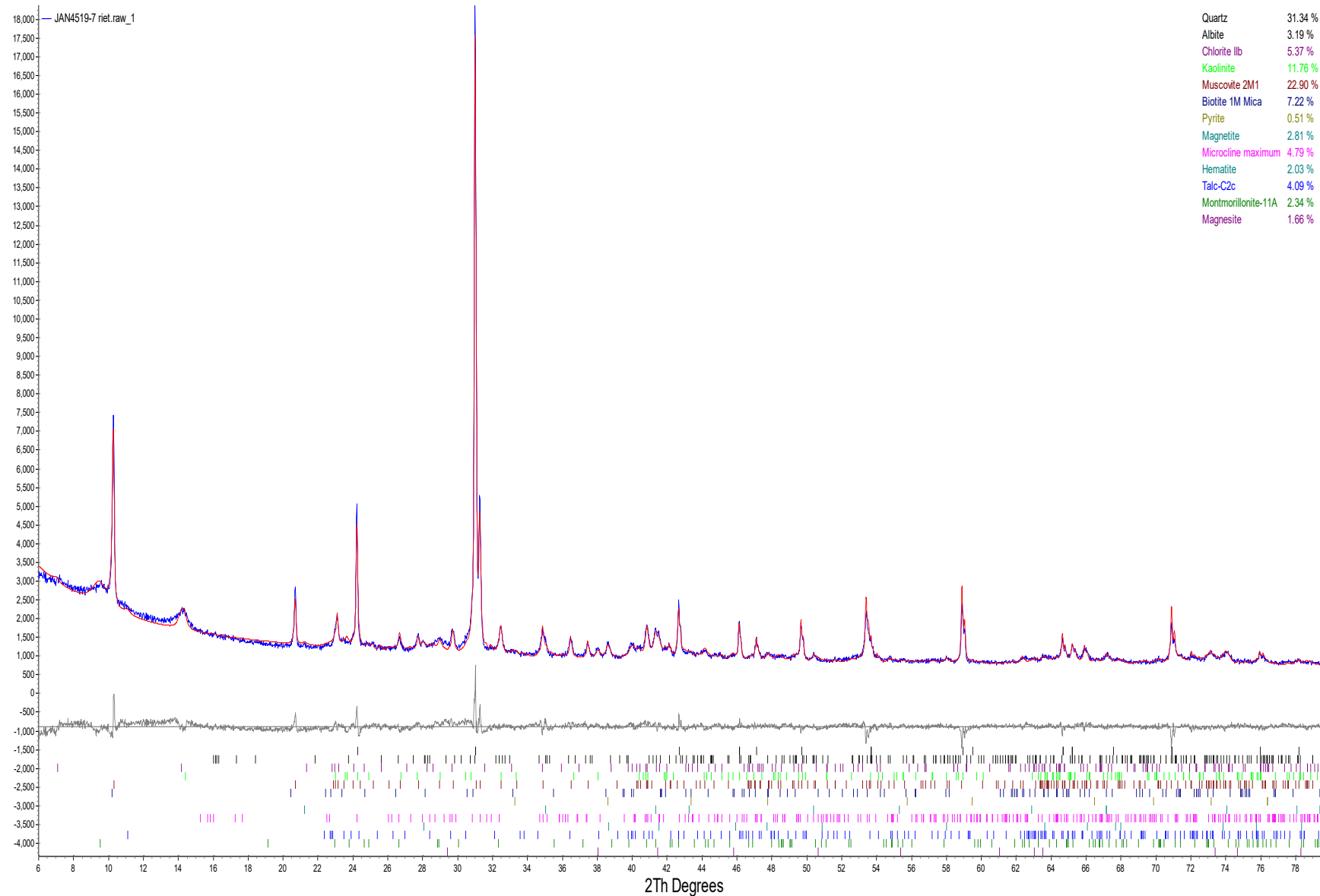
B-79 (30-35')



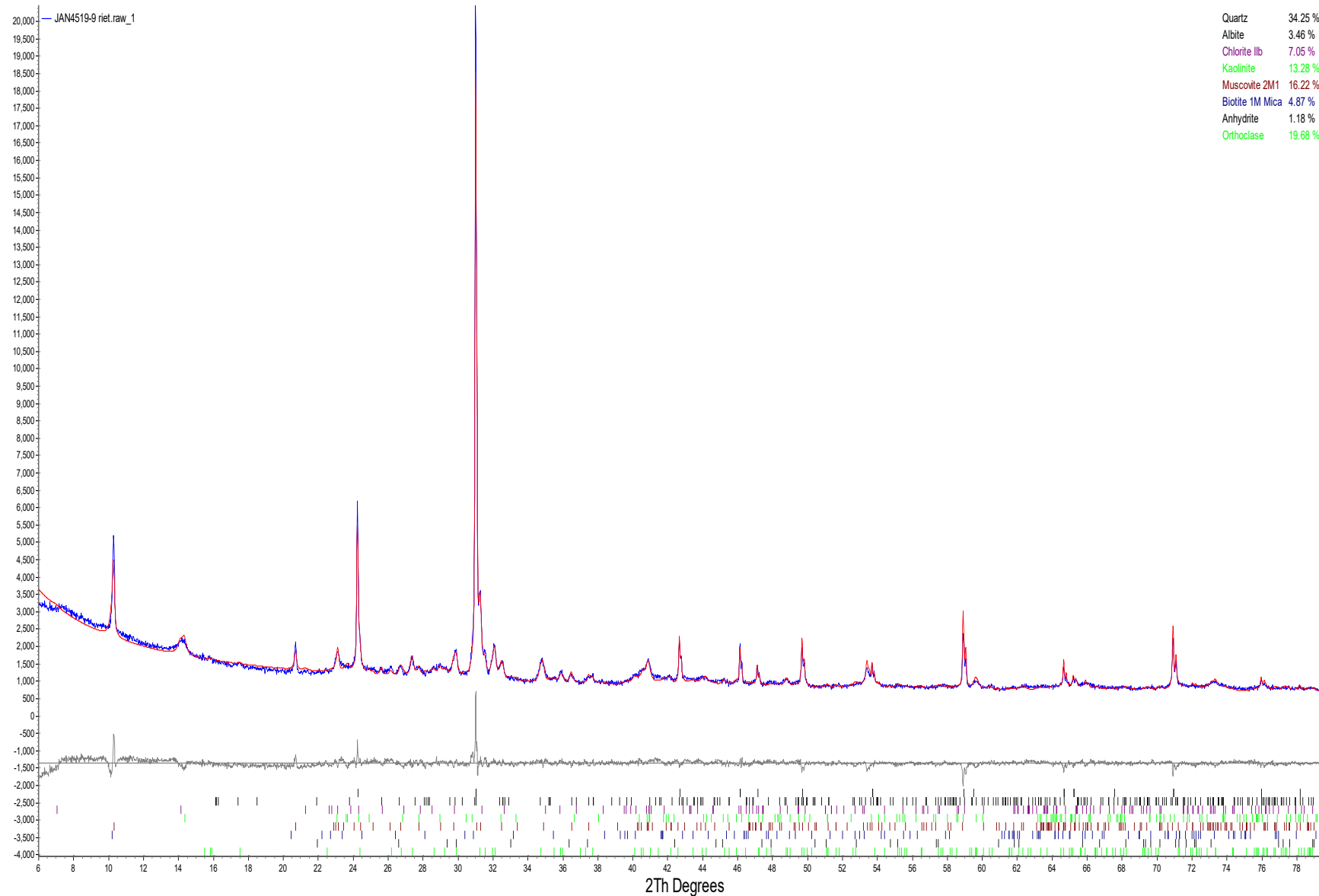
B-81 (45.4-47.5')



