



Prepared for

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**2018 ANNUAL GROUNDWATER
MONITORING AND CORRECTIVE
ACTION REPORT
PLANT HAMMOND ASH PONDS 1 AND 2
(AP-1 AND AP-2)**

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Project Number GW6581B

January 2019

CERTIFICATION STATEMENT

This 2018 *Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Company - Plant Hammond – Ash Ponds 1 and 2 (AP-1 and AP-2)* has been prepared in accordance 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 under the supervision of a licensed professional engineer with Geosyntec Consultants.



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LIST OF ACRONYMS

AP	ash pond
Ccls	Cambrian age Conasauga Formation
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/s	centimeters per second
DO	dissolved oxygen
EPD	Environmental Protection Division
ft AMSL	feet above mean sea level
ft/day	feet per day
ft/ft	feet per foot
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
K_h	horizontal hydraulic conductivity
MCL	Maximum Contaminant Level
mg/L	milligram per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric turbidity units
ORP	oxidation-reduction potential
PE	professional engineer
QA/QC	Quality Assurance/Quality Control
SSI	statistically significant increase
SSL	statistically significant level
SM	Standard Method
s.u.	standard unit
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D] and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants has prepared this *2018 Annual Groundwater Monitoring and Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company (GPC) Plant Hammond (Site) Ash Ponds 1 and 2 (AP-1 and AP-2). Semiannual monitoring and reporting for the CCR units is performed in accordance with the monitoring requirements of 40 CFR §257.90 through §257.95 of the Federal CCR rule, and Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a). This report documents semiannual monitoring activities completed through the 2018 calendar year in accordance with 40 CFR §257.90(e).

1.1 Site Description and Background

Plant Hammond is a four-unit, coal-fired electric generating facility located in Floyd County, Georgia, approximately 10 miles west of Rome, Georgia. The Site is bordered by Georgia Highway 20 (GA-20) on the north, the Coosa River on the south, Cabin Creek and industrial land on the east, and sparsely populated, forested, rural and industrial land on the west (**Figure 1**).

AP-1 received CCR material from its commission in 1952 until 1969. Since 1969, AP-1 has been utilized as a co-treatment pond to handle return water flows from the other ponds and for recycling of process water for plant operations. AP-2 was commissioned in 1969, and a diagonal separator dike was added in 1998, effectively dividing AP-2 in half. AP-2 is currently used as a dewatering facility for fly ash and bottom ash, with dewatering operations alternating between halves.

1.2 Regional Geology & Hydrogeologic Setting

The following section presents the geologic and hydrogeologic conditions for the Site as described in the *Hydrogeologic Assessment Report (HAR)* (Geosyntec, 2018) for AP-1 and AP-2.

1.2.1 Regional and Site Geology

Plant Hammond is located in the Valley and Ridge Physiographic Province (Valley and Ridge) of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name.

Geologic mapping performed at AP-1 by Petrologic Solutions, Inc. (Petrologic), under the direction of Golder, indicates that AP-1 is underlain by the middle units of the Cambrian age Conasauga Formation (Ccls), consisting of mostly shaley limestone. Subsurface investigations generally describe the bedrock as limestone or shaley limestone. AP-1 is underlain primarily by terrace alluvium, residuum, highly weathered/fractured shaley limestone bedrock, and competent shaley limestone bedrock. The terrace alluvium consists of unconsolidated sediments associated with deposition from the Coosa River and Cabin Creek. Alluvium was variously described as well sorted and poorly sorted sand, clayey sand, sandy gravel, clayey gravel, or gravelly clay. The residuum clay layer or native soils have been derived from the in-place weathering of the shaley limestone bedrock. The residuum is generally described as a lean to fat clay, sometimes silty with some sand, and rarely gravel. Just below the residuum clay layer is a gradational zone of varying proportions of clayey residuum and sand, gravel, and cobble sized angular pieces of partially weathered limestone, grading into a zone of fractured shaley limestone, before grading into unweathered, fresh shaley limestone bedrock. The upper highly weathered zone appears more as residuum with various sized rock fragments. The lower zone becomes less clayey with depth and is estimated to be approximately 10 feet thick. The limestone is described as medium to dark gray, very finely laminated with lighter and darker gray layers, and also contains interbeds of calcareous shale.

Geologic mapping performed at AP-2 by Petrologic (Golder, 2017) indicates that the pond is underlain by the lower units of the Ccls, consisting of mostly calcareous shale. Based on review of subsurface investigations at AP-2, the bedrock was identified as predominantly calcareous shale and fissile black shale. AP-2 is underlain primarily by terrace alluvium, colluvium, residuum, partially weathered shale bedrock, and unweathered shale bedrock. The alluvial deposits generally grade from a silt and silty clay to a clayey sand and silty sand to a sand and gravelly sand at depth. The colluvium consists of silty sand, silty clay with angular and sub-rounded chert fragments, and dolomite, sandstone, and shale fragments. Residual or native soils have been derived from the in-place weathering of the shale bedrock. The residuum is generally described as brown to yellow brown firm clayey silt with weathered shale fragments. The partially

weathered shale zone occurs as an intermediate weathering stage between the residuum and the unweathered shale bedrock. The weathered material is described as black to dark gray to dark red hard, fissile shale and claystone. Limited rock was encountered within 20 feet of the water table during previous investigations. The unweathered shale bedrock was not encountered or directly observed in the historical borings advanced at the Site. However, based on geologic conditions in the region, weathering, fracturing and jointing decreases with depth and the weathered rock material grades into competent bedrock.

1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-1 and AP-2 is a regional groundwater aquifer that occurs in the residuum and the weathered and fractured bedrock. Under natural conditions the water table surface would be expected to be a subdued reflection of the surface topography. Groundwater recharge is by precipitation falling onto bedrock outcrop areas and then percolating through lower lithologic units to the bedrock. The uppermost aquifer is considered as unconfined; however, localized, semi-confined conditions may be encountered due to the low-permeability clayey nature of the residual soils, or as a result of perched groundwater or poorly interconnected fracture networks in the bedrock. Based on observations of residuum soil types and horizontal conductivity values, the movement of groundwater in the soil can be characterized as low-to moderate permeability, porous media flow. The shallow bedrock groundwater flow in the underlying bedrock is characterized as fracture flow.

1.3 Groundwater Monitoring Well Network

In accordance with 40 CFR §257.91, a groundwater monitoring system was installed at AP-1 and AP-2 that (1) consists of a sufficient number of wells, (2) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the units (i.e., background conditions) and passing the waste boundary of the units. The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions. The well network was certified by a professional engineer (PE) on October 17, 2017; the certification is maintained in the site's Operating Records.

The certified compliance monitoring well network for AP-1 and AP-2 consists of a total of 18 monitoring wells. The locations of the compliance monitoring well network and secondary groundwater level monitoring piezometer network are shown on **Figure 2**;

well construction details as well as monitoring purpose (compliance monitoring well or groundwater level monitoring piezometer) are listed in **Table 1**.

2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR §257.90(e), the following describes monitoring-related activities performed during the preceding year and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with 40 CFR §257.93.

2.1 Monitoring Well Installation and Maintenance

Eleven groundwater level monitoring piezometers were installed at AP-1 and AP-2 during the 2018 reporting year. Piezometers MW-19, MW-20, MW-24D, MW-25D, MW-26D, MW-27D, MW-28D, and MW-29 were installed at AP-1 in September and November 2018. Piezometers MW-21D, MW-22, and MW-23D were installed at AP-2 in November 2018. These piezometers were installed to provide additional data for characterizing groundwater flow conditions. These piezometers may be sampled in the future to characterize horizontal and vertical groundwater quality conditions. The locations of piezometers MW-19 through MW-29 are shown on **Figure 2** and piezometer construction details are also provided in **Table 1**.

No maintenance activities were required for the monitoring well network during 2018.

2.2 Assessment Monitoring

Appendix III constituents exhibited statistically significant increases (SSIs) over background during the first detection monitoring event conducted in October 2017. Analytical results and statistical evaluation of those results were provided in the *2017 Annual Groundwater and Corrective Action Monitoring Report* (ERM, 2018). An assessment monitoring program was initiated. The compliance monitoring well network (**Figure 2**) was sampled for Appendix IV parameters in April 2018, within 90 days of initiating the assessment monitoring program. An Assessment Monitoring Program Notification was prepared for both AP-1 and AP-2 on May 15, 2018, pursuant to 40 CFR §257.94(e)(3) and placed in the Operating Records of each ash pond as required by 40 CFR §257.105(h)(5).

Pursuant to 40 CFR §257.95(d)(1), the AP-1 and AP-2 compliance wells were resampled within 90 days of receiving the April 2018 data, occurring June 4 – 7, 2018. The groundwater samples were analyzed for Appendix III parameters and the following Appendix IV constituents that were detected during the April 2018 event at the identified unit: AP-1 (arsenic, barium, cobalt, fluoride, lithium, molybdenum, selenium, thallium,

and combined radium 226/228); AP-2 (arsenic, barium, cadmium, cobalt, fluoride, lithium, selenium, thallium, and combined radium 226/228). The June 2018 sampling event served as the first of two semiannual groundwater assessment monitoring events conducted in 2018, as required by 40 CFR §257.95(d)(1). The second event was conducted October 1 – 5, 2018. The number of groundwater samples collected for analysis and the dates the samples were collected at AP-1 and AP-2 while in assessment monitoring during 2018 is summarized in **Table 2**. Details of these events and analytical results are discussed in Section 3, while the statistical results are discussed in Section 4.

2.3 Other Sampling

A groundwater sample was collected from piezometer MW-7 on February 21, 2018 for analysis of arsenic by USEPA analytical method 6020B. The piezometer is located south of AP-1 and downgradient of compliance well HGWC-13, as shown on **Figure 2**. Arsenic was not detected in groundwater at MW-7. The field log and laboratory report associated with this sampling is included in **Appendix A**.

3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were implemented and the groundwater sampling results that were obtained in connection with the assessment monitoring program conducted at the Site in 2018.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth to groundwater level measurements were recorded from the Site's wells and piezometers and used to calculate the corresponding groundwater elevation. The calculated groundwater elevations for the April, June, and October 2018 sampling events are presented in **Table 3**. As mentioned in Section 1.2, the uppermost aquifer is considered hydraulically connected between AP-1 and AP-2, though influenced by features local to each CCR unit (e.g., constant head in AP-1, unnamed natural tributary west of AP-2). The groundwater elevations observed during the three monitoring events were averaged and the averaged values ranged from 583.61 feet above mean sea level (ft AMSL) in piezometer MW-18 to 565.87 ft AMSL in piezometer MW-5.

The groundwater elevation data were used to prepare potentiometric surface maps for the April, June, and October 2018 sampling events, which are presented on **Figures 3, 4, and 5**, respectively. Groundwater in both the AP-1 and AP-2 areas flow under the influence of topography from slightly higher elevations on the north side of the Site in a generally southward direction. However, the constant head maintained in AP-1 influences the groundwater flow in the vicinity of AP-1 resulting in a radial pattern away from AP-1 and downgradient to the south and east. The local groundwater flow direction beneath AP-2 is influenced by a low-lying area along the unit's western boundary; groundwater flows to the west or southwest.

3.2 Groundwater Gradient and Flow Velocity

The groundwater hydraulic gradients within the uppermost aquifer beneath AP-1 and AP-2 were calculated using the groundwater elevation data from the April, June, and October 2018 events, and between the main interpreted groundwater flow paths to account for changing flow directions across the Site, as discussed in Section 3.1. The supporting calculations are presented in **Table 4**. The presented hydraulic gradients represent the calculated average of the April, June, and October 2018 events. The general trajectory of the flow paths used in the calculations and associated potentiometric contour lines are shown on **Figures 3, 4, and 5**.

As presented in **Table 4**, the hydraulic gradients along the southerly and easterly groundwater flow path lines associated with AP-1 are 0.054 feet per foot (ft/ft) and 0.033 ft/ft, respectively. For AP-2, the average hydraulic gradient calculated along the southwesterly flow path is 0.011 ft/ft.

The approximate horizontal flow velocities associated with AP-1 and AP-2 were calculated using the following derivative of Darcy's Law. The calculations are presented on **Table 4**.

$$V = \text{linear velocity} = -\frac{K * i}{n_e}$$

where:

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

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

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

$$n_e = \text{Effective porosity}$$

The average hydraulic conductivity for AP-1 [4.17×10^{-3} cm/s = 11.82 feet per day (ft/day)] was computed from slug test data derived from ten locations across the Site, and presented in the HAR (Geosyntec, 2018). An estimated effective porosity of 0.15 is used to represent average conditions for the observed lithology. With these variables determined, and accounting for the averaged hydraulic gradient discussed above, the average groundwater flow velocity underneath AP-1 was calculated to be 3.5 ft/day (i.e., average of the southerly and easterly flow velocities).

For AP-2, the horizontal hydraulic conductivity (K_h) measurements were calculated by ERM (2018) from slug test data collected in a subset of AP-2 wells and piezometers. Results were broadly grouped based on the lithology in which the wells or piezometers were screened. At AP-2, hydraulic conductivities for wells and piezometers screened in the alluvium, colluvium, and residuum averaged 1.7×10^{-4} cm/s (0.47 ft/day). An effective porosity value of 0.15 was used to represent average conditions for the observed lithology at AP-2. Applying these values and the average hydraulic gradient, the average groundwater flow velocity underneath AP-2 was calculated as 0.035 ft/day. The flow velocity calculations are provided in **Table 4**.

3.3 Groundwater Sampling Procedures

Groundwater samples were collected from the compliance monitoring network using low-flow sampling procedures in accordance with 40 CFR §257.93(a). Sixteen of the 18 wells were purged and sampled using the installed bladder pump with dedicated tubing; the remaining two wells were sampled using a peristaltic pump equipped with new disposable polyethylene tubing. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters [i.e., pH, conductivity, oxidation-reduction potential (ORP), temperature, and dissolved oxygen (DO)] during well purging to verify stabilization prior to sampling. Turbidity was measured using a LaMotte 2020we[®] portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

- pH \pm 0.1 Standard Units (s.u.).
- Conductivity \pm 5%.
- \pm 0.2 milligrams per liter (mg/L) or \pm 10%, whichever is greater for DO > 0.5 mg/L. No criterion applies if DO < 0.5 mg/L, record only.
- Turbidity measured less than 10 nephelometric turbidity units (NTU).

Following purging, once stabilization was achieved, samples were collected into appropriately-preserved laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to Pace Analytical Services, LLC. (Pace) in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the 2018 monitoring events are provided in **Appendix A**.

3.4 Laboratory Analyses

Laboratory analyses were performed by Pace, which is accredited by the National Environmental Laboratory Accreditation Program (NELAP). Pace maintains a NELAP certification for the Appendix III and Appendix IV parameters analyzed for this project. Metals were analyzed using USEPA Method 6020B; total dissolved solid was analyzed using Standard Method (SM) 2540C; anions were analyzed by USEPA Method 300.0; and total radium was analyzed by USEPA Methods 9315/9320.

The groundwater analytical results from the Appendix IV initial assessment monitoring event held April 2018 and the two semiannual assessment monitoring events in June and October 2018 are summarized in **Table 5**. The Pace laboratory reports associated with the results presented in Table 5 are provided in **Appendix A**. The pH field measurements recorded during the sampling events are also provided in **Table 5**.

3.5 Quality Assurance & Quality Control Summary

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events at the rate of one QA/QC sample per 10 groundwater samples and included the following: field duplicates, equipment blanks, and field blank samples. QA/QC samples were collected in laboratory-provided bottles and submitted under the same chain of custody as the primary samples for analysis of the same parameters by Pace.

In addition to collecting QA/QC samples, the data were validated based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and applicable federal and site-specific guidance documents (SCS, 2017; USEPA, 2011; USEPA, 2017). Where necessary, the data were qualified with supporting documentation and justifications. The associated data validation report is provided in **Appendix A** with the laboratory reports.

4.0 STATISTICAL ANALYSIS

The following section presents a summary of the statistical approach applied to assess the 2018 groundwater analytical data in downgradient compliance wells relative to the available historical dataset. Groundwater monitoring data collected during the semiannual monitoring events in June and October 2018, were statically analyzed pursuant to 40 CFR §257.95 following the PE-certified statistical method. Appendix III detection monitoring parameters were statistically analyzed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were analyzed to determine if concentrations statistically exceeded the established groundwater protection standards (GWPS). The following subsections provide an overview of the statistical methods used to evaluate Appendix III and IV parameters and statistical analyses results.

4.1 Statistical Methods

The Sanitas[™] groundwater statistical software was used to perform the 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 document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009).

4.1.1 Appendix III Statistical Methods

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for each of the Appendix III parameters. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. If the most recent sample exceeds its respective background statistical limit, an initial statistically significant increase (SSI) is identified. Following the Unified Guidance recommendation to update background limits every 2 to 3 years (USEPA, 2009), the limits constructed from the first detection monitoring event (October 2017) remained fixed for the 2018 data analysis. Therefore, a direct comparison between the 2017 prediction limits and 2018 monitoring data was performed. The results are discussed in Section 4.2 and tabulated in **Table B-1, Appendix B**.

4.1.2 Appendix IV Statistical Methods

Appendix IV constituents detected during the initial assessment event (April 2018) are added to the list of parameters sampled during the subsequent semiannual sampling events (June and October 2018). To statistically compare groundwater data to GWPS, confidence intervals are constructed for each of the detected Appendix IV parameters in each downgradient well. Those confidence intervals are compared to both the state and federal GWPS. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its GWPS. If there is an exceedance of the established standard, a statistically significant level (SSL) exceedance is identified.

Background limits were used when determining the GWPS under USEPA rule 40 CFR §257.95(h) and Georgia EPD CCR Rule 391-3-4-.10(6)(a). Parametric tolerance limits were used to calculate background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

USEPA revised the federal CCR Rule on July 30, 2018, updating GWPS for cobalt, lead, lithium, and molybdenum. As described in 40 CFR §257.95(h)(1-3), the GWPS is:

- (1) The maximum contaminant level (MCL) established under 40 CFR §141.62 and §141.66 of this title.
- (2) Where an MCL has not been established:
 - (i) Cobalt 0.006 mg/L;
 - (ii) Lead 0.015 mg/L;
 - (iii) Lithium 0.040 mg/L; and
 - (iv) Molybdenum 0.100 mg/L.
- (3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

USEPA's updated GWPS have not yet been incorporated under Georgia EPD's CCR Rule. The Georgia EPD CCR Rule GWPS is:

- (1) The federally established MCL.
- (2) Where an MCL has not been established, the background concentration.
- (3) Background levels for constituents where the background level is higher than the MCL.

Following the above federal and state rule requirements, GWPS have been established for statistical comparison of Appendix IV constituents and are presented in **Table 6**. Additional details are presented in the statistical analysis packages provided in **Appendix B**.

4.2 Statistical Analyses Results

Analytical data from the 2018 semiannual monitoring events in June and October were statistically analyzed in accordance with the Statistical Analysis Method Certification (October 2017). Appendix III statistical analysis was performed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were evaluated to determine if concentrations statistically exceeded the established GWPS.

Based on review of the Appendix III statistical analysis presented in **Table B-1**, Appendix III constituents have not returned to background levels and assessment monitoring should continue pursuant to 40 CFR §257.95(f).

4.2.1 First Semiannual Assessment Monitoring Event

A summary of the Sanitas[™] outputs for the June 2018 assessment event is provided in **Appendix B**. Based on the statistical analysis of Appendix IV parameters as described in Section 4.1.2, the following parameters were found to exceed the GWPS:

AP-1 (Federal CCR Rule):

- Arsenic: HGWC-13;
- Molybdenum: HGWC-8

AP-1 (Georgia EPD CCR Rule):

- Arsenic: HGWC-13;

- Molybdenum: HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13

AP-2 (Federal and Georgia EPD CCR Rules):

- Cobalt: HGWC-15 and HGWC-18

4.2.2 Second Semiannual Assessment Monitoring Event

A summary of the Sanitas[™] outputs for the October 2018 assessment event is provided in **Appendix B**. Based on the statistical analysis of Appendix IV parameters as described in 4.1.2, the following parameters were found to exceed the GWPS:

AP-1 (Federal CCR Rule):

- Arsenic: HGWC-13;
- Molybdenum: HGWC-8

AP-1 (Georgia EPD CCR Rule):

- Arsenic: HGWC-13;
- Molybdenum: HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13

AP-2 (Federal and Georgia EPD CCR Rules):

- Cobalt: HGWC-15 and HGWC-18

Given that the exceedances over GWPS for the October 2018 event match those from the first semiannual assessment monitoring event, assessment monitoring has continued to be implemented at the Site.

In accordance with 40 CFR §257.95(g), a notification identifying SSLs for arsenic and molybdenum was prepared for AP-1 and placed in the facility's Operating Record on November 14, 2018. A similar notification was prepared and recorded for cobalt in AP-2. Pursuant to 40 CFR §257.96, an assessment of corrective measures was initiated for AP-1 and AP-2 on January 13, 2019.

5.0 MONITORING PROGRAM STATUS

In accordance with 40 CFR §257.94(e), assessment monitoring programs were established for both AP-1 and AP-2. SSIs of Appendix III parameters and SSLs of Appendix IV parameters were identified at AP-1 and AP-2 during sampling events conducted in 2018. An assessment of corrective measures was initiated on January 13, 2019, within 90 days of SSL notification in accordance with 40 CFR §257.96.