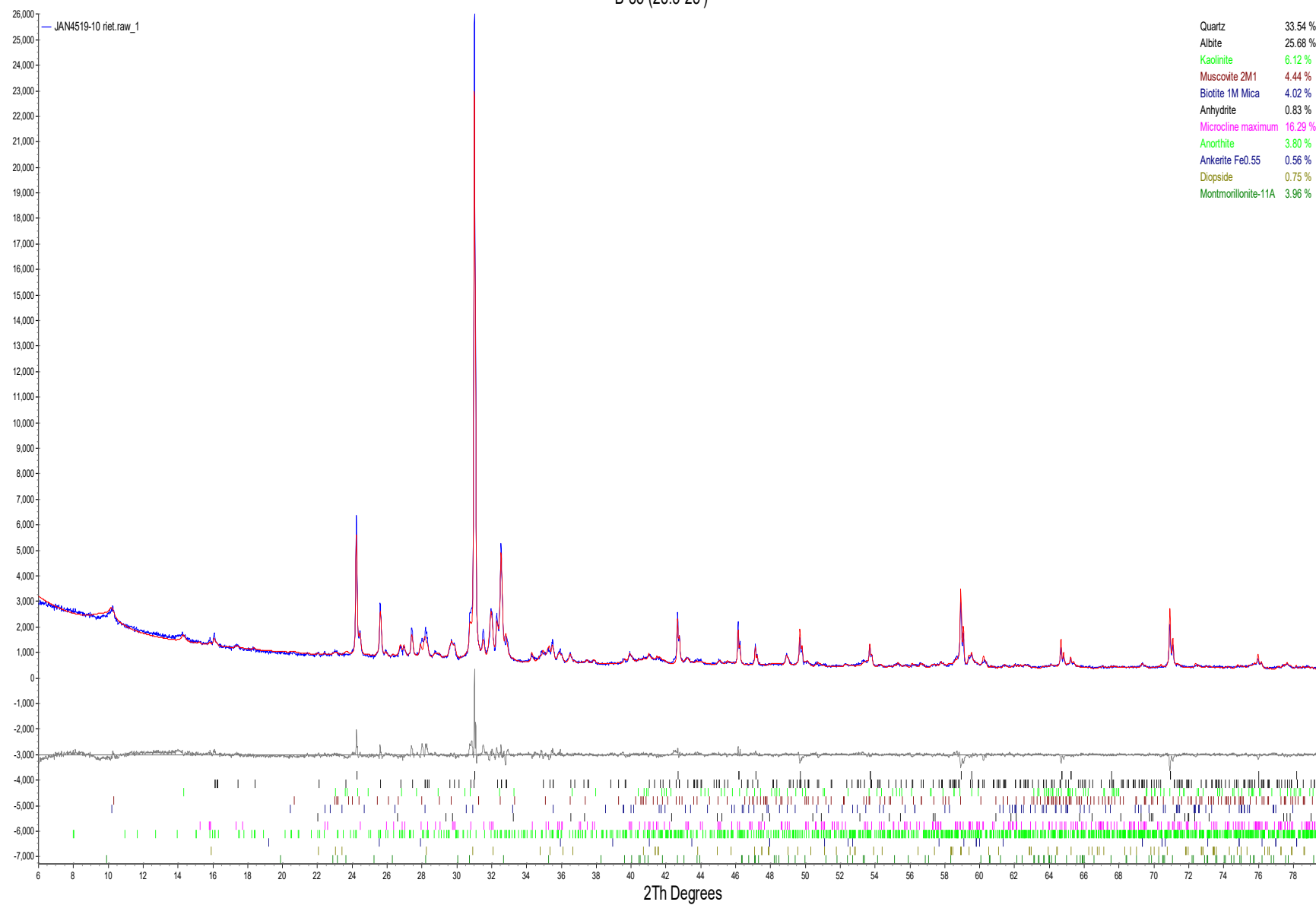
B-82 (35.5-37.5')