6.0 CONCLUSIONS & FUTURE ACTIONS

This *2018 Annual Groundwater Monitoring and Corrective Action Report* for GPC's Plant Hammond AP-1 and AP-2 was prepared to fulfill the requirements of USEPA's CCR Rule. Statistical evaluations of the groundwater monitoring data for AP-1 and AP-2 identified SSIs of Appendix III groundwater monitoring parameters above background and SSLs of Appendix IV groundwater monitoring parameters above GWPS.

An assessment of corrective measures was initiated on January 13, 2019, within 90 days of SSL notification in accordance with 40 CFR §257.96. Pursuant to 40 CFR §257.95(b), an initial assessment monitoring event (for Appendix IV parameters) is scheduled to be completed in the first quarter of 2019, with the first semiannual assessment monitoring event tentatively planned for March 2019.

7.0 REFERENCES

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TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft bgs) ⁽²⁾	Screen Interval Length
ASH POND 1 (AP-1)									
<i>Compliance Monitoring Well</i>									
HGWA-1	Upgradient	12/3/2014	1550423.69	1940773.31	595.50	573.40	563.40	32.50	10
HGWA-2	Upgradient	12/2/2015	1549796.40	1939845.20	588.18	570.23	560.23	27.95	10
HGWA-3	Upgradient	12/2/2015	1549793.93	1939833.46	588.06	553.19	543.19	44.87	10
HGWC-7	Downgradient	12/3/2015	1549520.39	1942319.97	579.49	561.32	551.32	28.17	10
HGWC-8	Downgradient	12/8/2015	1549114.34	1942392.75	580.08	563.43	553.43	26.65	10
HGWC-9	Downgradient	12/9/2015	1548692.82	1942215.01	580.60	543.62	533.62	46.98	10
HGWC-10	Downgradient	12/8/2015	1548469.50	1941644.41	579.66	566.66	556.66	23.00	10
HGWC-11	Downgradient	12/15/2015	1548477.54	1941146.65	580.96	565.48	555.48	25.78	10
HGWC-12	Downgradient	12/9/2015	1548475.82	1941152.08	581.01	555.33	545.33	35.68	10
HGWC-13	Downgradient	12/10/2015	1548628.52	1940900.41	594.83	559.76	549.76	45.07	10
<i>Groundwater Level Monitoring Piezometer</i>									
AP1A-1	Upgradient	12/15/2015	1550080.50	1941613.87	587.72	576.17	566.17	21.85	10
MW-1	Upgradient	12/2/2014	1549936.35	1941590.63	588.82	568.10	558.10	31.12	10
MW-5	Downgradient	11/4/2014	1548430.93	1942445.51	581.02	560.60	550.60	30.82	10
MW-6	Downgradient	11/4/2014	1548381.08	1941686.62	581.90	559.30	549.30	33.00	10
MW-7	Downgradient	10/30/2014	1548230.07	1941084.33	577.90	561.50	551.50	26.80	10
MW-8	Downgradient	10/29/2014	1548174.39	1940014.36	587.37	565.50	555.50	32.27	10
MW-19	Downgradient	9/26/2018	1548421.73	1940943.35	580.77	561.20	551.20	26.30	10
MW-20	Downgradient	9/27/2018	1549029.01	1942735.47	579.18	554.82	544.82	31.00	10
MW-24D	Downgradient	11/7/2018	1548637.48	1940900.52	594.67	531.56	521.56	70.00	10
MW-25D	Downgradient	11/6/2018	1548471.80	1941161.62	580.64	527.61	517.61	60.00	10
MW-26D	Downgradient	11/14/2018	1548699.09	1942223.22	580.48	512.57	502.57	75.00	10
MW-27D	Downgradient	11/8/2018	1549103.69	1942391.99	579.74	526.87	516.87	60.10	10
MW-28D	Downgradient	11/13/2018	1549511.13	1942322.32	579.20	531.06	521.06	55.00	10
MW-29	Downgradient	11/13/2018	1549437.24	1942632.41	575.00	556.89	546.89	25.10	10

Table 1
Monitoring Well Network Summary
Plant Hammond, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft bgs) ⁽²⁾	Screen Interval Length
ASH POND 2 (AP-2)									
<i>Compliance Monitoring Well</i>									
HGWA-1	Upgradient	12/3/2014	1550423.69	1940773.31	595.50	573.40	563.40	32.50	10
HGWA-2	Upgradient	12/2/2015	1549796.40	1939845.20	588.18	570.23	560.23	27.95	10
HGWA-3	Upgradient	12/2/2015	1549793.93	1939833.46	588.06	553.19	543.19	44.87	10
HGWA-4	Upgradient	12/3/2014	1549932.76	1939386.17	588.30	572.90	562.90	25.80	10
HGWA-5	Upgradient	12/10/2015	1548632.65	1937183.80	583.52	565.57	555.57	27.95	10
HGWA-6	Upgradient	12/11/2015	1548635.66	1937177.39	583.72	543.20	533.20	50.52	10
HGWC-14	Downgradient	10/16/2014	1548005.66	1938402.95	598.10	565.50	555.50	43.00	10
HGWC-15	Downgradient	10/20/2014	1547882.88	1937851.74	582.50	554.90	544.90	38.00	10
HGWC-16	Downgradient	10/21/2014	1548217.01	1937539.49	581.10	558.40	548.40	33.10	10
HGWC-17	Downgradient	10/22/2014	1548457.24	1937538.67	585.40	568.00	558.00	27.80	10
HGWC-18	Downgradient	10/22/2014	1548827.89	1937559.01	585.30	568.00	558.00	27.80	10
<i>Groundwater Level Monitoring Piezometer</i>									
MW-8	Downgradient	10/29/2014	1548174.39	1940014.36	587.37	565.50	555.50	32.27	10
MW-9	Downgradient	10/29/2014	1548136.52	1938918.59	591.67	569.90	559.90	32.17	10
MW-12	Downgradient	10/21/2014	1547862.70	1937521.75	584.33	556.90	546.90	37.83	10
MW-16	Downgradient	10/27/2014	1549110.61	1937941.31	575.22	563.20	553.20	22.42	10
MW-17	Downgradient	10/28/2014	1549168.15	1938344.56	587.67	569.90	559.90	28.17	10
MW-18	Downgradient	10/29/2014	1548988.42	1938713.61	593.07	571.90	561.90	31.57	10
MW-21D	Downgradient	11/19/2018	1547877.73	1937844.17	581.49	539.89	529.89	49.20	10
MW-22	Downgradient	11/15/2018	1547856.03	1937832.07	578.67	551.09	541.09	35.00	10
MW-23D	Downgradient	11/15/2018	1548814.63	1937556.86	584.00	531.21	521.21	60.00	10

Notes:

ft = feet

AMSL = above mean sea level

bgs = below ground surface

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.

(2) Total well depth accounts for sump if data provided on well construction logs.

Table 2
Groundwater Sampling Event Summary for 2018
Plant Hammond, Floyd County, Georgia

Well ID	Hydraulic Location	Apr 2-4, 2018	Jun 4-7, 2018	Oct 1-5, 2018	Status of Monitoring Well
Purpose of Sampling Event:		App. IV Scan	Assessment	Assessment	
<i>Compliance Monitoring Well Network</i>					
HGWA-1	Upgradient	S01	A01	A02	Assessment
HGWA-2	Upgradient	S01	A01	A02	Assessment
HGWA-3	Upgradient	S01	A01	A02	Assessment
HGWA-4	Upgradient	S01	A01	A02	Assessment
HGWA-5	Upgradient	S01	A01	A02	Assessment
HGWA-6	Upgradient	S01	A01	A02	Assessment
HGWC-7	Downgradient	S01	A01	A02	Assessment
HGWC-8	Downgradient	S01	A01	A02	Assessment
HGWC-9	Downgradient	S01	A01	A02	Assessment
HGWC-10	Downgradient	S01	A01	A02	Assessment
HGWC-11	Downgradient	S01	A01	A02	Assessment
HGWC-12	Downgradient	S01	A01	A02	Assessment
HGWC-13	Downgradient	S01	A01	A02	Assessment
HGWC-14	Downgradient	S01	A01	A02	Assessment
HGWC-15	Downgradient	S01	A01	A02	Assessment
HGWC-16	Downgradient	S01	A01	A02	Assessment
HGWC-17	Downgradient	S01	A01	A02	Assessment
HGWC-18	Downgradient	S01	A01	A02	Assessment

Notes:

S## = Full Appendix IV parameters scan event number

A## = Assessment monitoring event number

Table 3
 Summary of Groundwater Elevations
 Plant Hammond, Floyd County, Georgia

Well ID	Top of Casing Elevation (ft AMSL)	Apr 2, 2018		Jun 4, 2018		Oct 1, 2018	
		Depth to Water (ft BTOC)	Groundwater Elevations (ft AMSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft AMSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft AMSL)
Compliance Monitoring Well Network							
HGWA-1	595.50	10.28	585.22	16.34	579.16	15.52	579.98
HGWA-2	588.18	5.46	582.72	6.42	581.76	7.44	580.74
HGWA-3	588.06	5.07	582.99	6.25	581.81	7.23	580.83
HGWA-4	588.30	5.07	583.23	6.60	581.70	6.20	582.10
HGWA-5	583.52	4.53	578.99	6.00	577.52	6.42	577.10
HGWA-6	583.72	3.83	579.89	5.61	578.11	6.11	577.61
HGWC-7	579.49	4.19	575.30	4.23	575.26	4.00	575.49
HGWC-8	580.08	3.12	576.96	2.99	577.09	3.02	577.06
HGWC-9	580.60	12.93	567.67	10.67	569.93	12.95	567.65
HGWC-10	579.66	12.35	567.31	10.79	568.87	12.04	567.62
HGWC-11	580.96	14.06	566.90	11.40	569.56	14.07	566.89
HGWC-12	581.01	14.20	566.81	11.50	569.51	14.20	566.81
HGWC-13	594.83	17.70	577.13	16.76	578.07	17.22	577.61
HGWC-14	598.10	24.10	574.00	23.84	574.26	24.32	573.78
HGWC-15	582.50	15.32	567.18	13.85	568.65	15.22	567.28
HGWC-16	581.10	10.60	570.50	9.49	571.61	10.77	570.33
HGWC-17	585.40	16.54	568.86	15.72	569.68	17.40	568.00
HGWC-18	585.30	16.67	568.63	16.05	569.25	17.78	567.52
Groundwater Level Monitoring Piezometer							
AP1A-1	587.72	6.36	581.36	7.99	579.73	7.11	580.61
MW-1	588.82	7.60	581.22	8.85	579.97	8.02	580.80
MW-5	581.02	15.97	565.05	13.40	567.62	16.07	564.95
MW-6	581.90	16.00	565.90	13.67	568.23	16.00	565.90
MW-7	577.90	12.91	564.99	9.61	568.29	13.06	564.84
MW-8	587.37	18.70	568.67	18.06	569.31	18.72	568.65
MW-9	591.67	11.76	579.91	11.75	579.92	--	--
MW-12	584.33	17.92	566.41	15.75	568.58	18.33	566.00
MW-16	575.22	4.75	570.47	5.87	569.35	6.62	568.60
MW-17	587.67	8.57	579.10	9.24	578.43	8.30	579.37
MW-18	593.07	9.41	583.66	9.48	583.59	9.50	583.57
Surface Water Gauge (ft AMSL)							
AP-1	--	--	--	--	584.7	--	584.5
Coosa River	--	--	--	--	567.8	--	564.8

Notes:
 -- = not measured or not applicable
 ft = feet
 ft AMSL = feet above mean sea level
 ft BTOC = feet below top of casing

Table 4
Groundwater Flow Velocity Calculations for 2018
Plant Hammond, Floyd County, Georgia

Flow Path Direction ⁽¹⁾	Apr 2, 2018				Jun 4, 2018				Oct 1, 2018				Average $\Delta h/\Delta l$ (ft/ft)
	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	
AP-1													
Southerly Flow Path	578	565.90	260	0.047	584.7	568.23	300	0.055	584.5	565.90	300	0.062	0.054
Easterly Flow Path	578	568	400	0.025	584.7	570	345	0.043	584.5	570	465	0.031	0.033
AP-2													
Southwesterly Flow Path	582	570	1,150	0.010	582	570	1,040	0.012	583.57	570	1,175	0.012	0.011

Flow Path Direction ⁽¹⁾	Averaged for 2018			
	K (ft/d)	n	$\Delta h/\Delta l$ (ft/ft)	V (ft/d)
AP-1				
Southerly Flow Path	11.82	0.15	0.054	4.3
Easterly Flow Path	11.82	0.15	0.033	2.6
AP-2				
Southwesterly Flow Path	0.47	0.15	0.011	0.035

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

ft/yr = feet per year

h_1, h_2 = point of interpreted groundwater elevation

$\Delta h/\Delta l$ = hydraulic gradient

K = hydraulic conductivity

Δl = distance between location 1 and 2

n = effective porosity

V = groundwater flow velocity

(1) Flow path direction relative to the orientation of AP-1 and AP-2 and illustrated on Figures 3, 4, and 5 of associated report.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-1	HGWA-1	HGWA-2	HGWA-2	HGWA-2	HGWA-3	HGWA-3	HGWA-3	
Sample Date:	4/2/2018	6/4/2018	10/1/2018	4/2/2018	6/4/2018	10/1/2018	4/3/2018	6/4/2018	10/1/2018	
Parameter ^(1,2)										
APPENDIX III	Boron	--	ND (0.020 J)	ND (0.013 J)	--	ND (0.036 J)	ND (0.035 J)	--	ND (0.017 J)	ND (0.0061 J)
	Calcium	--	124	108	--	19.1	ND (20.5 J)	--	73.4	80.9
	Chloride	--	13.1	6.6	--	6.1	6.4	--	6.3	6.4
	Fluoride	ND	ND (0.074 J)	ND	ND	ND	ND	ND	ND	ND
	pH ⁽³⁾	--	7.06	7.09	--	5.27	5.31	--	7.38	7.13
	Sulfate	--	71.8	49.1	--	47.8	48.1	--	ND (46.6 J)	48.6
	TDS	--	415	354	--	140	135	--	266	291
APPENDIX IV	Antimony	ND	--	--	ND	--	--	ND	--	--
	Arsenic	ND	ND	ND	ND	ND (0.00088 J)	ND	ND	ND (0.00080 J)	ND (0.0011 J)
	Barium	0.026	0.035	0.029	0.099	0.11	0.11	ND (0.11 J)	0.12	0.14
	Beryllium	ND	--	--	ND	--	--	ND	--	--
	Cadmium	ND	ND	ND	ND	ND (0.00014 J)	ND	ND	ND	ND
	Chromium	ND	--	--	ND	--	--	ND	--	--
	Cobalt	ND	ND	ND	0.019	0.025	0.026	ND	ND	ND
	Lead	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND	ND (0.0010 J)	ND (0.00099 J)	ND (0.0015 J)	ND (0.0016 J)	ND (0.0013 J)	ND (0.0030 J)	ND (0.0027 J)	ND (0.0032 J)
	Mercury	ND	--	--	ND	--	--	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Comb. Radium 226/228	0.405 U	1.13 U	0.132 U	0.761 U	0.975 U	0.434 U	0.684 U	0.0291 U	0.781 U
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

ND = Indicates the parameter was not detected above the analytical MDL

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical MDL (Specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and total radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Floyd County, Georgia

Well ID:		HGWA-4	HGWA-4	HGWA-4	HGWA-5	HGWA-5	HGWA-5	HGWA-6	HGWA-6	HGWA-6
Sample Date:		4/2/2018	6/4/2018	10/1/2018	4/3/2018	6/5/2018	10/2/2018	4/3/2018	6/5/2018	10/2/2018
Parameter ^(1,2)										
APPENDIX III	Boron	--	ND (0.014 J)	ND (0.0093 J)	--	ND (0.0066 J)	ND (0.0081 J)	--	ND (0.016 J)	ND (0.014 J)
	Calcium	--	81.9	ND (22.0 J)	--	27.8	28.9	--	54.5	54.7
	Chloride	--	4.5	3.8	--	1.6	2.4	--	1.2	1.7
	Fluoride	ND	ND (0.097 J)	ND	ND	ND (0.083 J)	ND	ND	ND (0.055 J)	ND (0.076 J)
	pH ⁽³⁾	--	6.82	5.73	--	6.44	6.35	--	7.37	7.36
	Sulfate	--	ND (4.9 J)	ND (0.59 J)	--	22.9	20.3	--	38.0	ND (38.5 J)
	TDS	--	240	106	--	152	146	--	235	228
APPENDIX IV	Antimony	ND	--	--	ND	--	--	ND	--	--
	Arsenic	ND	ND	ND	ND	ND	ND (0.00064 J)	ND	ND	ND
	Barium	0.022	0.027	0.018	ND (0.038 J)	0.046	0.047	ND (0.14 J)	0.21	0.19
	Beryllium	ND	--	--	ND	--	--	ND	--	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	ND	--	--	ND	--	--	ND	--	--
	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Lead	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND	ND (0.00097 J)	ND	ND (0.0033 J)	ND (0.0034 J)	ND (0.0035 J)	ND (0.012 J)	ND (0.011 J)	ND (0.010 J)
	Mercury	ND	--	--	ND	--	--	ND	--	--
	Molybdenum	ND	--	--	ND	--	--	ND	--	--
	Comb. Radium 226/228	0.371 U	0.622 U	0.132 U	0.858 U	0.767 U	0.489 U	0.828 U	0.424 U	0.643 U
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Floyd County, Georgia

Well ID:	HGWC-7	HGWC-7	HGWC-7	HGWC-8	HGWC-8	HGWC-8	HGWC-9	HGWC-9	HGWC-9	
Sample Date:	4/3/2018	6/5/2018	10/2/2018	4/3/2018	6/6/2018	10/2/2018	4/3/2018	6/6/2018	10/2/2018	
Parameter ^(1,2)										
APPENDIX III	Boron	--	0.86	0.98	--	2.6	2.7	--	2.3	2.5
	Calcium	--	99.8	108	--	127	118	--	184	173
	Chloride	--	52.3	52.6	--	44.8	89.4	--	138	142
	Fluoride	ND	ND (0.099 J)	ND	0.39	0.46	0.51	ND	ND (0.12 J)	ND (0.031 J)
	pH ⁽³⁾	--	7.13	7.12	--	6.9	6.9	--	7.02	7.05
	Sulfate	--	117	120	--	ND (190 J)	193	--	ND (214 J)	218
	TDS	--	459	426	--	611	597	--	810	693
APPENDIX IV	Antimony	ND	--	--	ND	--	--	ND	--	--
	Arsenic	ND	ND	ND (0.0019 J)	ND	ND	ND	ND	ND	ND
	Barium	ND (0.075 J)	0.071	0.078	ND (0.065 J)	0.063	0.061	ND (0.10 J)	0.11	0.11
	Beryllium	ND	--	--	ND	--	--	ND	--	--
	Cadmium	ND	--	--	ND	--	--	ND	--	--
	Chromium	ND	--	--	ND	--	--	ND	--	--
	Cobalt	ND	ND (0.00074 J)	ND (0.00091 J)	ND	ND (0.0017 J)	ND (0.0016 J)	ND	ND (0.00056 J)	ND
	Lead	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND (0.0023 J)	ND (0.0022 J)	ND (0.0030 J)	ND (0.0025 J)	ND (0.0023 J)	ND (0.0025 J)	ND (0.0043 J)	ND (0.0043 J)	ND (0.0040 J)
	Mercury	ND	--	--	ND	--	--	ND	--	--
	Molybdenum	0.032	0.036	0.039	0.44	0.49	0.47	0.025	0.027	0.028
	Comb. Radium 226/228	0.538 U	0.985 U	0.837 U	0.311 U	0.896 U	1.21 J	0.732 U	0.813 U	0.610 U
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Floyd County, Georgia

Well ID:		HGWC-10	HGWC-10	HGWC-10	HGWC-11	HGWC-11	HGWC-11	HGWC-12	HGWC-12	HGWC-12
Sample Date:		4/4/2018	6/5/2018	10/2/2018	4/4/2018	6/5/2018	10/3/2018	4/4/2018	6/6/2018	10/3/2018
Parameter ^(1,2)										
APPENDIX III	Boron	--	1.2	0.62	--	1.3	0.91	--	2.5	2.3
	Calcium	--	167	144	--	113	89.0	--	136	125
	Chloride	--	66.6	48.3	--	56.1	24.8	--	46.4	88.4
	Fluoride	ND	ND	ND (0.17 J)	0.39	ND (0.24 J)	0.31	ND	ND (0.21 J)	ND (0.15 J)
	pH ⁽³⁾	--	6.65	6.55	--	6.27	5.97	--	7.12	7.08
	Sulfate	--	205	178	--	204	233	--	162	191
	TDS	--	679	572	--	489	449	--	535	607
APPENDIX IV	Antimony	ND	--	--	ND	--	--	ND	--	--
	Arsenic	ND	ND	ND	ND	ND (0.0012 J)	ND	ND	ND (0.0048 J)	ND (0.0037 J)
	Barium	0.084	0.086	0.076	0.029	0.039	0.033	0.083	0.090	0.087
	Beryllium	ND	--	--	ND	--	--	ND	--	--
	Cadmium	ND	--	--	ND	--	--	ND	--	--
	Chromium	ND	--	--	ND	--	--	ND	--	--
	Cobalt	ND	ND	ND	ND	ND (0.00061 J)	ND	ND	ND (0.0012 J)	ND (0.0011 J)
	Lead	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND	ND	ND	ND	ND	ND	ND (0.0080 J)	ND (0.0095 J)	ND (0.0083 J)
	Mercury	ND	--	--	ND	--	--	ND	--	--
	Molybdenum	ND	ND	ND	0.013	0.029	0.020	0.052	0.054	0.054
	Comb. Radium 226/228	0.715 U	0.718 U	0.948 J	1.50 J	0.549 U	1.48 J	0.956 U	0.424 U	0.570 U
	Selenium	ND	ND	ND (0.0023 J)	0.021	ND (0.0062 J)	ND (0.0090 J)	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Floyd County, Georgia