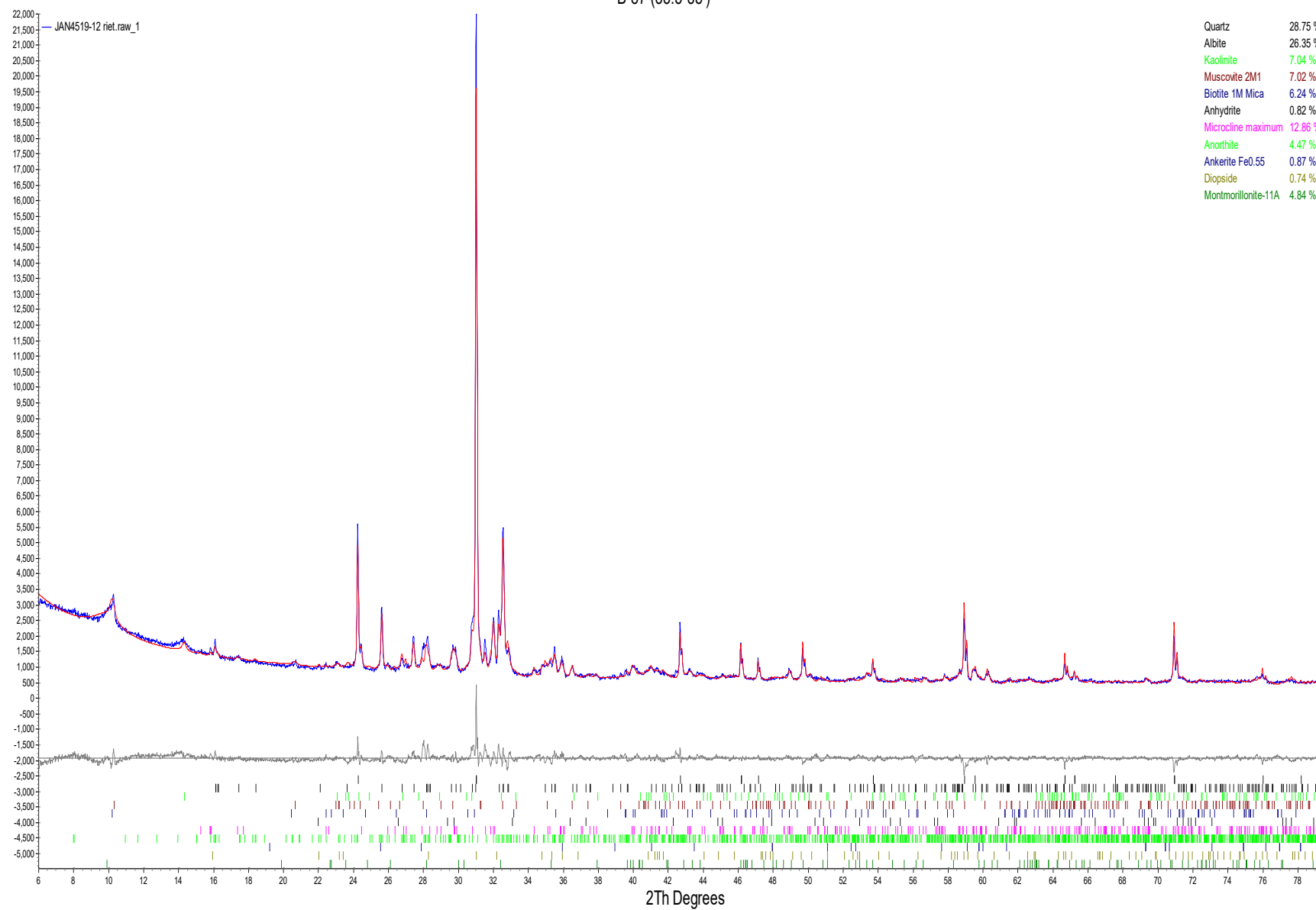
B-84 (43.5-45')



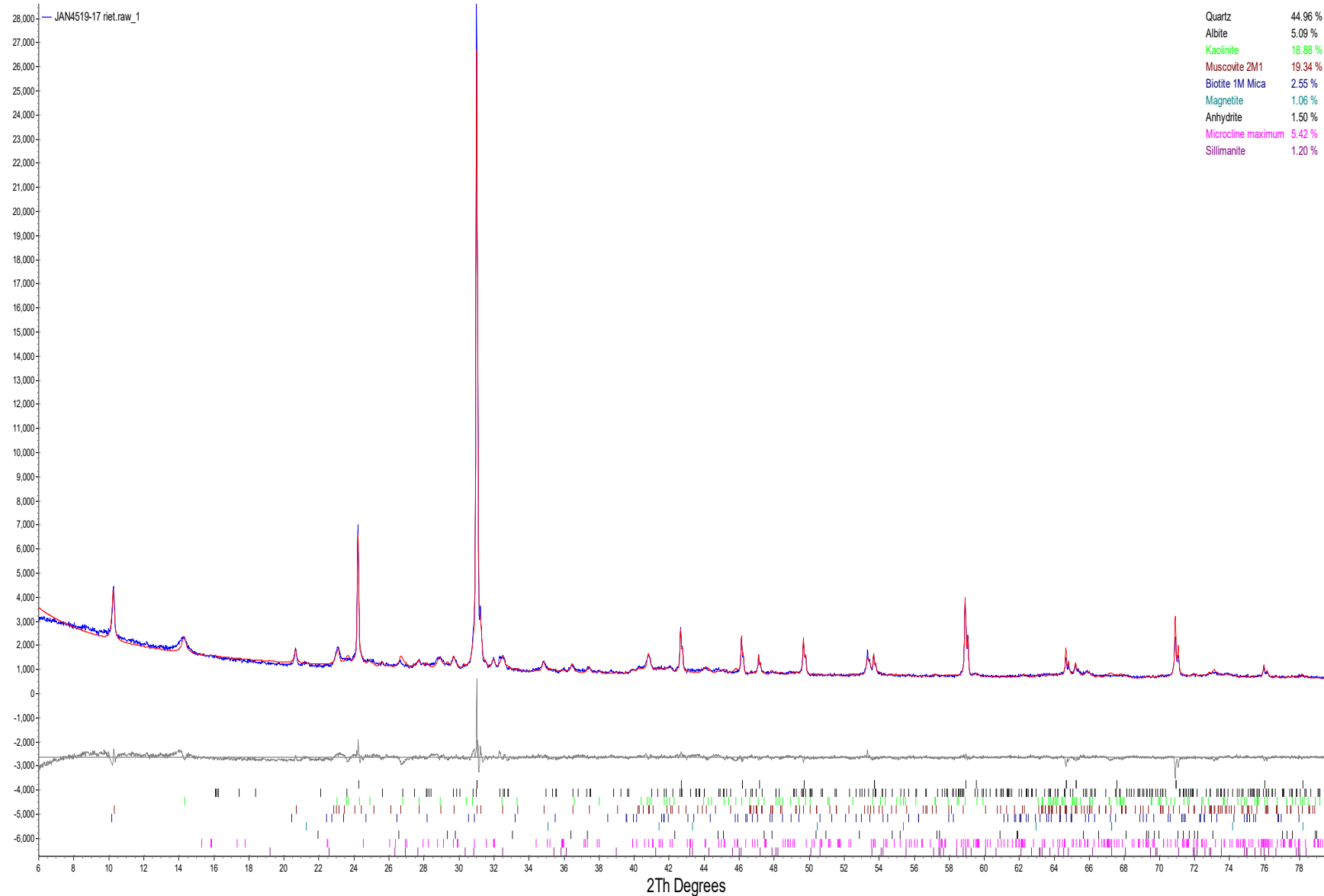
B-85 (23.5-25')



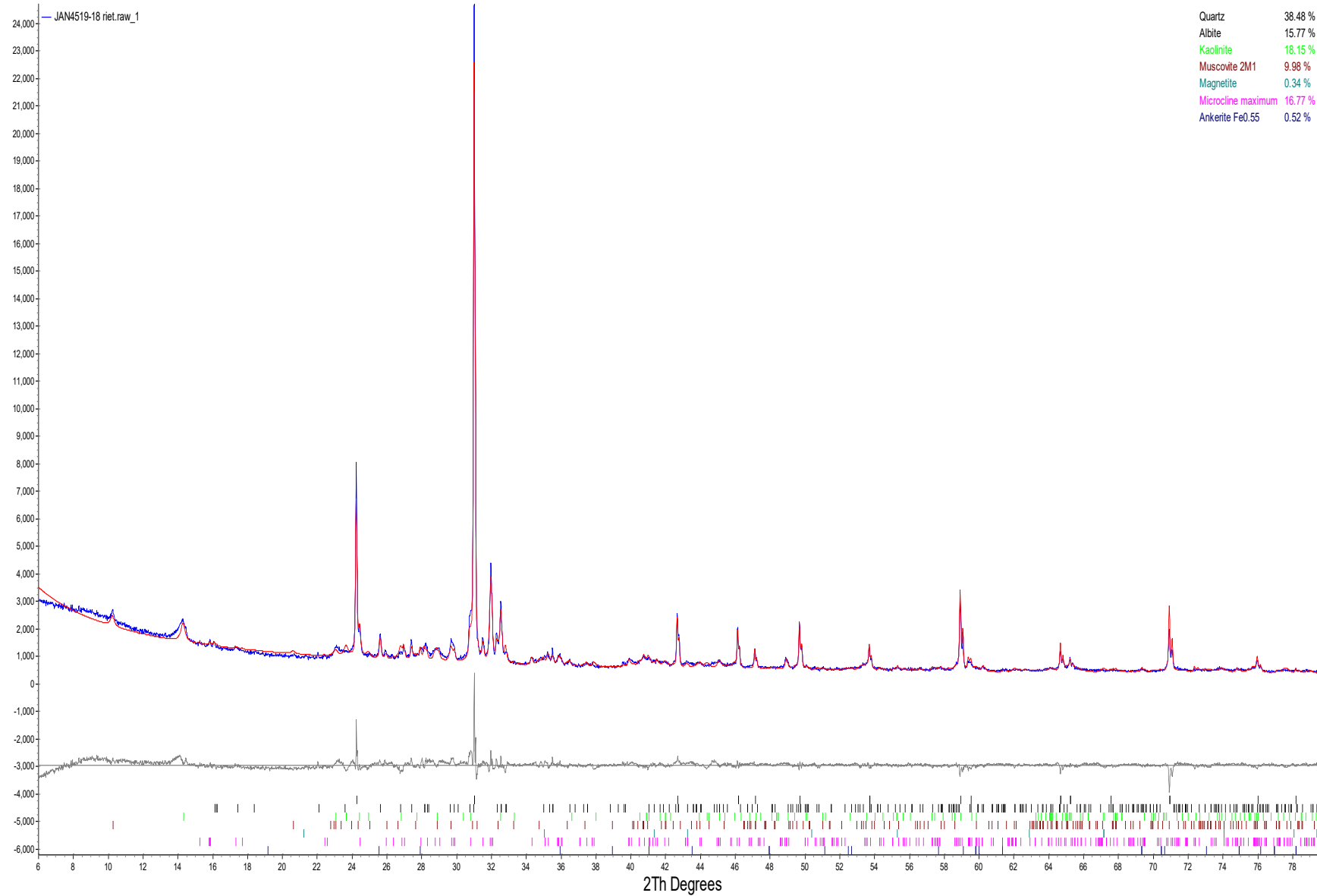
B-87 (33.5-35')



B-92 (6-8')



B-93 (6-8')



February 10, 2021

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Dear Kelley Sharpe:

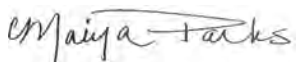
Enclosed are the analytical results for sample(s) received by the laboratory on February 03, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Joju Abraham, Georgia Power-CCR
Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92519942001	CR+0.4	Water	02/02/21 13:44	02/03/21 08:50
92519942002	CR+0.2	Water	02/02/21 13:51	02/03/21 08:50
92519942003	DW_US	Water	02/02/21 14:12	02/03/21 08:50
92519942004	DW_DS	Water	02/02/21 14:08	02/03/21 08:50
92519942005	CR-0.2	Water	02/02/21 14:21	02/03/21 08:50
92519942006	CR-0.5	Water	02/02/21 14:26	02/03/21 08:50
92519942007	CR-0.8	Water	02/02/21 14:30	02/03/21 08:50
92519942008	CR-0.1	Water	02/02/21 14:00	02/03/21 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92519942001	CR+0.4	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942002	CR+0.2	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942003	DW_US	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942004	DW_DS	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942005	CR-0.2	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942006	CR-0.5	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942007	CR-0.8	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519942008	CR-0.1	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	5	PASI-GA