Well ID:		HGWC-13	HGWC-13	HGWC-13	HGWC-14	HGWC-14	HGWC-14	HGWC-15	HGWC-15	HGWC-15
Sample Date:		4/4/2018	6/5/2018	10/5/2018	4/4/2018	6/6/2018	10/3/2018	4/3/2018	6/6/2018	10/3/2018
Parameter ^(1,2)										
APPENDIX III	Boron	--	1.3	1.6	--	16.7	ND (16.4 J)	--	2.4	ND (2.4 J)
	Calcium	--	110	73.6	--	606	558	--	250	234
	Chloride	--	72.3	32.3	--	357	368	--	196	200
	Fluoride	0.65	0.47	0.77	ND	ND (0.25 J)	ND (0.21 J)	ND	ND (0.17 J)	ND
	pH ⁽³⁾	--	7.2	7.24	--	4.49	4.67	--	6.12	5.92
	Sulfate	--	187	78.3	--	ND (1520 J)	1550	--	ND (469 J)	600
	TDS	--	528	322	--	2620	2430	--	1120	1140
APPENDIX IV	Antimony	ND	--	--	ND	--	--	ND	--	--
	Arsenic	0.49	0.38	0.34	0.0052	0.0059	ND (0.0032 J)	ND	ND	ND
	Barium	0.099	0.13	0.076	0.021	0.022	0.020	ND (0.019 J)	0.022	0.025
	Beryllium	ND	--	--	ND	--	--	ND	--	--
	Cadmium	ND	--	--	ND	ND (0.00012 J)	ND (0.00010 J)	0.0022	0.0021	0.0026
	Chromium	ND	--	--	ND	--	--	ND	--	--
	Cobalt	ND	ND (0.0023 J)	ND (0.0015 J)	0.025	0.027	0.023	0.032	0.032	0.051
	Lead	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND (0.031 J)	ND (0.031 J)	ND (0.027 J)	ND	ND	ND	ND (0.0026 J)	ND (0.0013 J)	ND (0.0017 J)
	Mercury	ND	--	--	ND	--	--	ND	--	--
	Molybdenum	0.027	0.027	0.033	ND	--	--	ND	--	--
	Comb. Radium 226/228	0.882 U	1.10 U	0.558 U	1.72 J	1.31 U	1.48 J	0.384 U	1.32 U	0.858 U
	Selenium	ND	ND	ND	0.012	0.014	ND (0.0056 J)	ND	ND	ND
Thallium	ND (0.00032 J)	ND (0.00035 J)	ND (0.00025 J)	ND (0.00028 J)	ND (0.00029 J)	ND (0.00029 J)	ND	ND	ND	

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Floyd County, Georgia

Well ID:		HGWC-16	HGWC-16	HGWC-16	HGWC-17	HGWC-17	HGWC-17	HGWC-18	HGWC-18	HGWC-18
Sample Date:		4/3/2018	6/6/2018	10/3/2018	4/3/2018	6/6/2018	10/3/2018	4/3/2018	6/5/2018	10/3/2018
Parameter ^(1,2)										
APPENDIX III	Boron	--	1.9	ND (1.7 J)	--	6.3	ND (6.9 J)	--	8.4	9.3
	Calcium	--	177	160	--	299	286	--	425	421
	Chloride	--	50.6	49.9	--	166	193	--	261	302
	Fluoride	ND	ND	ND	ND	ND (0.23 J)	ND	0.33	0.66	0.32
	pH ⁽³⁾	--	7	6.94	--	6.22	6.23	--	4.57	4.41
	Sulfate	--	233	215	--	ND (520 J)	651	--	962	1170
	TDS	--	678	700	--	1180	1250	--	1880	2180
APPENDIX IV	Antimony	ND	--	--	ND	--	--	ND	--	--
	Arsenic	ND	ND	ND	ND	ND (0.00097 J)	ND	0.0062	0.0080	ND (0.0039 J)
	Barium	ND (0.099 J)	0.11	0.11	ND (0.025 J)	0.028	0.028	ND (0.028 J)	0.030	0.032
	Beryllium	ND	--	--	ND	--	--	ND	--	--
	Cadmium	ND	ND	ND	ND	ND	ND	0.0022	0.0022	0.0027
	Chromium	ND	--	--	ND	--	--	ND	--	--
	Cobalt	ND	ND	ND	0.016	0.018	0.016	0.19	0.19	0.19
	Lead	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND (0.0028 J)	ND (0.0031 J)	ND (0.0026 J)	ND	ND	ND	ND (0.013 J)	ND (0.013 J)	ND (0.015 J)
	Mercury	ND	--	--	ND	--	--	ND	--	--
	Molybdenum	ND	--	--	ND	--	--	ND	--	--
	Comb. Radium 226/228	0.783 U	0.595 U	1.03 U	0.409 U	0.772 U	1.08 U	2.53 J	1.91	2.22 J
	Selenium	ND	ND	ND	ND	ND	ND	0.029	0.038	0.017
Thallium	ND	ND	ND	ND	ND	ND	ND (0.00014 J)	ND (0.00016 J)	ND	

Table 6
Summary of Background Levels and Groundwater Protection Standards
Plant Hammond, Floyd County, Georgia

ASH POND 1 (AP-1)				
Analyte	Units	Background⁽¹⁾	Federal GWPS⁽²⁾	State GWPS⁽³⁾
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.13; 0.14	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.001	0.005	0.005
Chromium	mg/L	0.01	0.1	0.1
Cobalt	mg/L	0.029	0.029	0.029
Fluoride	mg/L	0.26; 0.36	4	4
Lead	mg/L	0.005	0.015 ⁽⁴⁾	0.005
Lithium	mg/L	Federal 0.025 ⁽⁵⁾ State 0.05	0.04	0.05
Mercury	mg/L	0.0005	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	1.40; 1.38	5	5
ASH POND 2 (AP-2)				
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.21	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.001	0.005	0.005
Chromium	mg/L	0.01	0.1	0.1
Cobalt	mg/L	0.029	0.029	0.029
Fluoride	mg/L	0.36	4	4
Lead	mg/L	0.005	0.015 ⁽⁴⁾	0.005
Lithium	mg/L	Federal 0.025 ⁽⁵⁾ State 0.05	0.04	0.05
Mercury	mg/L	0.0005	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	2.42	5	5

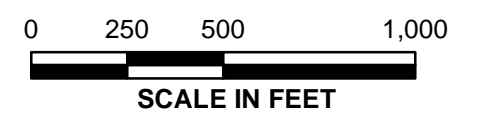
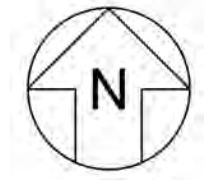
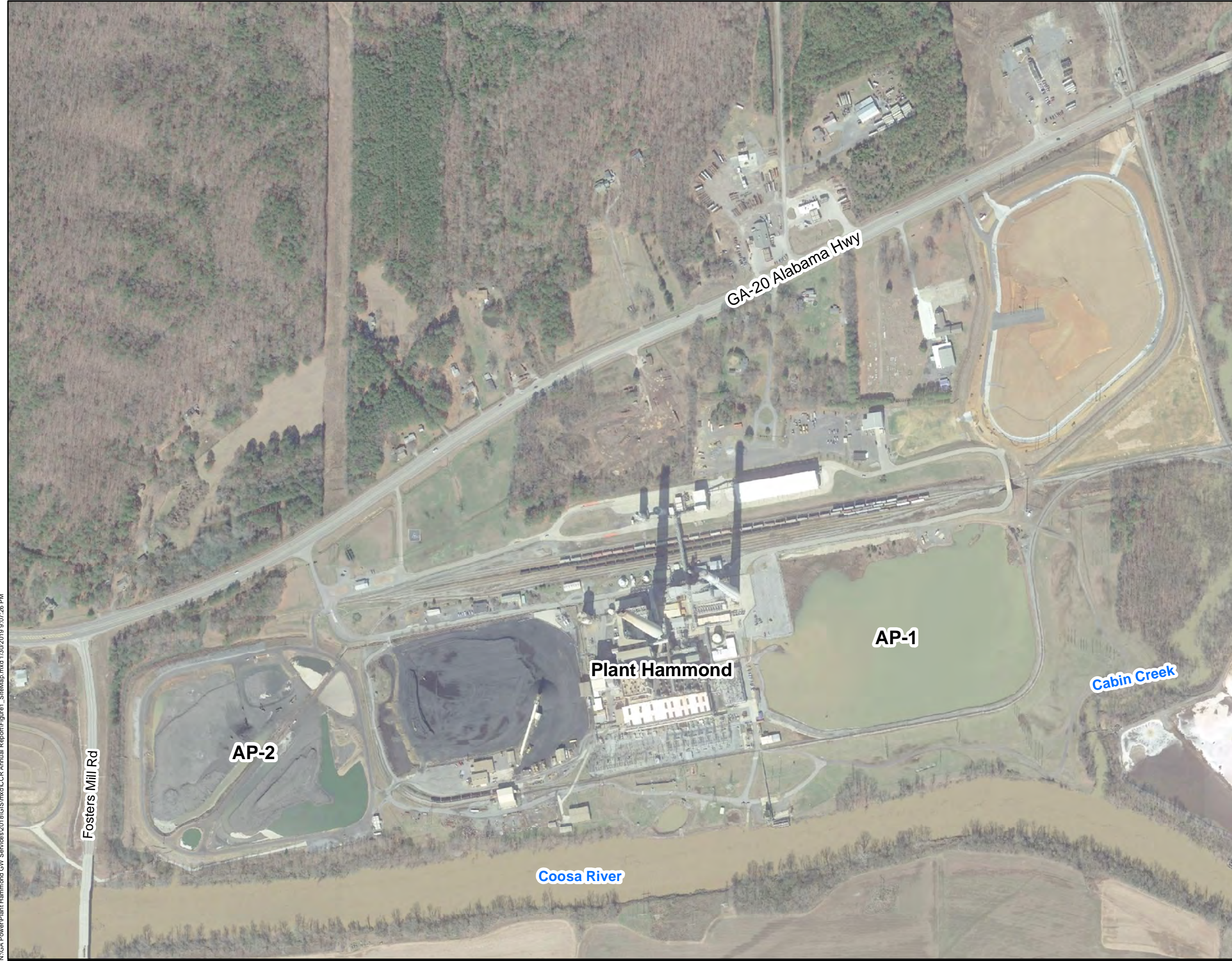
Notes:

"mg/L" = milligrams per liter

"pCi/L" = picocuries per liter

- The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a). Where two numbers are present, they denote the different background levels for each of the two semiannual monitoring events in the order that they were determined.
- Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under §§141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS or regional screen level (RSL) is used; or (iii) background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.
- Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL.
- Currently, there is no Environmental Protection Agency (EPA) MCL established for lead. The value listed as GWPS is the established EPA Action Level for drinking water.
- The background TL used to evaluate GWPS for this analyte equals half the laboratory specified reporting limit (RL). Per the SAP, and in accordance with the Unified Guidance, a non-parametric tolerance limit approach was used since the data set contained greater than 50% non-detect (ND) results for this analyte. Under this approach, the TL equals the highest value reported, for which is the laboratory RL. Since a RL may be influenced due to sample matrix interference at the time of analysis, half the RL was applied in this select case.

FIGURES



SITE LOCATION MAP

GEORGIA POWER COMPANY
 PLANT HAMMOND AP-1 AND AP-2
 ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

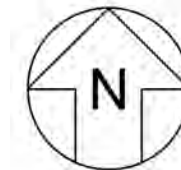
Prepared By:  Geosyntec
 consultants

KENNESAW, GA

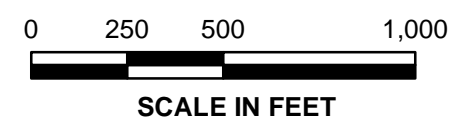
JANUARY 2019

FIGURE
1

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\CCR Annual Report\Figure1_SiteMap.mxd 1/30/2019 9:07:26 PM



- LEGEND**
- ⊕ Compliance Monitoring Well
 - ⊕ Groundwater Level Monitoring Piezometer



MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1 AND AP-2
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

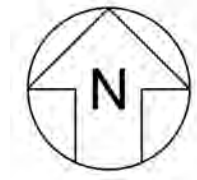
Prepared By: Geosyntec
consultants

KENNESAW, GA JANUARY 2019

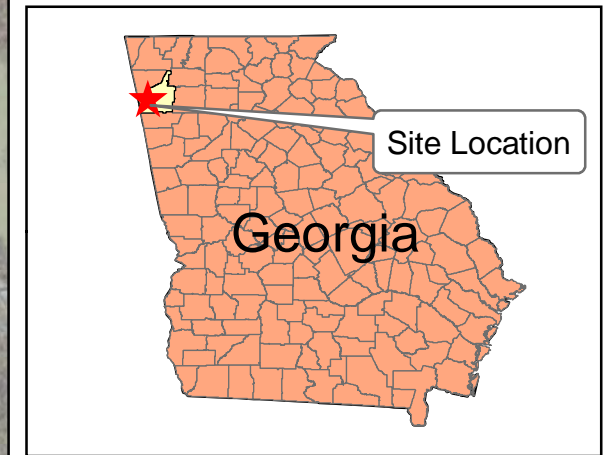
FIGURE
2

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\CCR Annual Report\Figure2_WellMap.mxd 1/30/2019 9:08:15 PM

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\CCR Annual Report\Figure3_POTmap-Apr2018.mxd 1/30/2019 9:08:51 PM



- LEGEND**
- + Compliance Monitoring Well (Groundwater Elevation, ft AMSL)
 - + Groundwater Level Monitoring Piezometer (Groundwater Elevation, ft AMSL)
 - Groundwater Elevation Iso-Contour (Inferred where dashed)
 - Approximate Groundwater Flow Direction



Notes:
 1. Water level elevation recorded on April 2, 2018.
 Elevation provided in feet above mean sea level (ft AMSL), North American Vertical Datum (NAVD) 88.
 2. The staff gauge and river gauge measurements were not recorded for this event.

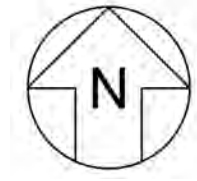


POTENTIOMETRIC SURFACE CONTOUR MAP - APRIL 2018
 GEORGIA POWER COMPANY
 PLANT HAMMOND AP-1 AND AP-2
 ROME, FLOYD COUNTY, GEORGIA

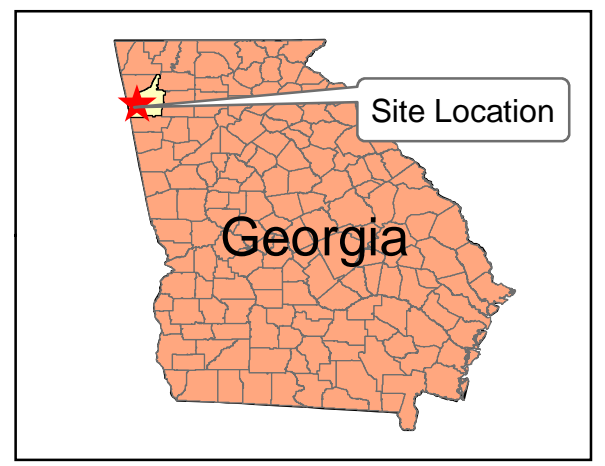
Prepared For: Georgia Power
 Prepared By: Geosyntec consultants
 KENNESAW, GA JANUARY 2019

FIGURE 3

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\CCR Annual Report\Figure4_POTmap-Jun2018.mxd 1/30/2019 9:09:32 PM



- LEGEND**
- + Compliance Monitoring Well (Groundwater Elevation, ft AMSL)
 - + Groundwater Level Monitoring Piezometer (Groundwater Elevation, ft AMSL)
 - Surface Water Staff Gauge (Elevation, ft AMSL)
 - Groundwater Elevation Iso-Contour (inferred where dashed)
 - Approximate Groundwater Flow Direction



Note:
 1. Water level elevation recorded on June 4, 2018.
 Elevation provided in feet above mean sea level (ft AMSL), North American Vertical Datum (NAVD) 88.



**POTENTIOMETRIC SURFACE CONTOUR
 MAP - JUNE 2018**

GEORGIA POWER COMPANY
 PLANT HAMMOND AP-1 AND AP-2
 ROME, FLOYD COUNTY, GEORGIA

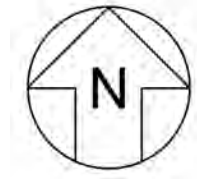
Prepared For: Georgia Power

Prepared By: Geosyntec
 consultants

KENNESAW, GA JANUARY 2019

**FIGURE
 4**

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\CCR Annual Report\Figure5_POTmap-Oct2018.mxd 1/30/2019 9:10:03 PM



- LEGEND**
- + Compliance Monitoring Well (Groundwater Elevation, ft AMSL)
 - + Groundwater Level Monitoring Piezometer (Groundwater Elevation, ft AMSL)
 - Surface Water Staff Gauge (Elevation, ft AMSL)
 - Groundwater Elevation Iso-Contour (inferred where dashed)
 - Approximate Groundwater Flow Direction



Note:
 1. Water level elevation recorded on October 1, 2018.
 Elevation provided in feet above mean sea level (ft AMSL), North American Vertical Datum (NAVD) 88.



**POTENTIOMETRIC SURFACE CONTOUR
 MAP - OCTOBER 2018**

GEORGIA POWER COMPANY
 PLANT HAMMOND AP-1 AND AP-2
 ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec
 consultants

KENNESAW, GA JANUARY 2019

**FIGURE
 5**

APPENDIX A

Laboratory Analytical and Field Sampling Reports

Appendix A1: Laboratory Analytical Data Packages and Data
Validation Reports

Appendix A2: Field Data Sheets

APPENDIX A1

Laboratory Analytical Data Packages and Data Validation Reports

Laboratory Reports

February 28, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP
Pace Project No.: 262113

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 21, 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.

REV02282018_Report revised to correct previously-reported errant data.