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR+0.4	Lab ID: 92519942001	Collected: 02/02/21 13:44	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:15	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:15	7440-23-5	
Calcium	5.3	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:15	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:15	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:40	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 16:40	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 16:40	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:40	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 16:40	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	27.0	mg/L	10.0	1		02/04/21 12:06		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.5	mg/L	5.0	1		02/05/21 22:32		
Alkalinity, Total as CaCO ₃	20.5	mg/L	5.0	1		02/05/21 22:32		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.3	mg/L	1.0	1		02/05/21 08:34	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 08:34	16984-48-8	
Sulfate	4.5	mg/L	1.0	1		02/05/21 08:34	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR+0.2		Lab ID: 92519942002		Collected: 02/02/21 13:51	Received: 02/03/21 08:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Potassium	2.7	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:34	7440-09-7	
Sodium	6.8	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:34	7440-23-5	
Calcium	5.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:34	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:34	7439-95-4	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:57	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 16:57	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 16:57	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 16:57	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 16:57	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	41.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	20.4	mg/L	5.0	1		02/05/21 22:39		
Alkalinity, Total as CaCO ₃	20.4	mg/L	5.0	1		02/05/21 22:39		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville						
Chloride	6.2	mg/L	1.0	1		02/05/21 09:40	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 09:40	16984-48-8	
Sulfate	4.4	mg/L	1.0	1		02/05/21 09:40	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Sample: DW_US	Lab ID: 92519942003	Collected: 02/02/21 14:12	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.7	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:39	7440-09-7	
Sodium	6.8	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:39	7440-23-5	
Calcium	4.9	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:39	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:39	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:03	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:03	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:03	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:03	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:03	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	29.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.1	mg/L	5.0	1		02/05/21 22:47		
Alkalinity, Total as CaCO ₃	20.1	mg/L	5.0	1		02/05/21 22:47		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.1	mg/L	1.0	1		02/05/21 09:54	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 09:54	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 09:54	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Sample: DW_DS		Lab ID: 92519942004		Collected: 02/02/21 14:08	Received: 02/03/21 08:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Potassium	2.7	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:44	7440-09-7	
Sodium	6.9	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:44	7440-23-5	
Calcium	5.1	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:44	7440-70-2	
Magnesium	2.0	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:44	7439-95-4	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:09	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:09	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:09	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:09	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:09	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	30.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	16.7	mg/L	5.0	1		02/05/21 23:01		
Alkalinity, Total as CaCO ₃	16.7	mg/L	5.0	1		02/05/21 23:01		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville						
Chloride	6.1	mg/L	1.0	1		02/05/21 10:38	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 10:38	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 10:38	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.2	Lab ID: 92519942005	Collected: 02/02/21 14:21	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 18:58	7440-09-7	
Sodium	6.8	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:58	7440-23-5	
Calcium	5.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 18:58	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 18:58	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:15	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:15	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:15	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:15	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:15	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	38.0	mg/L	10.0	1		02/04/21 12:07		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.2	mg/L	5.0	1		02/05/21 23:10		
Alkalinity, Total as CaCO ₃	17.2	mg/L	5.0	1		02/05/21 23:10		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.2	mg/L	1.0	1		02/05/21 10:52	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 10:52	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 10:52	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.5	Lab ID: 92519942006	Collected: 02/02/21 14:26	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:03	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:03	7440-23-5	
Calcium	5.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:03	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:03	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:20	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:20	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:20	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:20	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:20	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	31.0	mg/L	10.0	1		02/04/21 12:08		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.0	mg/L	5.0	1		02/05/21 23:19		
Alkalinity, Total as CaCO ₃	17.0	mg/L	5.0	1		02/05/21 23:19		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.2	mg/L	1.0	1		02/05/21 11:06	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 11:06	16984-48-8	
Sulfate	4.3	mg/L	1.0	1		02/05/21 11:06	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.8	Lab ID: 92519942007	Collected: 02/02/21 14:30	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:08	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:08	7440-23-5	
Calcium	4.9	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:08	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:08	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:26	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:26	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:26	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:26	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:26	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	30.0	mg/L	10.0	1		02/04/21 12:08		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	17.0	mg/L	5.0	1		02/05/21 23:27		
Alkalinity, Total as CaCO ₃	17.0	mg/L	5.0	1		02/05/21 23:27		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.4	mg/L	1.0	1		02/05/21 11:21	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 11:21	16984-48-8	
Sulfate	4.5	mg/L	1.0	1		02/05/21 11:21	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

Sample: CR-0.1	Lab ID: 92519942008	Collected: 02/02/21 14:00	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.8	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:13	7440-09-7	
Sodium	7.0	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:13	7440-23-5	
Calcium	5.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:13	7440-70-2	
Magnesium	2.1	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:13	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:32	7440-38-2	
Beryllium	ND	mg/L	0.00050	1	02/04/21 10:04	02/07/21 17:32	7440-41-7	
Boron	ND	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:32	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:32	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:32	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	25.0	mg/L	10.0	1		02/04/21 12:09		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	20.7	mg/L	5.0	1		02/05/21 23:34		
Alkalinity, Total as CaCO ₃	20.7	mg/L	5.0	1		02/05/21 23:34		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.6	mg/L	1.0	1		02/05/21 11:35	16887-00-6	
Fluoride	ND	mg/L	0.10	1		02/05/21 11:35	16984-48-8	
Sulfate	4.8	mg/L	1.0	1		02/05/21 11:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

QC Batch: 597431 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3150491 Matrix: Water
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	02/05/21 18:05	
Magnesium	mg/L	ND	0.050	02/05/21 18:05	
Potassium	mg/L	ND	0.20	02/05/21 18:05	
Sodium	mg/L	ND	1.0	02/05/21 18:05	

LABORATORY CONTROL SAMPLE: 3150492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	0.95	95	80-120	
Potassium	mg/L	1	1.1	115	80-120	
Sodium	mg/L	1	1.1	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150493 3150494

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92519942001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Calcium	mg/L	5.3	1	1	6.2	6.3	92	103	75-125	2	20		
Magnesium	mg/L	2.1	1	1	3.0	3.1	95	97	75-125	1	20		
Potassium	mg/L	2.8	1	1	3.9	3.9	107	109	75-125	0	20		
Sodium	mg/L	7.0	1	1	8.0	8.1	99	112	75-125	2	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

QC Batch:	597433	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3150562 Matrix: Water

Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	02/07/21 14:46	
Beryllium	mg/L	ND	0.00050	02/07/21 14:46	
Boron	mg/L	ND	0.040	02/07/21 14:46	
Cobalt	mg/L	ND	0.0050	02/07/21 14:46	
Molybdenum	mg/L	ND	0.010	02/07/21 14:46	

LABORATORY CONTROL SAMPLE: 3150563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	100	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150564 3150565