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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power - Coal Combustion Residuals
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 262113

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: Plant Hammond AP

Pace Project No.: 262113

Lab ID	Sample ID	Matrix	Date Collected	Date Received
262113001	MW7-022118	Water	02/21/18 12:40	02/21/18 16:30
262113002	EB01-022118	Water	02/21/18 12:50	02/21/18 16:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 262113

Lab ID	Sample ID	Method	Analysts	Analytes Reported
262113001	MW7-022118	EPA 6020B	CSW	1
262113002	EB01-022118	EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 262113

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW7-022118									
Lab ID: 262113001									
Collected: 02/21/18 12:40 Received: 02/21/18 16:30 Matrix: Water									
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	ND	ug/L	5.0	0.52	1	02/27/18 12:45	02/27/18 15:15	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 262113

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: EB01-022118									
Lab ID: 262113002									
Collected: 02/21/18 12:50 Received: 02/21/18 16:30 Matrix: Water									
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	ND	ug/L	5.0	0.52	1	02/27/18 12:45	02/27/18 15:38	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 262113

QC Batch: 1626	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
Associated Lab Samples: 262113001, 262113002	

METHOD BLANK: 9544 Matrix: Water

Associated Lab Samples: 262113001, 262113002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	0.52	02/27/18 15:03	

LABORATORY CONTROL SAMPLE: 9545

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	102	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 9550 9551

Parameter	Units	262113001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	100	100	103	101	103	101	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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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 262113

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 262113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
262113001	MW7-022118	EPA 3005A	1626	EPA 6020B	1716
262113002	EB01-022118	EPA 3005A	1626	EPA 6020B	1716

REPORT OF LABORATORY ANALYSIS

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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.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: 2/26/18

Section B
 Required Project Information:
 Report To: Joju Abraham / Lauren Petty
 Copy To: Geesyntec
 Purchase Order #: SCS10348606
 Project Name: Georgia Power - Plant Hammond
 Project #: 6-06581

Section C
 Invoice Information:
 Attention: Lauren Petty
 Company Name: Southern Company Services
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327

Page: 1 Of 1
WO#: 262113

ITEM #	MATRIX	MATRIX CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION		DATE		ACCEPTED BY / AFFILIATION	DATE		SAMPLE CONDITIONS	Received on	Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
			START	END			DATE	TIME	DATE	TIME		DATE	TIME							
1	Drinking Water	DM	2/21/18	12:40	G	NTG	2/21/18	12:40	2/21/18	14:50	Mike Nguyen, Pace	2/21/18	14:50							
2	Waste Water	WW	2/21/18	12:50	G	NTG	2/21/18	12:50	2/21/18	16:30	Charles Hank	2/21/18	16:30	Y						
3	Water	W																		
4	Waste Water	WW																		
5	Product	P																		
6	Oil	O																		
7	Wipe	WIP																		
8	Air	AR																		
9	Other	OT																		
10	Tissue	TS																		
11																				
12																				

ADDITIONAL COMMENTS: * 72-hr TAT Requested

Requested Analysis:
 Residual Chlorine (Y/N)
 Metals (As only) Y/N
 Preservatives: H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other

TEMP in C: _____
 DATE Signed: 2/21/18
 SIGNATURE of SAMPLER: Whitney Law
 SIGNATURE of SAMPLER: [Signature]

Sample Condition Upon Receipt

WO#: 262113

PM: BM

Due Date: 02/26/18

CLIENT: GAPower-CCR

Face Analytical

Client Name: GAPower

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 23°C
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 2/21/18 (GJ)

		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 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 type="checkbox"/> No <input type="checkbox"/> N/A	7. <u>3 day TAT</u>
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)

April 25, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

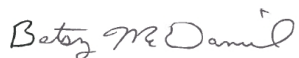
RE: Project: Plant Hammond AP
Pace Project No.: 263497

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 263497

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
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
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 Hammond AP
Pace Project No.: 263497

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263497001	HGWA-1	Water	04/02/18 19:10	04/03/18 12:00
263497002	HGWA-1	Water	04/02/18 19:10	04/03/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 263497

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263497001	HGWA-1	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263497002	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263497

Sample: HGWA-1		Lab ID: 263497001		Collected: 04/02/18 19:10		Received: 04/03/18 12:00		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							
Antimony	ND	mg/L	0.0030	0.00078	1	04/04/18 10:34	04/05/18 17:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/04/18 10:34	04/05/18 17:01	7440-38-2	
Barium	0.026	mg/L	0.010	0.00078	1	04/04/18 10:34	04/05/18 17:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/04/18 10:34	04/05/18 17:01	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/04/18 10:34	04/05/18 17:01	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/04/18 10:34	04/05/18 17:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/04/18 10:34	04/05/18 17:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/04/18 10:34	04/05/18 17:01	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/04/18 10:34	04/05/18 17:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/04/18 10:34	04/05/18 17:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/04/18 10:34	04/05/18 17:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/04/18 10:34	04/05/18 17:01	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 12:56	04/09/18 16:45	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		04/09/18 21:27	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263497

QC Batch: 3613 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 263497001

METHOD BLANK: 18417 Matrix: Water
Associated Lab Samples: 263497001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/09/18 15:49	

LABORATORY CONTROL SAMPLE: 18418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20088 20089

Parameter	Units	263498003 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	.0025	.0025	0.0022	0.0021	88	85	75-125	3	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263497

QC Batch: 3707 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 263497001

METHOD BLANK: 18765 Matrix: Water
Associated Lab Samples: 263497001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/05/18 14:10	
Arsenic	mg/L	ND	0.0050	0.00057	04/05/18 14:10	
Barium	mg/L	ND	0.010	0.00078	04/05/18 14:10	
Beryllium	mg/L	ND	0.0030	0.000050	04/05/18 14:10	
Cadmium	mg/L	ND	0.0010	0.000093	04/05/18 14:10	
Chromium	mg/L	ND	0.010	0.0016	04/05/18 14:10	
Cobalt	mg/L	ND	0.010	0.00052	04/05/18 14:10	
Lead	mg/L	ND	0.0050	0.00027	04/05/18 14:10	
Lithium	mg/L	ND	0.050	0.00097	04/05/18 14:10	
Molybdenum	mg/L	ND	0.010	0.0019	04/05/18 14:10	
Selenium	mg/L	ND	0.010	0.0014	04/05/18 14:10	
Thallium	mg/L	ND	0.0010	0.00014	04/05/18 14:10	

LABORATORY CONTROL SAMPLE: 18766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	100	80-120	
Arsenic	mg/L	.1	0.096	96	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 18767 18768

Parameter	Units	263448001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Antimony	mg/L	ND	.1	.1	0.098	0.097	98	96	75-125	1	20	
Arsenic	mg/L	0.00060J	.1	.1	0.096	0.096	96	96	75-125	0	20	
Barium	mg/L	ND	.1	.1	0.11	0.10	98	96	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.097	0.094	97	94	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.098	0.096	98	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263497

Parameter	Units	18767		18768		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		263448001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Chromium	mg/L	ND	.1	.1	0.097	0.095	97	95	75-125	3	20	
Cobalt	mg/L	ND	.1	.1	0.098	0.095	98	95	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.098	0.095	98	95	75-125	4	20	
Lithium	mg/L	0.0058J	.1	.1	0.10	0.099	97	93	75-125	4	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.099	100	97	75-125	2	20	
Selenium	mg/L	ND	.1	.1	0.099	0.097	99	97	75-125	2	20	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	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.

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263497

QC Batch: 4030

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 263497001

METHOD BLANK: 20183

Matrix: Water

Associated Lab Samples: 263497001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/09/18 20:46	

LABORATORY CONTROL SAMPLE: 20184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20185

20186

Parameter	Units	263497001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	10.4	10.6	104	106	90-110	2	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263497

Sample: HGWA-1 **Lab ID: 263497002** Collected: 04/02/18 19:10 Received: 04/03/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.281 ± 0.113 (0.155) C:87% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	0.124 ± 0.357 (0.802) C:75% T:77%	pCi/L	04/20/18 11:37	15262-20-1	
Total Radium	Total Radium Calculation	0.405 ± 0.470 (0.957)	pCi/L	04/25/18 11:20	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263497

QC Batch: 294196

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 263497002

METHOD BLANK: 1440643

Matrix: Water

Associated Lab Samples: 263497002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0447 ± 0.264 (0.636) C:75% T:85%	pCi/L	04/20/18 11:37	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263497

QC Batch: 294194

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 263497002

METHOD BLANK: 1440635

Matrix: Water

Associated Lab Samples: 263497002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.260 ± 0.105 (0.126) C:91% T:NA	pCi/L	04/18/18 19:04	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 263497

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 263497

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263497001	HGWA-1	EPA 3005A	3707	EPA 6020B	3818
263497001	HGWA-1	EPA 7470A	3613	EPA 7470A	3998
263497002	HGWA-1	EPA 9315	294194		
263497002	HGWA-1	EPA 9320	294196		
263497002	HGWA-1	Total Radium Calculation	295904		
263497001	HGWA-1	EPA 300.0	4030		

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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.

Section A

Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road, Atlanta, GA 30338
 Email: jbraham@southernco.com
 Phone: (404)506-7238
 Requested Due Date: 4/13/18

Required Project Information:
 Report To: Jojo Abraham / Laura N. Pethy
 Copy To: Gregory Consultants
 Purchase Order #: TAT 5-day
 Project Name: Plant Hammond AP
 Project #: 44-17318

Invoice Information:
 Attention: SCAnalytics@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@paceclabs.com
 Pace Profile #: 327

Regulatory Agency:
 State / Location: GA

Section B

MATRIX CODE
 DW Drinking Water
 WW Waste Water
 P Product
 SL Solid
 WP Wipe
 AR Air
 OT Other
 TS Tissue

SAMPLE ID
 One Character per box.
 (A-Z, 0-9, -,)
 Sample IDs must be unique

MATRIX CODE (see valid codes to left)
 WTC
 H1
 3

SAMPLE TYPE (G=GRAB C=COMP)
 G

COLLECTED
 START DATE TIME: 04/02/18 19:42
 END DATE TIME: 04/02/18 21:35

SAMPLE TEMP AT COLLECTION
 19.0

OF CONTAINERS
 1

Preservatives
 H2SO4
 HNO3
 HCl
 NaOH
 Na2S2O3
 Methanol
 Other

Analyses Test
 Y/N
 App. IV Metals
 Fluoride by 300.0
 Radium 226/228

Requested Analyst Filtered (Y/N)
 Y/N

ITEM #	MATRIX CODE	SAMPLE TYPE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Requested Analyst Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP °C	Received on	Sealed Cooler (Y/N)	Custody (Y/N)	Sample (Y/N)		
			START DATE TIME	END DATE TIME			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol									Other	
1	WTC	G	04/02/18 19:42	04/02/18 21:35	19.0	1																
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS:
 * 5-day TAT for App IV metals - Fluoride

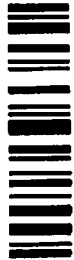
RELINQUISHED BY (AFFILIATION):
 Mollie McQuinn / Pace

RECEIVED BY (AFFILIATION):
 Mollie McQuinn / Pace
 Mike Nguyen / Pace
 M. RANMAN

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: Aaron Reeder
 SIGNATURE of SAMPLER: *[Signature]*

DATE SIGNED: 4-2-18

WO#: 263497



263497

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 263497

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

PM: BM Due Date: 04/10/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.7
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/3/18 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>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)

April 25, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339


RE: Project: Plant Hammond AP
Pace Project No.: 263498

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 263498

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 263498

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263498001	HGWA-4	Water	04/02/18 17:47	04/03/18 12:00
263498002	HGWA-4	Water	04/02/18 17:47	04/03/18 12:00
263498003	HGWA-2	Water	04/02/18 19:42	04/03/18 12:00
263498004	HGWA-2	Water	04/02/18 19:42	04/03/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 263498

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263498001	HGWA-4	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263498002	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263498003	HGWA-2	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263498004	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263498

Sample: HGWA-4		Lab ID: 263498001		Collected: 04/02/18 17:47		Received: 04/03/18 12:00		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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/04/18 10:43	04/05/18 17:07	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/04/18 10:43	04/05/18 17:07	7440-38-2		
Barium	0.022	mg/L	0.010	0.00078	1	04/04/18 10:43	04/05/18 17:07	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/04/18 10:43	04/05/18 17:07	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/04/18 10:43	04/05/18 17:07	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/04/18 10:43	04/05/18 17:07	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/04/18 10:43	04/05/18 17:07	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/04/18 10:43	04/05/18 17:07	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	04/04/18 10:43	04/05/18 17:07	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/04/18 10:43	04/05/18 17:07	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/04/18 10:43	04/05/18 17:07	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/04/18 10:43	04/05/18 17:07	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 15:03	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/09/18 22:29	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263498

Sample: HGWA-2		Lab ID: 263498003		Collected: 04/02/18 19:42		Received: 04/03/18 12:00		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							
Antimony	ND	mg/L	0.0030	0.00078	1	04/04/18 10:43	04/05/18 17:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/04/18 10:43	04/05/18 17:12	7440-38-2	
Barium	0.099	mg/L	0.010	0.00078	1	04/04/18 10:43	04/05/18 17:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/04/18 10:43	04/05/18 17:12	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/04/18 10:43	04/05/18 17:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/04/18 10:43	04/05/18 17:12	7440-47-3	
Cobalt	0.019	mg/L	0.010	0.00052	1	04/04/18 10:43	04/05/18 17:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/04/18 10:43	04/05/18 17:12	7439-92-1	
Lithium	0.0015J	mg/L	0.050	0.00097	1	04/04/18 10:43	04/05/18 17:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/04/18 10:43	04/05/18 17:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/04/18 10:43	04/05/18 17:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/04/18 10:43	04/05/18 17:12	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 12:56	04/09/18 15:53	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		04/09/18 22:50	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263498

QC Batch: 3613 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 263498003

METHOD BLANK: 18417 Matrix: Water
Associated Lab Samples: 263498003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/09/18 15:49	

LABORATORY CONTROL SAMPLE: 18418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20088 20089

Parameter	Units	263498003 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	.0025	.0025	0.0022	0.0021	88	85	75-125	3	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263498

QC Batch: 4044	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 263498001	

METHOD BLANK: 20252 Matrix: Water
Associated Lab Samples: 263498001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/10/18 14:59	

LABORATORY CONTROL SAMPLE: 20253

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0022	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20254 20255

Parameter	Units	263498001 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	.0025	.0025	0.0023	0.0025	89	95	75-125	6	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263498

QC Batch: 3707 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 263498001, 263498003

METHOD BLANK: 18765 Matrix: Water
Associated Lab Samples: 263498001, 263498003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/05/18 14:10	
Arsenic	mg/L	ND	0.0050	0.00057	04/05/18 14:10	
Barium	mg/L	ND	0.010	0.00078	04/05/18 14:10	
Beryllium	mg/L	ND	0.0030	0.000050	04/05/18 14:10	
Cadmium	mg/L	ND	0.0010	0.000093	04/05/18 14:10	
Chromium	mg/L	ND	0.010	0.0016	04/05/18 14:10	
Cobalt	mg/L	ND	0.010	0.00052	04/05/18 14:10	
Lead	mg/L	ND	0.0050	0.00027	04/05/18 14:10	
Lithium	mg/L	ND	0.050	0.00097	04/05/18 14:10	
Molybdenum	mg/L	ND	0.010	0.0019	04/05/18 14:10	
Selenium	mg/L	ND	0.010	0.0014	04/05/18 14:10	
Thallium	mg/L	ND	0.0010	0.00014	04/05/18 14:10	

LABORATORY CONTROL SAMPLE: 18766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	100	80-120	
Arsenic	mg/L	.1	0.096	96	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 18767 18768

Parameter	Units	263448001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Antimony	mg/L	ND	.1	.1	0.098	0.097	98	96	75-125	1	20	
Arsenic	mg/L	0.00060J	.1	.1	0.096	0.096	96	96	75-125	0	20	
Barium	mg/L	ND	.1	.1	0.11	0.10	98	96	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.097	0.094	97	94	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.098	0.096	98	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263498

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 18767			18768									
Parameter	Units	263448001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	MS Result	MSD Result						
Chromium	mg/L	ND	.1	.1	0.097	0.095	97	95	75-125	3	20	
Cobalt	mg/L	ND	.1	.1	0.098	0.095	98	95	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.098	0.095	98	95	75-125	4	20	
Lithium	mg/L	0.0058J	.1	.1	0.10	0.099	97	93	75-125	4	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.099	100	97	75-125	2	20	
Selenium	mg/L	ND	.1	.1	0.099	0.097	99	97	75-125	2	20	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263498

QC Batch: 4030

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 263498001, 263498003

METHOD BLANK: 20183

Matrix: Water

Associated Lab Samples: 263498001, 263498003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/09/18 20:46	

LABORATORY CONTROL SAMPLE: 20184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20185

20186

Parameter	Units	263497001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	10.4	10.6	104	106	90-110	2	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263498

Sample: HGWA-4 **Lab ID: 263498002** Collected: 04/02/18 17:47 Received: 04/03/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.371 ± 0.118 (0.104) C:89% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	-0.163 ± 0.311 (0.767) C:73% T:82%	pCi/L	04/20/18 11:38	15262-20-1	
Total Radium	Total Radium Calculation	0.371 ± 0.429 (0.871)	pCi/L	04/25/18 11:20	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263498

Sample: HGWA-2 **Lab ID: 263498004** Collected: 04/02/18 19:42 Received: 04/03/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.376 ± 0.131 (0.162) C:89% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	0.385 ± 0.397 (0.822) C:72% T:82%	pCi/L	04/20/18 11:38	15262-20-1	
Total Radium	Total Radium Calculation	0.761 ± 0.528 (0.984)	pCi/L	04/25/18 11:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263498

QC Batch: 294196

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 263498002, 263498004

METHOD BLANK: 1440643

Matrix: Water

Associated Lab Samples: 263498002, 263498004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0447 ± 0.264 (0.636) C:75% T:85%	pCi/L	04/20/18 11:37	

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 Hammond AP

Pace Project No.: 263498

QC Batch: 294194

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 263498002, 263498004

METHOD BLANK: 1440635

Matrix: Water

Associated Lab Samples: 263498002, 263498004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.260 ± 0.105 (0.126) C:91% T:NA	pCi/L	04/18/18 19:04	

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 Hammond AP
Pace Project No.: 263498

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 263498

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263498001	HGWA-4	EPA 3005A	3707	EPA 6020B	3818
263498003	HGWA-2	EPA 3005A	3707	EPA 6020B	3818
263498001	HGWA-4	EPA 7470A	4044	EPA 7470A	4091
263498003	HGWA-2	EPA 7470A	3613	EPA 7470A	3998
263498002	HGWA-4	EPA 9315	294194		
263498004	HGWA-2	EPA 9315	294194		
263498002	HGWA-4	EPA 9320	294196		
263498004	HGWA-2	EPA 9320	294196		
263498002	HGWA-4	Total Radium Calculation	295904		
263498004	HGWA-2	Total Radium Calculation	295904		
263498001	HGWA-4	EPA 300.0	4030		
263498003	HGWA-2	EPA 300.0	4030		

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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.

Section A Section B Section C

Page: 1 Of 1

Section A Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: 04-02-2018

Section B Required Project Information:
 Report To: John Abraham / Lauren Petty
 Copy To: Geosyntec Consultants
 Address: [blank]
 Project Name: Plant Hammond AP
 Project #: [blank]

Section C Invoice Information:
 Attention: SCINOVICES@southernco.com
 Company Name: [blank]
 Address: [blank]
 Regulatory Agency: [blank]
 State / Location: GA
 Pace Project Manager: betsy.mcdaniel@paceclabs.com
 Pace Quote: [blank]
 Pace Profile #: 327

ITEM #	MATRIX CODE (see valid codes to left)			COLLECTED		SAMPLE TYPE (G-RAB C-COMP)	# OF CONTAINERS		PRESERVATIVES			ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)		
	MATRIX CODE (see valid codes to left)	START DATE	START TIME	END DATE	END TIME		H2SO4	HNO3	HCl	NaOH	NH4SC2O3		Methanol	Other	Y
1	HGWA-4	04/02/18	1937	04/02/18	1747	GT	4	3					Fluoride by 300.0	Y	N
2	HGWA-2	04/02/18	1938	04/02/18	1942	WT	4	3					App. IV Metals	Y	N
3													Radium 226/228	Y	N

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
* 5-day TAT For App IV Metals + Fluoride	Dan Gaters	04/02/18	20:00	Mellie Mufson	04/02/18	20:00	
	Mellie Mufson	04/02/18	21:35	EPG Lane	4/2/18	21:35	
	JTB Lane	4/3/18	10:01	Mike Nagler / Pace	4/3/18	10:01	
				M. D. Abraham	4/18/18	12:00	Temp R C 79

SAMPLER NAME AND SIGNATURE: [blank]

PRINT Name of SAMPLER: DAN GATERS

SIGNATURE OF SAMPLER: [Signature]

DATE Signed: 04-02-2018

TEMP R C: 79

Received on (Y/N): [blank]

Custody Sealed (Y/N): [blank]

Sample Intact (Y/N): [blank]

NO#: 263498



Page 18 of 19

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 263498

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

PM: BM

Due Date: 04/10/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.7

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/3/18 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 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>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)

April 27, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

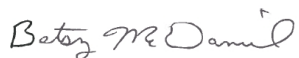
RE: Project: Plant Hammond AP
Pace Project No.: 263576

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 263576

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 263576

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263576001	HGWA-3	Water	04/03/18 10:00	04/04/18 16:10
263576002	HGWA-3	Water	04/03/18 10:00	04/04/18 16:10
263576003	HGWC-7	Water	04/03/18 11:30	04/04/18 16:10
263576004	HGWC-7	Water	04/03/18 11:30	04/04/18 16:10
263576005	HGWC-8	Water	04/03/18 12:35	04/04/18 16:10
263576006	HGWC-8	Water	04/03/18 12:35	04/04/18 16:10
263576007	HGWC-9	Water	04/03/18 14:35	04/04/18 16:10
263576008	HGWC-9	Water	04/03/18 14:35	04/04/18 16:10
263576009	HGWC-15	Water	04/03/18 16:10	04/04/18 16:10
263576010	HGWC-15	Water	04/03/18 16:10	04/04/18 16:10
263576011	FD-01	Water	04/03/18 00:00	04/04/18 16:10
263576012	FD-01	Water	04/03/18 00:00	04/04/18 16:10

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 263576

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263576001	HGWA-3	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263576002	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263576003	HGWC-7	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263576004	HGWC-7	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263576005	HGWC-8	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263576006	HGWC-8	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263576007	HGWC-9	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263576008	HGWC-9	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263576009	HGWC-15	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263576010	HGWC-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263576011	FD-01	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263576012	FD-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWA-3		Lab ID: 263576001		Collected: 04/03/18 10:00		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 15:13	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 15:13	7440-38-2		
Barium	0.11	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 15:13	7440-39-3	M1	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 15:13	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 15:13	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 15:13	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 15:13	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 15:13	7439-92-1		
Lithium	0.0030J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 15:13	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 15:13	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 15:13	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 15:13	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:32	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/06/18 09:24	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-7		Lab ID: 263576003		Collected: 04/03/18 11:30		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 15:36	7440-36-0	B	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 15:36	7440-38-2		
Barium	0.075	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 15:36	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 15:36	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 15:36	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 15:36	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 15:36	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 15:36	7439-92-1		
Lithium	0.0023J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 15:36	7439-93-2		
Molybdenum	0.032	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 15:36	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 15:36	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 15:36	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:41	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 02:26	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-8		Lab ID: 263576005		Collected: 04/03/18 12:35		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 15:42	7440-36-0	B
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 15:42	7440-38-2	
Barium	0.065	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 15:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 15:42	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 15:42	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 15:42	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 15:42	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 15:42	7439-92-1	
Lithium	0.0025J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 15:42	7439-93-2	
Molybdenum	0.44	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 15:42	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 15:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 15:42	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:43	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.39	mg/L	0.30	0.029	1		04/11/18 03:27	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-9		Lab ID: 263576007		Collected: 04/03/18 14:35		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 15:48	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 15:48	7440-38-2		
Barium	0.10	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 15:48	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 15:48	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 15:48	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 15:48	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 15:48	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 15:48	7439-92-1		
Lithium	0.0043J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 15:48	7439-93-2		
Molybdenum	0.025	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 15:48	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 15:48	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 15:48	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:46	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 03:48	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 263576