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519266022	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	1.4J ug/L	0.1	0.1	0.10	0.10	101	100	75-125	1	20
Beryllium	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	3	20
Boron	mg/L	587 ug/L	1	1	1.6	1.5	97	96	75-125	1	20
Cobalt	mg/L	1.4J ug/L	0.1	0.1	0.10	0.096	99	95	75-125	5	20
Molybdenum	mg/L	14.0 ug/L	0.1	0.1	0.12	0.12	103	101	75-125	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

QC Batch: 597549 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3150931 Matrix: Water
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	02/04/21 12:04	

LABORATORY CONTROL SAMPLE: 3150932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	387	97	84-108	

SAMPLE DUPLICATE: 3150933

Parameter	Units	92519931002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	45.0	43.0	5	10	

SAMPLE DUPLICATE: 3150934

Parameter	Units	92519942006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	31.0	33.0	6	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

QC Batch: 598016 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3153367 Matrix: Water
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	02/05/21 20:00	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	02/05/21 20:00	

LABORATORY CONTROL SAMPLE: 3153368

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153369 3153370

Parameter	Units	92518671027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	160	50	50	207	213	95	107	80-120	3	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153371 3153372

Parameter	Units	92519484005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	21.3	50	50	73.0	73.4	103	104	80-120	0	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

QC Batch: 597589 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

METHOD BLANK: 3151020 Matrix: Water
Associated Lab Samples: 92519942001, 92519942002, 92519942003, 92519942004, 92519942005, 92519942006, 92519942007, 92519942008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	02/05/21 08:05	
Fluoride	mg/L	ND	0.10	02/05/21 08:05	
Sulfate	mg/L	ND	1.0	02/05/21 08:05	

LABORATORY CONTROL SAMPLE: 3151021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.2	94	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.6	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151022 3151023

Parameter	Units	3151022		3151023		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	6.3	50	50	52.7	53.2	93	94	90-110	1	10
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	93	95	90-110	2	10
Sulfate	mg/L	4.5	50	50	51.7	51.9	94	95	90-110	0	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151024 3151025

Parameter	Units	3151024		3151025		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	9.9	50	50	57.4	57.2	95	95	90-110	0	10
Fluoride	mg/L	0.17	2.5	2.5	2.5	2.5	94	94	90-110	0	10
Sulfate	mg/L	16.5	50	50	64.4	64.3	96	96	90-110	0	10

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519942

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519942

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92519942001	CR+0.4	EPA 3010A	597431	EPA 6010D	597695
92519942002	CR+0.2	EPA 3010A	597431	EPA 6010D	597695
92519942003	DW_US	EPA 3010A	597431	EPA 6010D	597695
92519942004	DW_DS	EPA 3010A	597431	EPA 6010D	597695
92519942005	CR-0.2	EPA 3010A	597431	EPA 6010D	597695
92519942006	CR-0.5	EPA 3010A	597431	EPA 6010D	597695
92519942007	CR-0.8	EPA 3010A	597431	EPA 6010D	597695
92519942008	CR-0.1	EPA 3010A	597431	EPA 6010D	597695
92519942001	CR+0.4	EPA 3005A	597433	EPA 6020B	597742
92519942002	CR+0.2	EPA 3005A	597433	EPA 6020B	597742
92519942003	DW_US	EPA 3005A	597433	EPA 6020B	597742
92519942004	DW_DS	EPA 3005A	597433	EPA 6020B	597742
92519942005	CR-0.2	EPA 3005A	597433	EPA 6020B	597742
92519942006	CR-0.5	EPA 3005A	597433	EPA 6020B	597742
92519942007	CR-0.8	EPA 3005A	597433	EPA 6020B	597742
92519942008	CR-0.1	EPA 3005A	597433	EPA 6020B	597742
92519942001	CR+0.4	SM 2450C-2011	597549		
92519942002	CR+0.2	SM 2450C-2011	597549		
92519942003	DW_US	SM 2450C-2011	597549		
92519942004	DW_DS	SM 2450C-2011	597549		
92519942005	CR-0.2	SM 2450C-2011	597549		
92519942006	CR-0.5	SM 2450C-2011	597549		
92519942007	CR-0.8	SM 2450C-2011	597549		
92519942008	CR-0.1	SM 2450C-2011	597549		
92519942001	CR+0.4	SM 2320B-2011	598016		
92519942002	CR+0.2	SM 2320B-2011	598016		
92519942003	DW_US	SM 2320B-2011	598016		
92519942004	DW_DS	SM 2320B-2011	598016		
92519942005	CR-0.2	SM 2320B-2011	598016		
92519942006	CR-0.5	SM 2320B-2011	598016		
92519942007	CR-0.8	SM 2320B-2011	598016		
92519942008	CR-0.1	SM 2320B-2011	598016		
92519942001	CR+0.4	EPA 300.0 Rev 2.1 1993	597589		
92519942002	CR+0.2	EPA 300.0 Rev 2.1 1993	597589		
92519942003	DW_US	EPA 300.0 Rev 2.1 1993	597589		
92519942004	DW_DS	EPA 300.0 Rev 2.1 1993	597589		
92519942005	CR-0.2	EPA 300.0 Rev 2.1 1993	597589		
92519942006	CR-0.5	EPA 300.0 Rev 2.1 1993	597589		
92519942007	CR-0.8	EPA 300.0 Rev 2.1 1993	597589		
92519942008	CR-0.1	EPA 300.0 Rev 2.1 1993	597589		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

Arcadis - Atlanta

Project #

WO#: 92519942

PM: MP

Due Date: 02/08/21

CLIENT: GA-ArcadAtl1

Courier: Fed Ex UPS USPS Pace Other: _____ Client

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2/3/21 KRW

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: THR230

Type of Ice:

Wet Blue None

Cooler Temp: 1.6 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.6

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

February 10, 2021

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Dear Kelley Sharpe:

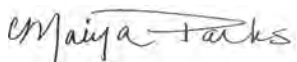
Enclosed are the analytical results for sample(s) received by the laboratory on February 03, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Joju Abraham, Georgia Power-CCR
Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92519959001	UT01_US	Water	02/02/21 15:00	02/03/21 08:50
92519959002	UT02	Water	02/02/21 14:40	02/03/21 08:50
92519959003	UT01_DS	Water	02/02/21 14:45	02/03/21 08:50
92519959004	UT03	Water	02/02/21 14:30	02/03/21 08:50