Sample: HGWC-15		Lab ID: 263576009		Collected: 04/03/18 16:10		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 15:53	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 15:53	7440-38-2		
Barium	0.019	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 15:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 15:53	7440-41-7		
Cadmium	0.0022	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 15:53	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 15:53	7440-47-3		
Cobalt	0.032	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 15:53	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 15:53	7439-92-1		
Lithium	0.0026J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 15:53	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 15:53	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 15:53	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 15:53	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:48	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 04:09	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: FD-01		Lab ID: 263576011		Collected: 04/03/18 00:00		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:11	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:11	7440-38-2		
Barium	0.021	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:11	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:11	7440-41-7		
Cadmium	0.0024	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:11	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:11	7440-47-3		
Cobalt	0.037	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:11	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:11	7439-92-1		
Lithium	0.0026J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:11	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:11	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:11	7782-49-2		
Thallium	0.00016J	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:11	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:55	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 04:29	16984-48-8		

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263576

QC Batch: 3949 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
 Associated Lab Samples: 263576001, 263576003, 263576005, 263576007, 263576009, 263576011

METHOD BLANK: 19999 Matrix: Water
 Associated Lab Samples: 263576001, 263576003, 263576005, 263576007, 263576009, 263576011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/09/18 14:27	

LABORATORY CONTROL SAMPLE: 20000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20001 20002

Parameter	Units	20001		20002		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Mercury	mg/L	ND	.0025	.0025	0.0024	0.0024	95	95	75-125	0	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263576

QC Batch: 3854 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 263576001, 263576003, 263576005, 263576007, 263576009, 263576011

METHOD BLANK: 19572 Matrix: Water
Associated Lab Samples: 263576001, 263576003, 263576005, 263576007, 263576009, 263576011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/09/18 15:02	
Arsenic	mg/L	ND	0.0050	0.00057	04/09/18 15:02	
Barium	mg/L	ND	0.010	0.00078	04/09/18 15:02	
Beryllium	mg/L	ND	0.0030	0.000050	04/09/18 15:02	
Cadmium	mg/L	ND	0.0010	0.000093	04/09/18 15:02	
Chromium	mg/L	ND	0.010	0.0016	04/09/18 15:02	
Cobalt	mg/L	ND	0.010	0.00052	04/09/18 15:02	
Lead	mg/L	ND	0.0050	0.00027	04/09/18 15:02	
Lithium	mg/L	ND	0.050	0.00097	04/09/18 15:02	
Molybdenum	mg/L	ND	0.010	0.0019	04/09/18 15:02	
Selenium	mg/L	ND	0.010	0.0014	04/09/18 15:02	
Thallium	mg/L	ND	0.0010	0.00014	04/09/18 15:02	

LABORATORY CONTROL SAMPLE: 19573

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.097	97	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.11	105	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Chromium	mg/L	.1	0.11	107	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	109	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19574 19575

Parameter	Units	263576001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Spike Conc.						
Antimony	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.10	0.099	103	99	75-125	4	20	
Barium	mg/L	0.11	.1	.1	0.15	0.15	38	35	75-125	2	20 M1	
Beryllium	mg/L	ND	.1	.1	0.099	0.095	99	95	75-125	4	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263576

Parameter	Units	19574		19575		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		263576001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	101	75-125	6	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	101	75-125	5	20	
Lead	mg/L	ND	.1	.1	0.098	0.097	98	96	75-125	2	20	
Lithium	mg/L	0.0030J	.1	.1	0.10	0.10	100	98	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	5	20	
Selenium	mg/L	ND	.1	.1	0.10	0.098	105	97	75-125	7	20	
Thallium	mg/L	ND	.1	.1	0.099	0.097	99	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263576

QC Batch: 3816 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 263576001

METHOD BLANK: 19351 Matrix: Water
Associated Lab Samples: 263576001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/06/18 02:53	

LABORATORY CONTROL SAMPLE: 19352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.3	103	90-110	

MATRIX SPIKE SAMPLE: 19355

Parameter	Units	263366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	89.6	10	8.1	-815	90-110	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20112 20113

Parameter	Units	263518001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	1.2	10	10	10.0	10.2	88	89	90-110	1	15	M1

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263576

QC Batch: 4034 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 263576003, 263576005, 263576007, 263576009, 263576011

METHOD BLANK: 20201 Matrix: Water
Associated Lab Samples: 263576003, 263576005, 263576007, 263576009, 263576011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/11/18 01:03	

LABORATORY CONTROL SAMPLE: 20202

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20203 20204

Parameter	Units	263576003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	9.9	10	99	99	90-110	0	15	

MATRIX SPIKE SAMPLE: 20205

Parameter	Units	263576005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.39	10	10.8	104	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWA-3 **Lab ID: 263576002** Collected: 04/03/18 10:00 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.305 ± 0.110 (0.125) C:87% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	0.379 ± 0.313 (0.615) C:80% T:78%	pCi/L	04/20/18 11:38	15262-20-1	
Total Radium	Total Radium Calculation	0.684 ± 0.423 (0.740)	pCi/L	04/25/18 11:39	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-7 **Lab ID: 263576004** Collected: 04/03/18 11:30 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.293 ± 0.105 (0.110) C:90% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	0.245 ± 0.305 (0.643) C:78% T:80%	pCi/L	04/20/18 11:38	15262-20-1	
Total Radium	Total Radium Calculation	0.538 ± 0.410 (0.753)	pCi/L	04/25/18 11:39	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-8 **Lab ID: 263576006** Collected: 04/03/18 12:35 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.311 ± 0.114 (0.140) C:86% T:NA	pCi/L	04/18/18 19:07	13982-63-3	
Radium-228	EPA 9320	-0.0646 ± 0.370 (0.872) C:73% T:82%	pCi/L	04/20/18 11:39	15262-20-1	
Total Radium	Total Radium Calculation	0.311 ± 0.484 (1.01)	pCi/L	04/25/18 11:39	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-9 **Lab ID: 263576008** Collected: 04/03/18 14:35 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.276 ± 0.125 (0.199) C:92% T:NA	pCi/L	04/18/18 19:07	13982-63-3	
Radium-228	EPA 9320	0.456 ± 0.372 (0.741) C:75% T:85%	pCi/L	04/20/18 11:38	15262-20-1	
Total Radium	Total Radium Calculation	0.732 ± 0.497 (0.940)	pCi/L	04/25/18 11:39	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: HGWC-15 **Lab ID: 263576010** Collected: 04/03/18 16:10 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.208 ± 0.105 (0.169) C:94% T:NA	pCi/L	04/18/18 19:07	13982-63-3	
Radium-228	EPA 9320	0.176 ± 0.309 (0.676) C:78% T:84%	pCi/L	04/20/18 15:14	15262-20-1	
Total Radium	Total Radium Calculation	0.384 ± 0.414 (0.845)	pCi/L	04/25/18 11:39	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

Sample: FD-01 **Lab ID: 263576012** Collected: 04/03/18 00:00 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.275 ± 0.129 (0.144) C:91% T:NA	pCi/L	04/19/18 08:39	13982-63-3	
Radium-228	EPA 9320	0.102 ± 0.304 (0.686) C:78% T:78%	pCi/L	04/20/18 15:15	15262-20-1	
Total Radium	Total Radium Calculation	0.377 ± 0.433 (0.830)	pCi/L	04/25/18 11:39	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263576

QC Batch: 294196

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 263576002, 263576004, 263576006, 263576008, 263576010, 263576012

METHOD BLANK: 1440643

Matrix: Water

Associated Lab Samples: 263576002, 263576004, 263576006, 263576008, 263576010, 263576012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0447 ± 0.264 (0.636) C:75% T:85%	pCi/L	04/20/18 11:37	

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 Hammond AP

Pace Project No.: 263576

QC Batch: 294194 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 263576002, 263576004, 263576006, 263576008, 263576010, 263576012

METHOD BLANK: 1440635 Matrix: Water

Associated Lab Samples: 263576002, 263576004, 263576006, 263576008, 263576010, 263576012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.260 ± 0.105 (0.126) C:91% T:NA	pCi/L	04/18/18 19:04	

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 Hammond AP
Pace Project No.: 263576

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.

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 263576

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263576001	HGWA-3	EPA 3005A	3854	EPA 6020B	3993
263576003	HGWC-7	EPA 3005A	3854	EPA 6020B	3993
263576005	HGWC-8	EPA 3005A	3854	EPA 6020B	3993
263576007	HGWC-9	EPA 3005A	3854	EPA 6020B	3993
263576009	HGWC-15	EPA 3005A	3854	EPA 6020B	3993
263576011	FD-01	EPA 3005A	3854	EPA 6020B	3993
263576001	HGWA-3	EPA 7470A	3949	EPA 7470A	3989
263576003	HGWC-7	EPA 7470A	3949	EPA 7470A	3989
263576005	HGWC-8	EPA 7470A	3949	EPA 7470A	3989
263576007	HGWC-9	EPA 7470A	3949	EPA 7470A	3989
263576009	HGWC-15	EPA 7470A	3949	EPA 7470A	3989
263576011	FD-01	EPA 7470A	3949	EPA 7470A	3989
263576002	HGWA-3	EPA 9315	294194		
263576004	HGWC-7	EPA 9315	294194		
263576006	HGWC-8	EPA 9315	294194		
263576008	HGWC-9	EPA 9315	294194		
263576010	HGWC-15	EPA 9315	294194		
263576012	FD-01	EPA 9315	294194		
263576002	HGWA-3	EPA 9320	294196		
263576004	HGWC-7	EPA 9320	294196		
263576006	HGWC-8	EPA 9320	294196		
263576008	HGWC-9	EPA 9320	294196		
263576010	HGWC-15	EPA 9320	294196		
263576012	FD-01	EPA 9320	294196		
263576002	HGWA-3	Total Radium Calculation	295909		
263576004	HGWC-7	Total Radium Calculation	295909		
263576006	HGWC-8	Total Radium Calculation	295909		
263576008	HGWC-9	Total Radium Calculation	295909		
263576010	HGWC-15	Total Radium Calculation	295909		
263576012	FD-01	Total Radium Calculation	295909		
263576001	HGWA-3	EPA 300.0	3816		
263576003	HGWC-7	EPA 300.0	4034		
263576005	HGWC-8	EPA 300.0	4034		
263576007	HGWC-9	EPA 300.0	4034		
263576009	HGWC-15	EPA 300.0	4034		
263576011	FD-01	EPA 300.0	4034		

REPORT OF LABORATORY ANALYSIS

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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.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals	Report To: Jofu Abraham	Attention: <i>SLinnovices@southernco.com</i>	Company Name:	Requested Analysis Filtered (Y/N)	GA
Address: 2480 Maner Road Atlanta, GA 30339	Copy To: <i>Geosyntec.Consultants</i>	Purchase Order #:	Address:	Requested Analysis Filtered (Y/N)	GA
Email: <i>jabraham@southernco.com</i>	Project Name: <i>TAT 5-day</i>	Project #:	Pace Project Manager: <i>betsy.mcdaniel@pacelabs.com</i>	Requested Analysis Filtered (Y/N)	GA
Phone: (404)506-7239	Project Name: <i>TAT 5-day</i>	Project #:	Pace Profile #: 327	Requested Analysis Filtered (Y/N)	GA
Requested Due Date: <i>4/3/18</i>	Project Name: <i>TAT 5-day</i>	Project #:		Requested Analysis Filtered (Y/N)	GA

#	MATRIX CODE	MATRIX	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	PRESERVATIVES	ANALYSES TEST	TEMP °C	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME	TEMP °C	RECEIVED ON	CUSTODY	SEALED	COOLER	INTEGRITY		
			START	END																				
1	HGWA-3	Drinking Water	04/03/18 0940	04/03/18 1600	G	As Preserved	As Preserved	22	04/03/18	1700	<i>Moelia Mustkus</i>	04/03/18	1700	<i>Moelia Mustkus</i>	04/03/18	1700	22							
2	HGWC-7	Waste Water	04/03/18 1115	04/03/18 1130	G	As Preserved	As Preserved	22	04/03/18	1850	<i>Moelia Mustkus</i>	04/03/18	1850	<i>Moelia Mustkus</i>	04/03/18	1850	22							
3	HGWC-8	Process Water	04/03/18 1220	04/03/18 1235	G	As Preserved	As Preserved	22	04/03/18	1101	<i>Moelia Mustkus</i>	04/03/18	1101	<i>Moelia Mustkus</i>	04/03/18	1101	22							
4	HGWC-9	Surface Water	04/03/18 1415	04/03/18 1435	G	As Preserved	As Preserved	22	04/03/18	1610	<i>Moelia Mustkus</i>	04/03/18	1610	<i>Moelia Mustkus</i>	04/03/18	1610	22							
5	HGWC-15	Other	04/03/18 1600	04/03/18 1610	G	As Preserved	As Preserved	22	04/03/18	1610	<i>Moelia Mustkus</i>	04/03/18	1610	<i>Moelia Mustkus</i>	04/03/18	1610	22							
6	FD-01	Other	04/03/18	04/03/18	G	As Preserved	As Preserved	22	04/03/18	1610	<i>Moelia Mustkus</i>	04/03/18	1610	<i>Moelia Mustkus</i>	04/03/18	1610	22							

ADDITIONAL COMMENTS:		RECEIVED BY / AFFILIATION:		DATE:		TIME:	
<i>* 5 day TAT per App IV metals and fluoride</i>		<i>Moelia Mustkus</i>		<i>04/03/18</i>		<i>1700</i>	
<i>Moelia Mustkus</i>		<i>Moelia Mustkus</i>		<i>04/03/18</i>		<i>1850</i>	
<i>Moelia Mustkus</i>		<i>Moelia Mustkus</i>		<i>04/03/18</i>		<i>1101</i>	
<i>Moelia Mustkus</i>		<i>Moelia Mustkus</i>		<i>04/03/18</i>		<i>1610</i>	

WO# : 263576

263576



Sample Condition Upon Receipt

Client Name: GIA Power Project # _____

WO#: **263576**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

PM: BM Due Date: 04/11/18

Tracking #: _____

CLIENT: GAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/11/18 MR

Temp should be above freezing to 8°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>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, 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).

April 26, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

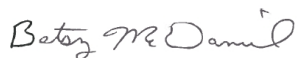
RE: Project: Plant Hammond AP
Pace Project No.: 263577

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 263577

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
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
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 Hammond AP
Pace Project No.: 263577

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263577001	HGWA-5	Water	04/03/18 10:13	04/04/18 16:10
263577002	HGWA-5	Water	04/03/18 10:13	04/04/18 16:10
263577003	HGWA-6	Water	04/03/18 11:15	04/04/18 16:10
263577004	HGWA-6	Water	04/03/18 11:15	04/04/18 16:10
263577005	HGWC-18	Water	04/03/18 13:08	04/04/18 16:10
263577006	HGWC-18	Water	04/03/18 13:08	04/04/18 16:10
263577007	HGWC-17	Water	04/03/18 14:19	04/04/18 16:10
263577008	HGWC-17	Water	04/03/18 14:19	04/04/18 16:10
263577009	HGWC-16	Water	04/03/18 16:46	04/04/18 16:10
263577010	HGWC-16	Water	04/03/18 16:46	04/04/18 16:10
263577011	FB-01	Water	04/03/18 17:20	04/04/18 16:10
263577012	FB-01	Water	04/03/18 17:20	04/04/18 16:10

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 263577

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263577001	HGWA-5	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263577002	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263577003	HGWA-6	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263577004	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263577005	HGWC-18	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263577006	HGWC-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263577007	HGWC-17	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263577008	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263577009	HGWC-16	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263577010	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263577011	FB-01	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263577012	FB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWA-5		Lab ID: 263577001		Collected: 04/03/18 10:13		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:16	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:16	7440-38-2	
Barium	0.038	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:16	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:16	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:16	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:16	7439-92-1	
Lithium	0.0033J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:16	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:16	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:16	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 14:58	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 04:50	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWA-6		Lab ID: 263577003		Collected: 04/03/18 11:15		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:22	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:22	7440-38-2	
Barium	0.14	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:22	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:22	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:22	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:22	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:22	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:22	7439-92-1	
Lithium	0.012J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:22	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:22	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 15:00	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 05:11	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWC-18		Lab ID: 263577005		Collected: 04/03/18 13:08		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:28	7440-36-0	
Arsenic	0.0062	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:28	7440-38-2	
Barium	0.028	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:28	7440-41-7	
Cadmium	0.0022	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:28	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:28	7440-47-3	
Cobalt	0.19	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:28	7439-92-1	
Lithium	0.013J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:28	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:28	7439-98-7	
Selenium	0.029	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:28	7782-49-2	
Thallium	0.00014J	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:28	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 15:02	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.33	mg/L	0.30	0.029	1		04/11/18 05:31	16984-48-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWC-17		Lab ID: 263577007		Collected: 04/03/18 14:19		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:33	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:33	7440-38-2		
Barium	0.025	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:33	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:33	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:33	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:33	7440-47-3		
Cobalt	0.016	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:33	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:33	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:33	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:33	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:33	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:33	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 15:05	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 07:14	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWC-16		Lab ID: 263577009		Collected: 04/03/18 16:46		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:39	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:39	7440-38-2		
Barium	0.099	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:39	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:39	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:39	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:39	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:39	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:39	7439-92-1		
Lithium	0.0028J	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:39	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:39	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:39	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:39	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 15:07	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 07:35	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: FB-01		Lab ID: 263577011		Collected: 04/03/18 17:20		Received: 04/04/18 16:10		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	mg/L	0.0030	0.00078	1	04/06/18 09:47	04/09/18 16:45	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:47	04/09/18 16:45	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	04/06/18 09:47	04/09/18 16:45	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:47	04/09/18 16:45	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:47	04/09/18 16:45	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:47	04/09/18 16:45	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:47	04/09/18 16:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:47	04/09/18 16:45	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/06/18 09:47	04/09/18 16:45	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:47	04/09/18 16:45	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:47	04/09/18 16:45	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:47	04/09/18 16:45	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/09/18 11:00	04/09/18 15:10	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		04/11/18 08:16	16984-48-8	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263577

QC Batch: 3949 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 263577001, 263577003, 263577005, 263577007, 263577009, 263577011

METHOD BLANK: 19999 Matrix: Water
Associated Lab Samples: 263577001, 263577003, 263577005, 263577007, 263577009, 263577011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/09/18 14:27	

LABORATORY CONTROL SAMPLE: 20000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20001 20002

Parameter	Units	20001		20002		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Mercury	mg/L	ND	.0025	.0025	0.0024	0.0024	95	95	75-125	0	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263577

QC Batch: 3854 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 263577001, 263577003, 263577005, 263577007, 263577009, 263577011

METHOD BLANK: 19572 Matrix: Water
Associated Lab Samples: 263577001, 263577003, 263577005, 263577007, 263577009, 263577011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/09/18 15:02	
Arsenic	mg/L	ND	0.0050	0.00057	04/09/18 15:02	
Barium	mg/L	ND	0.010	0.00078	04/09/18 15:02	
Beryllium	mg/L	ND	0.0030	0.000050	04/09/18 15:02	
Cadmium	mg/L	ND	0.0010	0.000093	04/09/18 15:02	
Chromium	mg/L	ND	0.010	0.0016	04/09/18 15:02	
Cobalt	mg/L	ND	0.010	0.00052	04/09/18 15:02	
Lead	mg/L	ND	0.0050	0.00027	04/09/18 15:02	
Lithium	mg/L	ND	0.050	0.00097	04/09/18 15:02	
Molybdenum	mg/L	ND	0.010	0.0019	04/09/18 15:02	
Selenium	mg/L	ND	0.010	0.0014	04/09/18 15:02	
Thallium	mg/L	ND	0.0010	0.00014	04/09/18 15:02	

LABORATORY CONTROL SAMPLE: 19573

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.097	97	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.11	105	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Chromium	mg/L	.1	0.11	107	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	109	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19574 19575

Parameter	Units	263576001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Spike Conc.						
Antimony	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.10	0.099	103	99	75-125	4	20	
Barium	mg/L	0.11	.1	.1	0.15	0.15	38	35	75-125	2	20 M1	
Beryllium	mg/L	ND	.1	.1	0.099	0.095	99	95	75-125	4	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263577

Parameter	Units	19574		19575		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		263576001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	101	75-125	6	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	101	75-125	5	20	
Lead	mg/L	ND	.1	.1	0.098	0.097	98	96	75-125	2	20	
Lithium	mg/L	0.0030J	.1	.1	0.10	0.10	100	98	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	5	20	
Selenium	mg/L	ND	.1	.1	0.10	0.098	105	97	75-125	7	20	
Thallium	mg/L	ND	.1	.1	0.099	0.097	99	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263577

QC Batch: 4034 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 263577001, 263577003, 263577005, 263577007, 263577009, 263577011

METHOD BLANK: 20201 Matrix: Water
 Associated Lab Samples: 263577001, 263577003, 263577005, 263577007, 263577009, 263577011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/11/18 01:03	

LABORATORY CONTROL SAMPLE: 20202

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20203 20204

Parameter	Units	263576003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	9.9	10	99	99	90-110	0	15	

MATRIX SPIKE SAMPLE: 20205

Parameter	Units	263576005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.39	10	10.8	104	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWA-5 **Lab ID: 263577002** Collected: 04/03/18 10:13 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.447 ± 0.252 (0.297) C:85% T:NA	pCi/L	04/12/18 09:11	13982-63-3	
Radium-228	EPA 9320	0.411 ± 0.425 (0.883) C:76% T:79%	pCi/L	04/16/18 15:12	15262-20-1	
Total Radium	Total Radium Calculation	0.858 ± 0.677 (1.18)	pCi/L	04/25/18 11:20	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWA-6 **Lab ID: 263577004** Collected: 04/03/18 11:15 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.359 ± 0.233 (0.337) C:87% T:NA	pCi/L	04/12/18 09:11	13982-63-3	
Radium-228	EPA 9320	0.469 ± 0.395 (0.800) C:76% T:92%	pCi/L	04/16/18 15:12	15262-20-1	
Total Radium	Total Radium Calculation	0.828 ± 0.628 (1.14)	pCi/L	04/25/18 11:20	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWC-18 **Lab ID: 263577006** Collected: 04/03/18 13:08 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.23 ± 0.421 (0.364) C:93% T:NA	pCi/L	04/12/18 09:11	13982-63-3	
Radium-228	EPA 9320	1.30 ± 0.493 (0.760) C:81% T:84%	pCi/L	04/16/18 15:12	15262-20-1	
Total Radium	Total Radium Calculation	2.53 ± 0.914 (1.12)	pCi/L	04/25/18 11:20	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWC-17 **Lab ID: 263577008** Collected: 04/03/18 14:19 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.163 ± 0.0895 (0.139) C:88% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	0.246 ± 0.365 (0.787) C:71% T:80%	pCi/L	04/20/18 11:37	15262-20-1	
Total Radium	Total Radium Calculation	0.409 ± 0.455 (0.926)	pCi/L	04/25/18 11:20	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: HGWC-16 **Lab ID: 263577010** Collected: 04/03/18 16:46 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.417 ± 0.133 (0.138) C:88% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	0.366 ± 0.532 (1.14) C:46% T:87%	pCi/L	04/20/18 11:37	15262-20-1	
Total Radium	Total Radium Calculation	0.783 ± 0.665 (1.28)	pCi/L	04/25/18 11:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

Sample: FB-01 **Lab ID: 263577012** Collected: 04/03/18 17:20 Received: 04/04/18 16:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.304 ± 0.118 (0.156) C:83% T:NA	pCi/L	04/18/18 19:06	13982-63-3	
Radium-228	EPA 9320	-0.0339 ± 0.428 (1.01) C:64% T:77%	pCi/L	04/20/18 11:37	15262-20-1	
Total Radium	Total Radium Calculation	0.304 ± 0.546 (1.17)	pCi/L	04/25/18 11:20	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263577

QC Batch:	293840	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	263577002, 263577004, 263577006		

METHOD BLANK:	1438693	Matrix:	Water
Associated Lab Samples:	263577002, 263577004, 263577006		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0384 ± 0.272 (0.648) C:79% T:84%	pCi/L	04/16/18 11:04	

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: Plant Hammond AP

Pace Project No.: 263577

QC Batch: 294196

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 263577008, 263577010, 263577012

METHOD BLANK: 1440643

Matrix: Water

Associated Lab Samples: 263577008, 263577010, 263577012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0447 ± 0.264 (0.636) C:75% T:85%	pCi/L	04/20/18 11:37	

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: Plant Hammond AP

Pace Project No.: 263577

QC Batch: 294194

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 263577008, 263577010, 263577012

METHOD BLANK: 1440635

Matrix: Water

Associated Lab Samples: 263577008, 263577010, 263577012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.260 ± 0.105 (0.126) C:91% T:NA	pCi/L	04/18/18 19:04	

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: Plant Hammond AP

Pace Project No.: 263577

QC Batch:	293839	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	263577002, 263577004, 263577006		

METHOD BLANK:	1438692	Matrix:	Water
Associated Lab Samples:	263577002, 263577004, 263577006		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0457 ± 0.172 (0.432) C:92% T:NA	pCi/L	04/12/18 09:04	

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 Hammond AP

Pace Project No.: 263577

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

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 Hammond AP

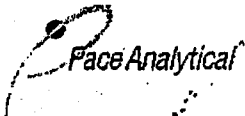
Pace Project No.: 263577

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263577001	HGWA-5	EPA 3005A	3854	EPA 6020B	3993
263577003	HGWA-6	EPA 3005A	3854	EPA 6020B	3993
263577005	HGWC-18	EPA 3005A	3854	EPA 6020B	3993
263577007	HGWC-17	EPA 3005A	3854	EPA 6020B	3993
263577009	HGWC-16	EPA 3005A	3854	EPA 6020B	3993
263577011	FB-01	EPA 3005A	3854	EPA 6020B	3993
263577001	HGWA-5	EPA 7470A	3949	EPA 7470A	3989
263577003	HGWA-6	EPA 7470A	3949	EPA 7470A	3989
263577005	HGWC-18	EPA 7470A	3949	EPA 7470A	3989
263577007	HGWC-17	EPA 7470A	3949	EPA 7470A	3989
263577009	HGWC-16	EPA 7470A	3949	EPA 7470A	3989
263577011	FB-01	EPA 7470A	3949	EPA 7470A	3989
263577002	HGWA-5	EPA 9315	293839		
263577004	HGWA-6	EPA 9315	293839		
263577006	HGWC-18	EPA 9315	293839		
263577008	HGWC-17	EPA 9315	294194		
263577010	HGWC-16	EPA 9315	294194		
263577012	FB-01	EPA 9315	294194		
263577002	HGWA-5	EPA 9320	293840		
263577004	HGWA-6	EPA 9320	293840		
263577006	HGWC-18	EPA 9320	293840		
263577008	HGWC-17	EPA 9320	294196		
263577010	HGWC-16	EPA 9320	294196		
263577012	FB-01	EPA 9320	294196		
263577002	HGWA-5	Total Radium Calculation	295904		
263577004	HGWA-6	Total Radium Calculation	295904		
263577006	HGWC-18	Total Radium Calculation	295904		
263577008	HGWC-17	Total Radium Calculation	295904		
263577010	HGWC-16	Total Radium Calculation	295904		
263577012	FB-01	Total Radium Calculation	295904		
263577001	HGWA-5	EPA 300.0	4034		
263577003	HGWA-6	EPA 300.0	4034		
263577005	HGWC-18	EPA 300.0	4034		
263577007	HGWC-17	EPA 300.0	4034		
263577009	HGWC-16	EPA 300.0	4034		
263577011	FB-01	EPA 300.0	4034		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GIA Power Project # _____

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 83 Type of Ice: Wet 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 Comments:

WO#: 263577
 PM: BM Due Date: 04/11/18
 CLIENT: GAPower-CCR
 Date and Initials of person examining contents: 4/11/18 MK

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 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>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, 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	15.	
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)

April 30, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP
Pace Project No.: 263653

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 263653

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 263653

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263653001	HGWC-14	Water	04/04/18 09:48	04/05/18 14:30
263653002	HGWC-14	Water	04/04/18 09:48	04/05/18 14:30
263653003	HGWC-13	Water	04/04/18 11:15	04/05/18 14:30
263653004	HGWC-13	Water	04/04/18 11:15	04/05/18 14:30
263653005	FD-02	Water	04/04/18 00:00	04/05/18 14:30
263653006	FD-02	Water	04/04/18 00:00	04/05/18 14:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 263653

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263653001	HGWC-14	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263653002	HGWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263653003	HGWC-13	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263653004	HGWC-13	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263653005	FD-02	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263653006	FD-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263653

Sample: HGWC-14		Lab ID: 263653001		Collected: 04/04/18 09:48		Received: 04/05/18 14:30		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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 19:11	7440-36-0		
Arsenic	0.0052	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 19:11	7440-38-2		
Barium	0.021	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 19:11	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 19:11	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 19:11	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 19:11	7440-47-3		
Cobalt	0.025	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 19:11	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 19:11	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 19:11	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 19:11	7439-98-7		
Selenium	0.012	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 19:11	7782-49-2		
Thallium	0.00028J	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 19:11	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 15:49	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 06:39	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263653

Sample: HGWC-13		Lab ID: 263653003		Collected: 04/04/18 11:15		Received: 04/05/18 14:30		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							
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 19:16	7440-36-0	
Arsenic	0.49	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 19:16	7440-38-2	
Barium	0.099	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 19:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 19:16	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 19:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 19:16	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 19:16	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 19:16	7439-92-1	
Lithium	0.031J	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 19:16	7439-93-2	
Molybdenum	0.027	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 19:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 19:16	7782-49-2	
Thallium	0.00032J	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 19:16	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 15:51	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.65	mg/L	0.30	0.029	1		04/12/18 07:46	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263653

Sample: FD-02		Lab ID: 263653005		Collected: 04/04/18 00:00		Received: 04/05/18 14:30		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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 19:22	7440-36-0		
Arsenic	0.46	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 19:22	7440-38-2		
Barium	0.11	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 19:22	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 19:22	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 19:22	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 19:22	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 19:22	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 19:22	7439-92-1		
Lithium	0.033J	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 19:22	7439-93-2		
Molybdenum	0.030	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 19:22	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 19:22	7782-49-2		
Thallium	0.00036J	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 19:22	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 15:54	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	0.45	mg/L	0.30	0.029	1		04/12/18 08:08	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263653

QC Batch: 4044 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 263653001, 263653003, 263653005

METHOD BLANK: 20252 Matrix: Water
Associated Lab Samples: 263653001, 263653003, 263653005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/10/18 14:59	

LABORATORY CONTROL SAMPLE: 20253

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0022	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20254 20255

Parameter	Units	263498001 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	.0025	.0025	0.0023	0.0025	89	95	75-125	6	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263653

QC Batch: 3855 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 263653001, 263653003, 263653005

METHOD BLANK: 19576 Matrix: Water
Associated Lab Samples: 263653001, 263653003, 263653005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/10/18 16:07	
Arsenic	mg/L	ND	0.0050	0.00057	04/10/18 16:07	
Barium	mg/L	ND	0.010	0.00078	04/10/18 16:07	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/18 16:07	
Cadmium	mg/L	ND	0.0010	0.000093	04/10/18 16:07	
Chromium	mg/L	ND	0.010	0.0016	04/10/18 16:07	
Cobalt	mg/L	ND	0.010	0.00052	04/10/18 16:07	
Lead	mg/L	ND	0.0050	0.00027	04/10/18 16:07	
Lithium	mg/L	ND	0.050	0.00097	04/10/18 16:07	
Molybdenum	mg/L	ND	0.010	0.0019	04/10/18 16:07	
Selenium	mg/L	ND	0.010	0.0014	04/10/18 16:07	
Thallium	mg/L	ND	0.0010	0.00014	04/10/18 16:07	

LABORATORY CONTROL SAMPLE: 19577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.099	99	80-120	
Arsenic	mg/L	.1	0.099	99	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.11	106	80-120	
Cadmium	mg/L	.1	0.098	98	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.10	102	80-120	
Lead	mg/L	.1	0.099	99	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.098	98	80-120	
Selenium	mg/L	.1	0.096	96	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19578 19579

Parameter	Units	263585001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Antimony	mg/L	ND	.1	.1	0.10	0.11	102	106	75-125	4	20	
Arsenic	mg/L	ND	.1	.1	0.10	0.11	102	106	75-125	5	20	
Barium	mg/L	0.022	.1	.1	0.12	0.13	98	103	75-125	4	20	
Beryllium	mg/L	ND	.1	.1	0.10	0.11	103	112	75-125	8	20	
Cadmium	mg/L	ND	.1	.1	0.098	0.11	98	107	75-125	8	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263653

Parameter	Units	19578			19579			% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		263585001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Chromium	mg/L	ND	.1	.1	0.10	0.11	104	110	75-125	6	20			
Cobalt	mg/L	ND	.1	.1	0.11	0.11	103	107	75-125	4	20			
Lead	mg/L	ND	.1	.1	0.10	0.11	101	105	75-125	4	20			
Lithium	mg/L	0.0045J	.1	.1	0.10	0.11	100	107	75-125	7	20			
Molybdenum	mg/L	ND	.1	.1	0.10	0.11	100	106	75-125	5	20			
Selenium	mg/L	ND	.1	.1	0.10	0.11	101	107	75-125	6	20			
Thallium	mg/L	ND	.1	.1	0.10	0.11	100	105	75-125	5	20			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263653

QC Batch: 4189 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 263653001, 263653003, 263653005

METHOD BLANK: 20899 Matrix: Water

Associated Lab Samples: 263653001, 263653003, 263653005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/12/18 05:12	

LABORATORY CONTROL SAMPLE: 20900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.3	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20901 20902

Parameter	Units	263653001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	9.4	9.4	93	94	90-110	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263653

Sample: HGWC-14 **Lab ID: 263653002** Collected: 04/04/18 09:48 Received: 04/05/18 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.365 ± 0.196 (0.284) C:94% T:NA	pCi/L	04/19/18 08:38	13982-63-3	
Radium-228	EPA 9320	1.35 ± 0.485 (0.648) C:77% T:72%	pCi/L	04/25/18 14:33	15262-20-1	
Total Radium	Total Radium Calculation	1.72 ± 0.681 (0.932)	pCi/L	04/26/18 13:25	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263653

Sample: HGWC-13 **Lab ID: 263653004** Collected: 04/04/18 11:15 Received: 04/05/18 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.497 ± 0.229 (0.273) C:81% T:NA	pCi/L	04/19/18 08:38	13982-63-3	
Radium-228	EPA 9320	0.385 ± 0.332 (0.660) C:79% T:74%	pCi/L	04/25/18 14:33	15262-20-1	
Total Radium	Total Radium Calculation	0.882 ± 0.561 (0.933)	pCi/L	04/26/18 13:25	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263653

Sample: FD-02 **Lab ID: 263653006** Collected: 04/04/18 00:00 Received: 04/05/18 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.578 ± 0.246 (0.285) C:86% T:NA	pCi/L	04/19/18 08:38	13982-63-3	
Radium-228	EPA 9320	0.145 ± 0.307 (0.679) C:77% T:83%	pCi/L	04/25/18 14:33	15262-20-1	
Total Radium	Total Radium Calculation	0.723 ± 0.553 (0.964)	pCi/L	04/26/18 13:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263653

QC Batch: 294195

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 263653002, 263653004, 263653006

METHOD BLANK: 1440640

Matrix: Water

Associated Lab Samples: 263653002, 263653004, 263653006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.202 ± 0.146 (0.231) C:87% T:NA	pCi/L	04/19/18 08:37	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263653

QC Batch: 294198

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 263653002, 263653004, 263653006

METHOD BLANK: 1440645

Matrix: Water

Associated Lab Samples: 263653002, 263653004, 263653006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0414 ± 0.317 (0.731) C:80% T:78%	pCi/L	04/25/18 11:24	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 263653

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 263653

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263653001	HGWC-14	EPA 3005A	3855	EPA 6020B	4097
263653003	HGWC-13	EPA 3005A	3855	EPA 6020B	4097
263653005	FD-02	EPA 3005A	3855	EPA 6020B	4097
263653001	HGWC-14	EPA 7470A	4044	EPA 7470A	4091
263653003	HGWC-13	EPA 7470A	4044	EPA 7470A	4091
263653005	FD-02	EPA 7470A	4044	EPA 7470A	4091
263653002	HGWC-14	EPA 9315	294195		
263653004	HGWC-13	EPA 9315	294195		
263653006	FD-02	EPA 9315	294195		
263653002	HGWC-14	EPA 9320	294198		
263653004	HGWC-13	EPA 9320	294198		
263653006	FD-02	EPA 9320	294198		
263653002	HGWC-14	Total Radium Calculation	296141		
263653004	HGWC-13	Total Radium Calculation	296141		
263653006	FD-02	Total Radium Calculation	296141		
263653001	HGWC-14	EPA 300.0	4189		
263653003	HGWC-13	EPA 300.0	4189		
263653005	FD-02	EPA 300.0	4189		

REPORT OF LABORATORY ANALYSIS

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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.

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Macon Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239 Fax
 Requested Due Date: **STANDARD TAT** 5-2 day

Section B

Required Project Information:

Report To: Joju Abraham
 Copy To: **6057426**
 Purchase Order #: **Plant Hammond AP**
 Project Name: **Plant Hammond AP**
 Project #:

Section C

Invoice Information:

Attention: **SLS.LN@PCL@SouthernCo.COM**
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: **betsy.mcDaniel@pacelabs.com**
 Pace Profile #: 327

Regulatory Agency:
 State / Location: **GA**

ITEM #	MATRIX Drinking Water Waste Water Wastewater Product Soil/Solid Oil Wipe Air Other Tissue	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives							App. IV Metals	Fluoride by 300.0	Radium 226/228	Residual Chlorine (Y/N)	Requested/Analyte Filtered (Y/N)										
				START	END	DATE	TIME		DATE	TIME	H2SO4	HNO3	HCl	NaOH	Na2S2O3						Methanol	Other								
1			G	4/1/18	9:35	4/1/18	9:48	1																						
2			G	4/1/18	11:01	4/1/18	11:15	1																						
3			G	4/1/18	-	4/1/18	-	1																						
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELEASED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS										
							Temp in C	Received on	Sealed	Cooler	Intact						
* 5 day TAT per App IV metals and fluoride	DAN GERBS	4/4/2018	14:00	Malik Mubum	4/4/2018	14:00											
	Malik Mubum	4/5/2018	09:56	Mike Nguyen/Pace	4/5/18	09:56											
				Malik Mubum	4/5/18	14:30											

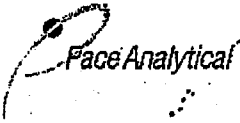
SAMPLER NAME AND SIGNATURE: *DAN GERBS*
 PRINT Name of SAMPLER: **DAN GERBS**
 SIGNATURE of SAMPLER: *[Signature]*
 DATE Signed: **4-4-2018**

NO#: 263653



263653

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO# : 263653

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

PM: BM

Due Date: 04/12/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/5/18 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 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>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 (ie. out of hold, incorrect preservative, out of temp, incorrect containers)

April 27, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

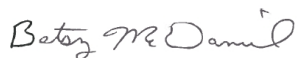
RE: Project: Plant Hammond AP
Pace Project No.: 263654

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 263654

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 263654

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263654001	HGWC-10	Water	04/04/18 09:55	04/05/18 14:30
263654002	HGWC-10	Water	04/04/18 09:55	04/05/18 14:30
263654003	HGWC-12	Water	04/04/18 12:15	04/05/18 14:30
263654004	HGWC-12	Water	04/04/18 12:15	04/05/18 14:30
263654005	HGWC-11	Water	04/04/18 13:18	04/05/18 14:30
263654006	HGWC-11	Water	04/04/18 13:18	04/05/18 14:30
263654007	FB-02	Water	04/04/18 13:50	04/05/18 14:30
263654008	FB-02	Water	04/04/18 13:50	04/05/18 14:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 263654

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263654001	HGWC-10	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263654002	HGWC-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 6020B	CSW	12	PASI-GA
263654003	HGWC-12	EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
263654004	HGWC-12	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
263654005	HGWC-11	EPA 300.0	RLC	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
263654006	HGWC-11	Total Radium Calculation	CMC	1	PASI-PA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
263654007	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263654008	FB-02	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		EPA 300.0	RLC	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
263654008	FB-02	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 6020B	CSW	12	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: HGWC-10		Lab ID: 263654001		Collected: 04/04/18 09:55		Received: 04/05/18 14:30		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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 19:28	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 19:28	7440-38-2		
Barium	0.084	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 19:28	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 19:28	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 19:28	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 19:28	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 19:28	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 19:28	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 19:28	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 19:28	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 19:28	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 19:28	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:01	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 08:30	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: HGWC-12		Lab ID: 263654003		Collected: 04/04/18 12:15		Received: 04/05/18 14:30		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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 19:45	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 19:45	7440-38-2		
Barium	0.083	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 19:45	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 19:45	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 19:45	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 19:45	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 19:45	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 19:45	7439-92-1		
Lithium	0.0080J	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 19:45	7439-93-2		
Molybdenum	0.052	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 19:45	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 19:45	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 19:45	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:03	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 08:51	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: HGWC-11		Lab ID: 263654005		Collected: 04/04/18 13:18		Received: 04/05/18 14:30		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							
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 19:51	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 19:51	7440-38-2	
Barium	0.029	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 19:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 19:51	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 19:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 19:51	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 19:51	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 19:51	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 19:51	7439-93-2	
Molybdenum	0.013	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 19:51	7439-98-7	
Selenium	0.021	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 19:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 19:51	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:06	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.39	mg/L	0.30	0.029	1		04/12/18 09:12	16984-48-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: FB-02		Lab ID: 263654007		Collected: 04/04/18 13:50		Received: 04/05/18 14:30		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							
Antimony	ND	mg/L	0.0030	0.00078	1	04/06/18 09:09	04/10/18 20:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/06/18 09:09	04/10/18 20:02	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	04/06/18 09:09	04/10/18 20:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/06/18 09:09	04/10/18 20:02	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/06/18 09:09	04/10/18 20:02	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	04/06/18 09:09	04/10/18 20:02	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/06/18 09:09	04/10/18 20:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/06/18 09:09	04/10/18 20:02	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/06/18 09:09	04/10/18 20:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/06/18 09:09	04/10/18 20:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/06/18 09:09	04/10/18 20:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/06/18 09:09	04/10/18 20:02	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:08	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 09:33	16984-48-8	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263654