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SAMPLE ANALYTE COUNT

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92519959001	UT01_US	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519959002	UT02	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519959003	UT01_DS	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92519959004	UT03	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	AW1	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Sample: UT01_US		Lab ID: 92519959001	Collected: 02/02/21 15:00	Received: 02/03/21 08:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Potassium	2.9	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:18	7440-09-7	
Sodium	12.7	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:18	7440-23-5	
Calcium	17.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:18	7440-70-2	
Magnesium	3.3	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:18	7439-95-4	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:38	7440-38-2	
Boron	0.046	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:38	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:38	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	97.0	mg/L	10.0	1		02/04/21 12:09		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	53.5	mg/L	5.0	1		02/05/21 23:42		
Alkalinity, Total as CaCO ₃	53.5	mg/L	5.0	1		02/05/21 23:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville						
Chloride	10.7	mg/L	1.0	1		02/05/21 11:50	16887-00-6	
Fluoride	0.22	mg/L	0.10	1		02/05/21 11:50	16984-48-8	
Sulfate	14.5	mg/L	1.0	1		02/05/21 11:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Sample: UT02	Lab ID: 92519959002	Collected: 02/02/21 14:40	Received: 02/03/21 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	3.0	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:22	7440-09-7	
Sodium	12.7	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:22	7440-23-5	
Calcium	17.4	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:22	7440-70-2	
Magnesium	3.3	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:22	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:43	7440-38-2	
Boron	0.063	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:43	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:43	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	99.0	mg/L	10.0	1		02/04/21 12:09		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	54.7	mg/L	5.0	1		02/09/21 13:52		
Alkalinity, Total as CaCO ₃	54.7	mg/L	5.0	1		02/09/21 13:52		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	10.4	mg/L	1.0	1		02/05/21 12:04	16887-00-6	
Fluoride	0.17	mg/L	0.10	1		02/05/21 12:04	16984-48-8	
Sulfate	15.5	mg/L	1.0	1		02/05/21 12:04	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: UT01_DS Lab ID: 92519959003 Collected: 02/02/21 14:45 Received: 02/03/21 08:50 Matrix: Water								
6010D ATL ICP Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.9	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:27	7440-09-7	
Sodium	12.2	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:27	7440-23-5	
Calcium	17.4	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:27	7440-70-2	
Magnesium	3.6	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:27	7439-95-4	
6020 MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 17:49	7440-38-2	
Boron	0.11	mg/L	0.040	1	02/04/21 10:04	02/07/21 17:49	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 17:49	7439-98-7	
2540C Total Dissolved Solids Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	100	mg/L	10.0	1		02/04/21 12:10		
2320B Alkalinity Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	55.1	mg/L	5.0	1		02/09/21 14:00		
Alkalinity, Total as CaCO ₃	55.1	mg/L	5.0	1		02/09/21 14:00		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	9.9	mg/L	1.0	1		02/05/21 12:19	16887-00-6	
Fluoride	0.17	mg/L	0.10	1		02/05/21 12:19	16984-48-8	
Sulfate	16.5	mg/L	1.0	1		02/05/21 12:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

Sample: UT03		Lab ID: 92519959004		Collected: 02/02/21 14:30	Received: 02/03/21 08:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Potassium	2.9	mg/L	0.20	1	02/04/21 09:45	02/05/21 19:32	7440-09-7	
Sodium	12.6	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:32	7440-23-5	
Calcium	17.3	mg/L	1.0	1	02/04/21 09:45	02/05/21 19:32	7440-70-2	
Magnesium	3.4	mg/L	0.050	1	02/04/21 09:45	02/05/21 19:32	7439-95-4	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Arsenic	ND	mg/L	0.0050	1	02/04/21 10:04	02/07/21 18:06	7440-38-2	
Boron	0.069	mg/L	0.040	1	02/04/21 10:04	02/07/21 18:06	7440-42-8	
Molybdenum	ND	mg/L	0.010	1	02/04/21 10:04	02/07/21 18:06	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	98.0	mg/L	10.0	1		02/04/21 12:10		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	54.3	mg/L	5.0	1		02/09/21 14:08		
Alkalinity, Total as CaCO ₃	54.3	mg/L	5.0	1		02/09/21 14:08		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville						
Chloride	10.2	mg/L	1.0	1		02/05/21 13:31	16887-00-6	
Fluoride	0.17	mg/L	0.10	1		02/05/21 13:31	16984-48-8	
Sulfate	15.4	mg/L	1.0	1		02/05/21 13:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597431 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3150491 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	02/05/21 18:05	
Magnesium	mg/L	ND	0.050	02/05/21 18:05	
Potassium	mg/L	ND	0.20	02/05/21 18:05	
Sodium	mg/L	ND	1.0	02/05/21 18:05	

LABORATORY CONTROL SAMPLE: 3150492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	0.95	95	80-120	
Potassium	mg/L	1	1.1	115	80-120	
Sodium	mg/L	1	1.1	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150493 3150494

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519942001 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	5.3	1	1	6.2	6.3	92	103	75-125	2	20
Magnesium	mg/L	2.1	1	1	3.0	3.1	95	97	75-125	1	20
Potassium	mg/L	2.8	1	1	3.9	3.9	107	109	75-125	0	20
Sodium	mg/L	7.0	1	1	8.0	8.1	99	112	75-125	2	20

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597433 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3150562 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	02/07/21 14:46	
Boron	mg/L	ND	0.040	02/07/21 14:46	
Molybdenum	mg/L	ND	0.010	02/07/21 14:46	

LABORATORY CONTROL SAMPLE: 3150563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	100	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150564 3150565

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519266022 Result	Spike Conc.	Spike Conc.	Result								
Arsenic	mg/L	1.4J ug/L	0.1	0.1	0.10	0.10	101	100	75-125	1	20		
Boron	mg/L	587 ug/L	1	1	1.6	1.5	97	96	75-125	1	20		
Molybdenum	mg/L	14.0 ug/L	0.1	0.1	0.12	0.12	103	101	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

QC Batch: 597549

Analysis Method: SM 2450C-2011

QC Batch Method: SM 2450C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3150931