QC Batch: 4044

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 263654001, 263654003, 263654005, 263654007

METHOD BLANK: 20252

Matrix: Water

Associated Lab Samples: 263654001, 263654003, 263654005, 263654007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/10/18 14:59	

LABORATORY CONTROL SAMPLE: 20253

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0022	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20254

20255

Parameter	Units	263498001 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	.0025	.0025	0.0023	0.0025	89	95	75-125	6	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 263654

QC Batch: 3855 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 263654001, 263654003, 263654005, 263654007

METHOD BLANK: 19576 Matrix: Water
Associated Lab Samples: 263654001, 263654003, 263654005, 263654007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/10/18 16:07	
Arsenic	mg/L	ND	0.0050	0.00057	04/10/18 16:07	
Barium	mg/L	ND	0.010	0.00078	04/10/18 16:07	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/18 16:07	
Cadmium	mg/L	ND	0.0010	0.000093	04/10/18 16:07	
Chromium	mg/L	ND	0.010	0.0016	04/10/18 16:07	
Cobalt	mg/L	ND	0.010	0.00052	04/10/18 16:07	
Lead	mg/L	ND	0.0050	0.00027	04/10/18 16:07	
Lithium	mg/L	ND	0.050	0.00097	04/10/18 16:07	
Molybdenum	mg/L	ND	0.010	0.0019	04/10/18 16:07	
Selenium	mg/L	ND	0.010	0.0014	04/10/18 16:07	
Thallium	mg/L	ND	0.0010	0.00014	04/10/18 16:07	

LABORATORY CONTROL SAMPLE: 19577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.099	99	80-120	
Arsenic	mg/L	.1	0.099	99	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.11	106	80-120	
Cadmium	mg/L	.1	0.098	98	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.10	102	80-120	
Lead	mg/L	.1	0.099	99	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.098	98	80-120	
Selenium	mg/L	.1	0.096	96	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19578 19579

Parameter	Units	263585001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Spike Conc.						
Antimony	mg/L	ND	.1	.1	0.10	0.11	102	106	75-125	4	20	
Arsenic	mg/L	ND	.1	.1	0.10	0.11	102	106	75-125	5	20	
Barium	mg/L	0.022	.1	.1	0.12	0.13	98	103	75-125	4	20	
Beryllium	mg/L	ND	.1	.1	0.10	0.11	103	112	75-125	8	20	
Cadmium	mg/L	ND	.1	.1	0.098	0.11	98	107	75-125	8	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263654

Parameter	Units	19578		19579		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		263585001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Chromium	mg/L	ND	.1	.1	0.10	0.11	104	110	75-125	6	20		
Cobalt	mg/L	ND	.1	.1	0.11	0.11	103	107	75-125	4	20		
Lead	mg/L	ND	.1	.1	0.10	0.11	101	105	75-125	4	20		
Lithium	mg/L	0.0045J	.1	.1	0.10	0.11	100	107	75-125	7	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.11	100	106	75-125	5	20		
Selenium	mg/L	ND	.1	.1	0.10	0.11	101	107	75-125	6	20		
Thallium	mg/L	ND	.1	.1	0.10	0.11	100	105	75-125	5	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 263654

QC Batch: 4189 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Associated Lab Samples: 263654001, 263654003, 263654005, 263654007

METHOD BLANK: 20899 Matrix: Water

Associated Lab Samples: 263654001, 263654003, 263654005, 263654007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	04/12/18 05:12	

LABORATORY CONTROL SAMPLE: 20900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.3	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20901 20902

Parameter	Units	263653001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	9.4	9.4	93	94	90-110	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: HGWC-10 **Lab ID: 263654002** Collected: 04/04/18 09:55 Received: 04/05/18 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.179 ± 0.133 (0.237) C:86% T:NA	pCi/L	04/19/18 08:39	13982-63-3	
Radium-228	EPA 9320	0.536 ± 0.364 (0.692) C:74% T:86%	pCi/L	04/20/18 15:15	15262-20-1	
Total Radium	Total Radium Calculation	0.715 ± 0.497 (0.929)	pCi/L	04/25/18 12:52	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263654

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.312 ± 0.149 (0.184) C:85% T:NA	pCi/L	04/19/18 08:39	13982-63-3	
Radium-228	EPA 9320	0.644 ± 0.402 (0.749) C:75% T:81%	pCi/L	04/20/18 15:15	15262-20-1	
Total Radium	Total Radium Calculation	0.956 ± 0.551 (0.933)	pCi/L	04/25/18 12:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: HGWC-11 **Lab ID: 263654006** Collected: 04/04/18 13:18 Received: 04/05/18 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.585 ± 0.194 (0.156) C:95% T:NA	pCi/L	04/19/18 08:39	13982-63-3	
Radium-228	EPA 9320	0.910 ± 0.459 (0.807) C:75% T:81%	pCi/L	04/20/18 15:15	15262-20-1	
Total Radium	Total Radium Calculation	1.50 ± 0.653 (0.963)	pCi/L	04/25/18 12:52	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263654

Sample: FB-02 **Lab ID: 263654008** Collected: 04/04/18 13:50 Received: 04/05/18 14:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.311 ± 0.147 (0.193) C:90% T:NA	pCi/L	04/19/18 08:39	13982-63-3	
Radium-228	EPA 9320	0.259 ± 0.347 (0.740) C:72% T:84%	pCi/L	04/20/18 15:15	15262-20-1	
Total Radium	Total Radium Calculation	0.570 ± 0.494 (0.933)	pCi/L	04/25/18 12:52	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 263654

QC Batch:	294196	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	263654002, 263654004, 263654006, 263654008		

METHOD BLANK:	1440643	Matrix:	Water
Associated Lab Samples:	263654002, 263654004, 263654006, 263654008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0447 ± 0.264 (0.636) C:75% T:85%	pCi/L	04/20/18 11:37	

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: Plant Hammond AP

Pace Project No.: 263654

QC Batch:	294194	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	263654002, 263654004, 263654006, 263654008		

METHOD BLANK:	1440635	Matrix:	Water
Associated Lab Samples:	263654002, 263654004, 263654006, 263654008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.260 ± 0.105 (0.126) C:91% T:NA	pCi/L	04/18/18 19:04	

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 Hammond AP
Pace Project No.: 263654

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 263654

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263654001	HGWC-10	EPA 3005A	3855	EPA 6020B	4097
263654003	HGWC-12	EPA 3005A	3855	EPA 6020B	4097
263654005	HGWC-11	EPA 3005A	3855	EPA 6020B	4097
263654007	FB-02	EPA 3005A	3855	EPA 6020B	4097
263654001	HGWC-10	EPA 7470A	4044	EPA 7470A	4091
263654003	HGWC-12	EPA 7470A	4044	EPA 7470A	4091
263654005	HGWC-11	EPA 7470A	4044	EPA 7470A	4091
263654007	FB-02	EPA 7470A	4044	EPA 7470A	4091
263654002	HGWC-10	EPA 9315	294194		
263654004	HGWC-12	EPA 9315	294194		
263654006	HGWC-11	EPA 9315	294194		
263654008	FB-02	EPA 9315	294194		
263654002	HGWC-10	EPA 9320	294196		
263654004	HGWC-12	EPA 9320	294196		
263654006	HGWC-11	EPA 9320	294196		
263654008	FB-02	EPA 9320	294196		
263654002	HGWC-10	Total Radium Calculation	295928		
263654004	HGWC-12	Total Radium Calculation	295928		
263654006	HGWC-11	Total Radium Calculation	295928		
263654008	FB-02	Total Radium Calculation	295928		
263654001	HGWC-10	EPA 300.0	4189		
263654003	HGWC-12	EPA 300.0	4189		
263654005	HGWC-11	EPA 300.0	4189		
263654007	FB-02	EPA 300.0	4189		

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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.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manser Road
 Atlanta, GA 30338
 Email: jabraham@southernco.com
 Phone: (404) 506-7239
 Requested Due Date: 5/4/18

Section B
 Required Project Information:
 Report To: Jojo Abraham
 Copy To: Gwynn LLC
 Purchase Order #:
 Project Name: Plant Hammond AP
 Project #:
 Pace Project Manager: babsy.mcdaniel@pacelabs.com
 Pace Profile #: 327

Section C
 Invoice Information:
 Attention: SCSINVOICES@SouthernCo.com
 Company Name:
 Address:
 State/Location: GA

#	ITEM	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Received on	Temp in C	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
			START DATE-TIME	END DATE-TIME		DATE	TIME									
1	HGWC-10	WT G	04/04/18 0935	04/04/18 0955	G	4	1	3	Unpreserved	Y	N	04/04/18				
2	HGWC-12	WT G	04/04/18 1155	04/04/18 1215	G	4	1	3	Unpreserved	Y	N	04/04/18				
3	HGWC-11	WT G	04/04/18 1305	04/04/18 1318	G	4	1	3	Unpreserved	Y	N	04/04/18				
4	FB-02	WT G	04/04/18 1345	04/04/18 1350	G	4	1	3	Unpreserved	Y	N	04/04/18				
5																
6																
7																
8																
9																
10																
11																
12																

ADDITIONAL COMMENTS: 5 day TAT for App IV metals and fluoride

RELINQUISHED BY / AFFILIATION: *Jojo Abraham* / Georgia Power

ACCEPTED BY / AFFILIATION: *Malicia Mfumbur* / (Mike Nguyen / Pace) / Mcdanielman

DATE: 4-4-18 14:00
 04/05/18 09:56
 04/05/18 14:30

DATE SIGNED: 4-4-18

SIGNATURE OF SAMPLER: *Aaron Reeder*

SAMPLER NAME AND SIGNATURE: *Aaron Reeder*

PRINT NAME OF SAMPLER: Aaron Reeder

SIGNATURE OF SAMPLER: *Aaron Reeder*

WO#: 263654

263654

Page 21 of 22

Sample Condition Upon Receipt



Client Name: GIA Power Project # _____

WO#: 263654

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

PM: BM Due Date: 04/12/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.3

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/5/18 MK

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>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.

July 06, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265792

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 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,



Nikita Kuruganty for
Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



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CERTIFICATIONS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

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

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

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: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265792001	HGWA-2	Water	06/04/18 14:26	06/06/18 10:45
265792002	HGWA-1	Water	06/04/18 18:51	06/06/18 10:45

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265792001	HGWA-2	EPA 6020B	CSW	10	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265792002	HGWA-1	EPA 6020B	CSW	10	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

Sample: HGWA-2		Lab ID: 265792001		Collected: 06/04/18 14:26		Received: 06/06/18 10:45		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	0.00088J	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 17:13	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 17:13	7440-39-3	
Boron	0.036J	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 17:13	7440-42-8	
Cadmium	0.00014J	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 17:13	7440-43-9	
Calcium	19.1	mg/L	5.0	0.14	10	06/13/18 09:18	06/18/18 17:19	7440-70-2	M6
Cobalt	0.025	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 17:13	7440-48-4	
Lithium	0.0016J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 17:13	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 17:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 17:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 17:13	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	140	mg/L	25.0	10.0	1		06/08/18 16:25		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.1	mg/L	0.25	0.024	1		06/12/18 16:56	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		06/12/18 16:56	16984-48-8	
Sulfate	47.8	mg/L	2.0	0.034	2		06/21/18 22:49	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

Sample: HGWA-1		Lab ID: 265792002		Collected: 06/04/18 18:51		Received: 06/06/18 10:45		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	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 18:08	7440-38-2		
Barium	0.035	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 18:08	7440-39-3		
Boron	0.020J	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 18:08	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 18:08	7440-43-9		
Calcium	124	mg/L	25.0	0.69	50	06/13/18 09:18	06/20/18 13:26	7440-70-2		
Cobalt	ND	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 18:08	7440-48-4		
Lithium	0.0010J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 18:08	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 18:08	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 18:08	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 18:08	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	415	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	13.1	mg/L	0.25	0.024	1		06/12/18 17:17	16887-00-6		
Fluoride	0.074J	mg/L	0.30	0.029	1		06/12/18 17:17	16984-48-8		
Sulfate	71.8	mg/L	2.0	0.034	2		06/21/18 23:10	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

QC Batch: 7923 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 265792001, 265792002

METHOD BLANK: 36780 Matrix: Water

Associated Lab Samples: 265792001, 265792002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	06/18/18 16:50	
Barium	mg/L	ND	0.010	0.00078	06/18/18 16:50	
Boron	mg/L	ND	0.040	0.0039	06/18/18 16:50	
Cadmium	mg/L	ND	0.0010	0.000093	06/18/18 16:50	
Calcium	mg/L	ND	0.50	0.014	06/18/18 16:50	
Cobalt	mg/L	ND	0.010	0.00052	06/18/18 16:50	
Lithium	mg/L	ND	0.050	0.00097	06/18/18 16:50	
Molybdenum	mg/L	ND	0.010	0.0019	06/18/18 16:50	
Selenium	mg/L	ND	0.010	0.0014	06/18/18 16:50	
Thallium	mg/L	ND	0.0010	0.00014	06/18/18 16:50	

LABORATORY CONTROL SAMPLE: 36781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	1.1	110	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36825 36826

Parameter	Units	265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00088J	.1	.1	0.10	0.10	102	99	75-125	3	20	
Barium	mg/L	0.11	.1	.1	0.23	0.22	113	111	75-125	1	20	
Boron	mg/L	0.036J	1	1	1.1	1.1	108	102	75-125	6	20	
Cadmium	mg/L	0.00014J	.1	.1	0.10	0.099	101	99	75-125	2	20	
Calcium	mg/L	19.1	1	1	19.4	19.3	37	30	75-125	0	20	M6
Cobalt	mg/L	0.025	.1	.1	0.13	0.12	101	97	75-125	3	20	
Lithium	mg/L	0.0016J	.1	.1	0.11	0.099	103	98	75-125	6	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	101	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		36825			36826							
Parameter	Units	265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265792

QC Batch: 7599 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 265792001, 265792002

LABORATORY CONTROL SAMPLE: 35647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

SAMPLE DUPLICATE: 35648

Parameter	Units	265789026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	65.0	5	10	

SAMPLE DUPLICATE: 35649

Parameter	Units	265791003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	723	714	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

QC Batch: 7772 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265792001, 265792002

METHOD BLANK: 36164 Matrix: Water

Associated Lab Samples: 265792001, 265792002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/12/18 13:24	
Fluoride	mg/L	ND	0.30	0.029	06/12/18 13:24	
Sulfate	mg/L	ND	1.0	0.017	06/12/18 13:24	

LABORATORY CONTROL SAMPLE: 36165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36166 36167

Parameter	Units	265790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	2.6	10	10	12.7	12.8	101	101	90-110	0	15	
Fluoride	mg/L	0.032J	10	10	10.1	10.1	100	100	90-110	0	15	
Sulfate	mg/L	1.4	10	10	11.3	11.5	99	101	90-110	2	15	

MATRIX SPIKE SAMPLE: 36168

Parameter	Units	265790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.3	10	15.5	103	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.73J	10	11.0	102	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

Sample: HGWA-2 **Lab ID: 265792001** Collected: 06/04/18 14:26 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.652 ± 0.316 (0.377) C:91% T:NA	pCi/L	06/14/18 08:20	13982-63-3	
Radium-228	EPA 9320	0.323 ± 0.616 (1.35) C:77% T:75%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.975 ± 0.932 (1.73)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

Sample: HGWA-1 **Lab ID: 265792002** Collected: 06/04/18 18:51 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.444 ± 0.288 (0.490) C:91% T:NA	pCi/L	06/14/18 08:20	13982-63-3	
Radium-228	EPA 9320	0.686 ± 0.481 (0.926) C:78% T:75%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	1.13 ± 0.769 (1.42)	pCi/L	07/05/18 14:46	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265792001, 265792002

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265792001, 265792002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

QC Batch: 301690

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265792001, 265792002

METHOD BLANK: 1476536

Matrix: Water

Associated Lab Samples: 265792001, 265792002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.215 (0.375) C:88% T:NA	pCi/L	06/14/18 08:33	

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QUALIFIERS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265792

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 - 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.

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

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 Hammond AP 1&2, 3&4

Pace Project No.: 265792

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265792001	HGWA-2	EPA 3005A	7923	EPA 6020B	8195
265792002	HGWA-1	EPA 3005A	7923	EPA 6020B	8195
265792001	HGWA-2	EPA 9315	301690		
265792002	HGWA-1	EPA 9315	301690		
265792001	HGWA-2	EPA 9320	301898		
265792002	HGWA-1	EPA 9320	301898		
265792001	HGWA-2	Total Radium Calculation	304777		
265792002	HGWA-1	Total Radium Calculation	304777		
265792001	HGWA-2	SM 2540C	7599		
265792002	HGWA-1	SM 2540C	7599		
265792001	HGWA-2	EPA 300.0	7772		
265792002	HGWA-1	EPA 300.0	7772		

REPORT OF LABORATORY ANALYSIS

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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

Section A Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manier Road Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239 Fax

Section B Required Project Information:

Report To: Joyu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10346606
 Project Name: Hammond AP
 Project #: STANDARD TAT

Section C Invoice Information:

Attention: scsinvoices@southernco.com
 Company Name: Address: State / Location: GA
 Pace Quote: Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives											Y/N	Analyzes Test	Requested Analytes Filtered (Y/N)											Residual Chlorine (Y/N)							
			START DATE	START TIME			END DATE	END TIME	H2SO4	HNO3	HCl	NaOH	Na2SO3	Methanol	Other	Methals App III	Radium 226/228			TDS by 2540C	Chloride, Fluoride, Sulfate	Arsenic, Barium, Cobalt (trace)	Lithium, Selenium, Thallium (trace)	Cadmium (60206)	Molybdenum (60208)													
1	HGWA-2	WTG	6/5/18	1410	6/6/18	1426	5	2	3	Unpreserved																												
2	HGWA-1	WTG	6/6/18	1531	6/6/18	1851	5	2	3																													
3																																						
4																																						
5																																						
6																																						
7																																						
8																																						
9																																						
10																																						
11																																						
12																																						

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCERTED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received on	Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
Noelia Myshen	6/5/18	2105	Bob Blaw	6/5/18	2005						
Bob Blaw	6/6/18	935	Rach Taylor	6/6/18	935						
Rach Taylor	6/6/18	1045	Phaedra J. Fule	6/6/18	1045						

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Myshen DATE Signed: 06/04/18

SIGNATURE of SAMPLER: *Noelia Myshen*

WD# : 265792

265792

Sample Condition Upon Receipt

WO#: 265792



Client Name: GA Power

PM: BM Due Date: 07/05/18 CLIENT: GAPower-CCR

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

Cooler Temperature 2.6 Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No Comments: Samples on ice, cooling process has begun

Date and Initials of person examining contents: 6/6/18 COY

Table with 16 rows of checklist items (Chain of Custody Present, Chain of Custody Filled Out, etc.) and checkboxes for Yes, No, N/A.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date:

July 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265793

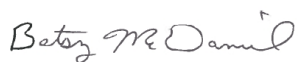
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 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.

REV07172018_report revised to remove cadmium data per consultant request.