Matrix: Water

Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	02/04/21 12:04	

LABORATORY CONTROL SAMPLE: 3150932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	387	97	84-108	

SAMPLE DUPLICATE: 3150933

Parameter	Units	92519931002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	45.0	43.0	5	10	

SAMPLE DUPLICATE: 3150934

Parameter	Units	92519942006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	31.0	33.0	6	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 598016 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92519959001

METHOD BLANK: 3153367 Matrix: Water
Associated Lab Samples: 92519959001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	02/05/21 20:00	
Alkalinity, Bicarbonate (CaCO ₃)	mg/L	ND	5.0	02/05/21 20:00	

LABORATORY CONTROL SAMPLE: 3153368

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153369 3153370

Parameter	Units	92518671027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	160	50	50	207	213	95	107	80-120	3	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153371 3153372

Parameter	Units	92519484005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	21.3	50	50	73.0	73.4	103	104	80-120	0	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

QC Batch: 598355

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92519959002, 92519959003, 92519959004

METHOD BLANK: 3154778

Matrix: Water

Associated Lab Samples: 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	02/09/21 13:16	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	02/09/21 13:16	

LABORATORY CONTROL SAMPLE: 3154779

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.7	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3154780 3154781

Parameter	Units	92518942011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	23.9	50	50	70.3	70.8	93	94	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3154782 3154783

Parameter	Units	92518942012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	35.3	50	50	85.2	85.5	100	100	80-120	0	25	

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QUALITY CONTROL DATA

Project: Plant McDonough CCR-Ash Pond
Pace Project No.: 92519959

QC Batch: 597589 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

METHOD BLANK: 3151020 Matrix: Water
Associated Lab Samples: 92519959001, 92519959002, 92519959003, 92519959004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	02/05/21 08:05	
Fluoride	mg/L	ND	0.10	02/05/21 08:05	
Sulfate	mg/L	ND	1.0	02/05/21 08:05	

LABORATORY CONTROL SAMPLE: 3151021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.2	94	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.6	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151022 3151023

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519942001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	6.3	50	50	52.7	53.2	93	94	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	93	95	90-110	2	10		
Sulfate	mg/L	4.5	50	50	51.7	51.9	94	95	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3151024 3151025

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92519959003 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	9.9	50	50	57.4	57.2	95	95	90-110	0	10		
Fluoride	mg/L	0.17	2.5	2.5	2.5	2.5	94	94	90-110	0	10		
Sulfate	mg/L	16.5	50	50	64.4	64.3	96	96	90-110	0	10		

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QUALIFIERS

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough CCR-Ash Pond

Pace Project No.: 92519959

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92519959001	UT01_US	EPA 3010A	597431	EPA 6010D	597695
92519959002	UT02	EPA 3010A	597431	EPA 6010D	597695
92519959003	UT01_DS	EPA 3010A	597431	EPA 6010D	597695
92519959004	UT03	EPA 3010A	597431	EPA 6010D	597695
92519959001	UT01_US	EPA 3005A	597433	EPA 6020B	597742
92519959002	UT02	EPA 3005A	597433	EPA 6020B	597742
92519959003	UT01_DS	EPA 3005A	597433	EPA 6020B	597742
92519959004	UT03	EPA 3005A	597433	EPA 6020B	597742
92519959001	UT01_US	SM 2450C-2011	597549		
92519959002	UT02	SM 2450C-2011	597549		
92519959003	UT01_DS	SM 2450C-2011	597549		
92519959004	UT03	SM 2450C-2011	597549		
92519959001	UT01_US	SM 2320B-2011	598016		
92519959002	UT02	SM 2320B-2011	598355		
92519959003	UT01_DS	SM 2320B-2011	598355		
92519959004	UT03	SM 2320B-2011	598355		
92519959001	UT01_US	EPA 300.0 Rev 2.1 1993	597589		
92519959002	UT02	EPA 300.0 Rev 2.1 1993	597589		
92519959003	UT01_DS	EPA 300.0 Rev 2.1 1993	597589		
92519959004	UT03	EPA 300.0 Rev 2.1 1993	597589		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

Arcadis - Atlanta

Project

WO#: 92519959

PM: MP

Due Date: 02/08/21

CLIENT: GA-ArcadAtl

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2/3/21 KRW

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: THR230

Type of Ice:

Wet Blue None

Cooler Temp:

1.9

Correction Factor:

Add/Subtract (°C) 0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.9

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>7 Day JAT</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

PLANT MCDONOUGH SURFACE WATER SAMPLES 02/02/2021

Sample ID	Time	Temp(F)	pH	OPR (mV)	DO (mg/L)	Turbidity (NTU)	Conductance – (mS/cm)	Coordinates
UT01_US	1500	46.7	7.07	144.3	11.82	4.05	0.187	33.825727, -84.482406
UT02	1440	46.6	7.05	147.3	11.90	4.19	0.190	33.825039, -84.482618
UT03	1430	45.4	7.01	143.9	11.17	4.60	0.189	33.824350, -84.482458
UT01_DS	1415	47.4	7.19	110.4	10.60	5.96	0.252	33.822484, -84.482007

PLANT MCDONOUGH (RIVER) SURFACE WATER SAMPLES 00/00/202

Sample ID	Time	Temp(F)	pH	OPR (mV)	DO (mg/L)	Turbidity (NTU)	Conductance – (mS/cm)	Coordinates
CR+0.4	1344	46.16	7.65	-4.8	13.02	14.2	0.080	33.818131, -84.479768
CR+0.2	1351	46.24	7.57	-3.4	13.08	13.7	0.080	33.819924, -84.478340
CR-0.1	1400	46.43	7.78	-8.1	12.92	16.0	0.083	33.824437, -84.473293
DW_DS	1408	46.41	7.7	-11.0	14.72	11.8	0.079	33.821684, -84.476360
DW_US	1412	46.52	7.51	-9.8	12.87	12.3	0.079	33.823208, -84.474698
CR-0.2	1421	46.60	7.48	-19.3	13.00	14.0	0.079	33.824437, -84.473293
CR-0.5	14.26	46.75	7.46	-20.8	13.05	14.4	0.078	33.827315, -84.469092
CR-0.8	1430	46.98	7.15	-21.3	13.97	14.0	0.080	33.827193, -84.463413



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