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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265793

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265793001	HGWC-7	Water	06/05/18 18:09	06/06/18 10:45

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265793001	HGWC-7	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

Sample: HGWC-7		Lab ID: 265793001		Collected: 06/05/18 18:09		Received: 06/06/18 10:45		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	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 18:19	7440-38-2	
Barium	0.071	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 18:19	7440-39-3	
Boron	0.86	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 18:19	7440-42-8	
Calcium	99.8	mg/L	5.0	0.14	10	06/13/18 09:18	06/18/18 18:25	7440-70-2	
Cobalt	0.00074J	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 18:19	7440-48-4	
Lithium	0.0022J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 18:19	7439-93-2	
Molybdenum	0.036	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 18:19	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 18:19	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 18:19	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	459	mg/L	25.0	10.0	1		06/08/18 16:25		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	52.3	mg/L	1.2	0.12	5		06/21/18 23:31	16887-00-6	
Fluoride	0.099J	mg/L	0.30	0.029	1		06/12/18 19:03	16984-48-8	
Sulfate	117	mg/L	5.0	0.085	5		06/21/18 23:31	14808-79-8	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

QC Batch: 7923 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 265793001

METHOD BLANK: 36780 Matrix: Water

Associated Lab Samples: 265793001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	06/18/18 16:50	
Barium	mg/L	ND	0.010	0.00078	06/18/18 16:50	
Boron	mg/L	ND	0.040	0.0039	06/18/18 16:50	
Calcium	mg/L	ND	0.50	0.014	06/18/18 16:50	
Cobalt	mg/L	ND	0.010	0.00052	06/18/18 16:50	
Lithium	mg/L	ND	0.050	0.00097	06/18/18 16:50	
Molybdenum	mg/L	ND	0.010	0.0019	06/18/18 16:50	
Selenium	mg/L	ND	0.010	0.0014	06/18/18 16:50	
Thallium	mg/L	ND	0.0010	0.00014	06/18/18 16:50	

LABORATORY CONTROL SAMPLE: 36781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	1.1	110	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36825 36826

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		265792001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.00088J	.1	.1	0.10	0.10	102	99	75-125	3	20	
Barium	mg/L	0.11	.1	.1	0.23	0.22	113	111	75-125	1	20	
Boron	mg/L	0.036J	1	1	1.1	1.1	108	102	75-125	6	20	
Calcium	mg/L	19.1	1	1	19.4	19.3	37	30	75-125	0	20	M6
Cobalt	mg/L	0.025	.1	.1	0.13	0.12	101	97	75-125	3	20	
Lithium	mg/L	0.0016J	.1	.1	0.11	0.099	103	98	75-125	6	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	101	99	75-125	1	20	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

QC Batch: 7599	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 265793001	

LABORATORY CONTROL SAMPLE: 35647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

SAMPLE DUPLICATE: 35648

Parameter	Units	265789026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	65.0	5	10	

SAMPLE DUPLICATE: 35649

Parameter	Units	265791003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	723	714	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265793

QC Batch: 7772 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265793001

METHOD BLANK: 36164 Matrix: Water
Associated Lab Samples: 265793001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/12/18 13:24	
Fluoride	mg/L	ND	0.30	0.029	06/12/18 13:24	
Sulfate	mg/L	ND	1.0	0.017	06/12/18 13:24	

LABORATORY CONTROL SAMPLE: 36165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36166 36167

Parameter	Units	265790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	2.6	10	10	12.7	12.8	101	101	90-110	0	15	
Fluoride	mg/L	0.032J	10	10	10.1	10.1	100	100	90-110	0	15	
Sulfate	mg/L	1.4	10	10	11.3	11.5	99	101	90-110	2	15	

MATRIX SPIKE SAMPLE: 36168

Parameter	Units	265790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.3	10	15.5	103	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.73J	10	11.0	102	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

Sample: HGWC-7 **Lab ID: 265793001** Collected: 06/05/18 18:09 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.465 ± 0.264 (0.370) C:87% T:NA	pCi/L	06/14/18 08:21	13982-63-3	
Radium-228	EPA 9320	0.520 ± 0.467 (0.951) C:77% T:81%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.985 ± 0.731 (1.32)	pCi/L	07/05/18 14:46	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265793001

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265793001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

QC Batch: 301690

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265793001

METHOD BLANK: 1476536

Matrix: Water

Associated Lab Samples: 265793001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.215 (0.375) C:88% T:NA	pCi/L	06/14/18 08:33	

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QUALIFIERS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

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 - 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.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265793

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265793001	HGWC-7	EPA 3005A	7923	EPA 6020B	8195
265793001	HGWC-7	EPA 9315	301690		
265793001	HGWC-7	EPA 9320	301898		
265793001	HGWC-7	Total Radium Calculation	304777		
265793001	HGWC-7	SM 2540C	7599		
265793001	HGWC-7	EPA 300.0	7772		

REPORT OF LABORATORY ANALYSIS

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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.

Section A
Required Client Information:
 Company Georgia Power - Coal Combustion Residuals
 Address 2480 Manier Road
 Atlanta, GA 30339
 Email jabraham@southernco.com
 Phone (404)506-7239 Fax
 Requested Due Date: SIP TOT

Section B
Required Project Information:
 Report To Joju Abraham / Lauren Petty
 Copy To Geosyntec
 Purchase Order # SCS10346606
 Project Name Hammond AP
 Project #

Section C
Invoice Information:
 Attention SCSInvoices@southernco.com
 Company Name
 Address
 Pace Quote:
 Pace Project Manager: betsy.mcDaniel@pacelabs.com
 Pace Profile # 327

Regulatory Agency
 State / Location GA

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION		PRESERVATIVES		ANALYSES TEST Y/N	Requested Analytes Filtered (Y/N)	SAMPLE CONDITIONS					
			START DATE TIME	END DATE TIME			UNPRESERVED	H2SO4	HNO3	HCl			NaOH	Na2SO3	Methanol	Other	DATE	TIME
1	HGWG-7	DW	6/5/18 1724	6/5/18 1809	G		2				Y							
2		WT									Y							
3		WW									Y							
4		P									Y							
5		SL									Y							
6		CL									Y							
7		WP									Y							
8		AR									Y							
9		OT									Y							
10		TS									Y							
11																		
12																		

ADDITIONAL COMMENTS
 Nardos Tilahur
 Modica Mambon
 Zach Taylor
 6/6/18 1045

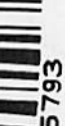
ACCEPTED BY / AFFILIATION
 Modica Mambon
 Zach Taylor
 Pauline Johnson

DATE
 6/5/18 1910
 6/5/18 2105
 6/6/18 935
 6/6/18 1045

DATE SIGNED: 6/5/18
 SIGNATURE OF SAMPLER: Nardos Tilahur
 SIGNATURE OF SAMPLER: [Signature]

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Nardos Tilahur
 SIGNATURE OF SAMPLER: [Signature]

NO# : 265793
 55793



Page 1 of 1



Sample Condition Upon Receipt

WO#: 265793

Client Name: GA Power

PM: BM Due Date: 07/05/18 CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

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 THR082 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.6 Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 6/6/18 COY

Comments:

Table with 16 rows of checklist items including Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Sample Labels match COC, All containers needing preservation have been checked, Samples checked for dechlorination, Headspace in VOA Vials, Trip Blank Present, and Pace Trip Blank Lot #.

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)

June 29, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

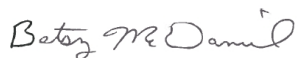
RE: Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265795

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265795

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265795001	FD-01	Water	06/05/18 00:00	06/06/18 10:45
265795002	HGWC-13	Water	06/05/18 15:45	06/06/18 10:45
265795003	HGWC-18	Water	06/05/18 17:58	06/06/18 10:45

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265795001	FD-01	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265795002	HGWC-13	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265795003	HGWC-18	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Sample: FD-01		Lab ID: 265795001		Collected: 06/05/18 00:00		Received: 06/06/18 10:45		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	0.41	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 19:05	7440-38-2	
Barium	0.13	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 19:05	7440-39-3	
Boron	1.4	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 19:05	7440-42-8	
Calcium	117	mg/L	25.0	0.69	50	06/13/18 09:18	06/20/18 13:37	7440-70-2	
Cobalt	0.0022J	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 19:05	7440-48-4	
Lithium	0.033J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 19:05	7439-93-2	
Molybdenum	0.027	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 19:05	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 19:05	7782-49-2	
Thallium	0.00035J	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 19:05	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	540	mg/L	25.0	10.0	1		06/08/18 16:25		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	75.6	mg/L	1.2	0.12	5		06/22/18 00:12	16887-00-6	
Fluoride	0.49	mg/L	0.30	0.029	1		06/12/18 20:28	16984-48-8	
Sulfate	188	mg/L	5.0	0.085	5		06/22/18 00:12	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Sample: HGWC-13		Lab ID: 265795002		Collected: 06/05/18 15:45		Received: 06/06/18 10:45		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	0.38	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 19:17	7440-38-2	
Barium	0.13	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 19:17	7440-39-3	
Boron	1.3	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 19:17	7440-42-8	
Calcium	110	mg/L	25.0	0.69	50	06/13/18 09:18	06/20/18 13:43	7440-70-2	
Cobalt	0.0023J	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 19:17	7440-48-4	
Lithium	0.031J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 19:17	7439-93-2	
Molybdenum	0.027	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 19:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 19:17	7782-49-2	
Thallium	0.00035J	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 19:17	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	528	mg/L	25.0	10.0	1		06/08/18 16:25		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	72.3	mg/L	1.2	0.12	5		06/22/18 01:55	16887-00-6	
Fluoride	0.47	mg/L	0.30	0.029	1		06/12/18 20:49	16984-48-8	
Sulfate	187	mg/L	5.0	0.085	5		06/22/18 01:55	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Sample: HGWC-18		Lab ID: 265795003		Collected: 06/05/18 17:58		Received: 06/06/18 10:45		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	0.0080	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 19:28	7440-38-2		
Barium	0.030	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 19:28	7440-39-3		
Boron	8.4	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 19:28	7440-42-8		
Cadmium	0.0022	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 19:28	7440-43-9		
Calcium	425	mg/L	250	6.9	500	06/13/18 09:18	06/20/18 13:49	7440-70-2		
Cobalt	0.19	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 19:28	7440-48-4		
Lithium	0.013J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 19:28	7439-93-2		
Selenium	0.038	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 19:28	7782-49-2		
Thallium	0.00016J	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 19:28	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	1880	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	261	mg/L	12.5	1.2	50		06/22/18 02:16	16887-00-6		
Fluoride	0.66	mg/L	0.30	0.029	1		06/12/18 21:10	16984-48-8		
Sulfate	962	mg/L	50.0	0.85	50		06/22/18 02:16	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265795

QC Batch: 7923 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265795001, 265795002, 265795003

METHOD BLANK: 36780 Matrix: Water
Associated Lab Samples: 265795001, 265795002, 265795003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	06/18/18 16:50	
Barium	mg/L	ND	0.010	0.00078	06/18/18 16:50	
Boron	mg/L	ND	0.040	0.0039	06/18/18 16:50	
Cadmium	mg/L	ND	0.0010	0.000093	06/18/18 16:50	
Calcium	mg/L	ND	0.50	0.014	06/18/18 16:50	
Cobalt	mg/L	ND	0.010	0.00052	06/18/18 16:50	
Lithium	mg/L	ND	0.050	0.00097	06/18/18 16:50	
Molybdenum	mg/L	ND	0.010	0.0019	06/18/18 16:50	
Selenium	mg/L	ND	0.010	0.0014	06/18/18 16:50	
Thallium	mg/L	ND	0.0010	0.00014	06/18/18 16:50	

LABORATORY CONTROL SAMPLE: 36781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	1.1	110	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36825 36826

Parameter	Units	265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00088J	.1	.1	0.10	0.10	102	99	75-125	3	20	
Barium	mg/L	0.11	.1	.1	0.23	0.22	113	111	75-125	1	20	
Boron	mg/L	0.036J	1	1	1.1	1.1	108	102	75-125	6	20	
Cadmium	mg/L	0.00014J	.1	.1	0.10	0.099	101	99	75-125	2	20	
Calcium	mg/L	19.1	1	1	19.4	19.3	37	30	75-125	0	20	M6
Cobalt	mg/L	0.025	.1	.1	0.13	0.12	101	97	75-125	3	20	
Lithium	mg/L	0.0016J	.1	.1	0.11	0.099	103	98	75-125	6	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	101	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

		36825			36826								
Parameter	Units	265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

QC Batch:	7599	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	265795001, 265795002, 265795003		

LABORATORY CONTROL SAMPLE: 35647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

SAMPLE DUPLICATE: 35648

Parameter	Units	265789026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	65.0	5	10	

SAMPLE DUPLICATE: 35649

Parameter	Units	265791003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	723	714	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265795

QC Batch: 7772 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265795001, 265795002, 265795003

METHOD BLANK: 36164 Matrix: Water
Associated Lab Samples: 265795001, 265795002, 265795003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/12/18 13:24	
Fluoride	mg/L	ND	0.30	0.029	06/12/18 13:24	
Sulfate	mg/L	ND	1.0	0.017	06/12/18 13:24	

LABORATORY CONTROL SAMPLE: 36165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36166 36167

Parameter	Units	265790001		265790002		265790001		265790002		% Rec Limits	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS % Rec	MSD % Rec	MS % Rec	MSD % Rec			
Chloride	mg/L	2.6	10	10	10	12.7	12.8	101	101	90-110	0	15
Fluoride	mg/L	0.032J	10	10	10	10.1	10.1	100	100	90-110	0	15
Sulfate	mg/L	1.4	10	10	10	11.3	11.5	99	101	90-110	2	15

MATRIX SPIKE SAMPLE: 36168

Parameter	Units	265790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.3	10	15.5	103	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.73J	10	11.0	102	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Sample: FD-01 **Lab ID: 265795001** Collected: 06/05/18 00:00 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.349 ± 0.231 (0.349) C:92% T:NA	pCi/L	06/14/18 08:33	13982-63-3	
Radium-228	EPA 9320	0.762 ± 0.462 (0.852) C:67% T:83%	pCi/L	06/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	1.11 ± 0.693 (1.20)	pCi/L	06/28/18 14:25	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Sample: HGWC-13 **Lab ID: 265795002** Collected: 06/05/18 15:45 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.544 ± 0.283 (0.372) C:90% T:NA	pCi/L	06/14/18 08:33	13982-63-3	
Radium-228	EPA 9320	0.555 ± 0.449 (0.896) C:71% T:81%	pCi/L	06/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	1.10 ± 0.732 (1.27)	pCi/L	06/28/18 14:25	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

Sample: HGWC-18 **Lab ID: 265795003** Collected: 06/05/18 17:58 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.39 ± 0.447 (0.368) C:94% T:NA	pCi/L	06/14/18 08:33	13982-63-3	
Radium-228	EPA 9320	0.519 ± 0.458 (0.922) C:75% T:69%	pCi/L	06/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	1.91 ± 0.905 (1.29)	pCi/L	06/28/18 14:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

QC Batch: 301897

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265795001, 265795002, 265795003

METHOD BLANK: 1477324

Matrix: Water

Associated Lab Samples: 265795001, 265795002, 265795003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.201 ± 0.377 (0.827) C:68% T:84%	pCi/L	06/27/18 15:05	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

QC Batch: 301690 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 265795001, 265795002, 265795003

METHOD BLANK: 1476536 Matrix: Water

Associated Lab Samples: 265795001, 265795002, 265795003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.215 (0.375) C:88% T:NA	pCi/L	06/14/18 08:33	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265795

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 - 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.

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

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 Hammond AP 1&2, 3&4

Pace Project No.: 265795

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265795001	FD-01	EPA 3005A	7923	EPA 6020B	8195
265795002	HGWC-13	EPA 3005A	7923	EPA 6020B	8195
265795003	HGWC-18	EPA 3005A	7923	EPA 6020B	8195
265795001	FD-01	EPA 9315	301690		
265795002	HGWC-13	EPA 9315	301690		
265795003	HGWC-18	EPA 9315	301690		
265795001	FD-01	EPA 9320	301897		
265795002	HGWC-13	EPA 9320	301897		
265795003	HGWC-18	EPA 9320	301897		
265795001	FD-01	Total Radium Calculation	304047		
265795002	HGWC-13	Total Radium Calculation	304047		
265795003	HGWC-18	Total Radium Calculation	304047		
265795001	FD-01	SM 2540C	7599		
265795002	HGWC-13	SM 2540C	7599		
265795003	HGWC-18	SM 2540C	7599		
265795001	FD-01	EPA 300.0	7772		
265795002	HGWC-13	EPA 300.0	7772		
265795003	HGWC-18	EPA 300.0	7772		

REPORT OF LABORATORY ANALYSIS

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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.

Section A

Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Marner Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: **SATURDAY**

Section B
Required Project Information:
 Report To: Jopu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP
 Project #: **SATURDAY**

Section C

Invoice Information:
 Attention: SCSInvoices@southernco.com
 Company Name:
 Address:
 Pace Project Manager: beisy.mcdaniel@pacelabs.com
 Pace Profile #: 327

State / Location: GA

Regulatory Agency:

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES							ANALYSES TEST Y/N	REQUESTED ANALYSIS FILTERED (Y/N)											RECEIVED ON	TEMP IN C	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)							
			START DATE	START TIME			END DATE	END TIME	UNPRESERVED	H2SO4	HNO3	HCl	NaOH		Na2S2O3	Methanol	Other	Metals App III	Radium 226/228	TDS by 2540C	Chloride, Fluoride, Sulfate	Arsenic, Barium, Cobalt, Lead	Lithium, Selenium, Thallium	Cadmium (6020)	Molybdenum (6020)							Residual Chlorine (Y/N)						
1	FD-01	G	6/5/18		6/5/18																																	
2	HGWC-13	G	6/5/18	15:30	6/5/18	15:15	3																															
3	HGWC-18	G	6/5/18	17:43	6/5/18	17:58	3																															

TEST BY ITENE DG 06-05-2018

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
DAN GIBBS	06/05/18	19:00	Medina Muehners	06/05/18	19:00	Received on	Y
Medina Muehners	6/5/18	21:05	W B Law	6/5/18	21:05	Ice (Y/N)	Y
W B Law	6/6/18	9:35	Zach Taylor	6/6/18	9:35	Custody (Y/N)	Y
Zach Taylor	6/6/18	19:45	Paula Jank	6/6/18	19:45	Sealed Cooler (Y/N)	Y
SAMPLER NAME AND SIGNATURE							
PRINT Name of SAMPLER: DAN GIBBS							
SIGNATURE of SAMPLER: <i>[Signature]</i>							
DATE Signed: 06/05/2018							

W0# : 265795
265795





Sample Condition Upon Receipt

WO#: 265795

Client Name: GA Power

PM: BM Due Date: 07/05/18
CLIENT: GAPower-CCR

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 2.6 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments: Date and Initials of person examining contents: 6/6/18 COY

Table with 16 rows of checklist items (Chain of Custody Present, Chain of Custody Filled Out, etc.) and checkboxes for Yes/No/N/A.

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Field Data Required? Y / N

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 Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

July 09, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339


RE: Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092	North Carolina Certification #: 381
Florida DOH Certification #: E87315	South Carolina Certification #: 98011001
Georgia DW Inorganics Certification #: 812	Texas Certification #: T104704397-08-TX
Georgia DW Microbiology Certification #: 812	Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265796001	HGWA-5	Water	06/05/18 10:55	06/06/18 10:45
265796002	HGWA-6	Water	06/05/18 12:22	06/06/18 10:45
265796003	HGWC-10	Water	06/05/18 15:06	06/06/18 10:45
265796004	HGWC-11	Water	06/05/18 17:32	06/06/18 10:45
265796005	EB-01	Water	06/05/18 18:55	06/06/18 10:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265796001	HGWA-5	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265796002	HGWA-6	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265796003	HGWC-10	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265796004	HGWC-11	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265796005	EB-01	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: HGWA-5		Lab ID: 265796001		Collected: 06/05/18 10:55		Received: 06/06/18 10:45		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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 18:46	7440-38-2		
Barium	0.046	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 18:46	7440-39-3		
Boron	0.0066J	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 18:46	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 18:46	7440-43-9		
Calcium	27.8	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 18:52	7440-70-2		
Cobalt	ND	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 18:46	7440-48-4		
Lithium	0.0034J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 18:46	7439-93-2		
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 18:46	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 18:46	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	152	mg/L	25.0	10.0	1		06/11/18 18:32			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	1.6	mg/L	0.25	0.024	1		06/12/18 21:31	16887-00-6		
Fluoride	0.083J	mg/L	0.30	0.029	1		06/12/18 21:31	16984-48-8		
Sulfate	22.9	mg/L	1.0	0.017	1		06/12/18 21:31	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

Sample: HGWA-6		Lab ID: 265796002		Collected: 06/05/18 12:22		Received: 06/06/18 10:45		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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 18:58	7440-38-2	
Barium	0.21	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 18:58	7440-39-3	
Boron	0.016J	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 18:58	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 18:58	7440-43-9	
Calcium	54.5	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 19:04	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 18:58	7440-48-4	
Lithium	0.011J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 18:58	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 18:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 18:58	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	235	mg/L	25.0	10.0	1		06/11/18 18:39		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	1.2	mg/L	0.25	0.024	1		06/12/18 21:52	16887-00-6	
Fluoride	0.055J	mg/L	0.30	0.029	1		06/12/18 21:52	16984-48-8	
Sulfate	38.0	mg/L	1.0	0.017	1		06/12/18 21:52	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: HGWC-10 **Lab ID: 265796003** Collected: 06/05/18 15:06 Received: 06/06/18 10:45 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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 19:21	7440-38-2	
Barium	0.086	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 19:21	7440-39-3	
Boron	1.2	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 19:21	7440-42-8	
Calcium	167	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 22:34	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 19:21	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 19:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 19:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 19:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 19:21	7440-28-0	

2540C Total Dissolved Solids

Analytical Method: SM 2540C

Total Dissolved Solids	679	mg/L	25.0	10.0	1		06/11/18 18:41		
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0

Chloride	66.6	mg/L	1.2	0.12	5		06/22/18 02:36	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		06/12/18 22:14	16984-48-8	
Sulfate	205	mg/L	5.0	0.085	5		06/22/18 02:36	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

Sample: HGWC-11		Lab ID: 265796004		Collected: 06/05/18 17:32		Received: 06/06/18 10:45		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	0.0012J	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 19:32	7440-38-2		
Barium	0.039	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 19:32	7440-39-3		
Boron	1.3	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 19:32	7440-42-8		
Calcium	113	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 22:39	7440-70-2		
Cobalt	0.00061J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 19:32	7440-48-4		
Lithium	ND	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 19:32	7439-93-2		
Molybdenum	0.029	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 19:32	7439-98-7		
Selenium	0.0062J	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 19:32	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 19:32	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	489	mg/L	25.0	10.0	1		06/11/18 18:41			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	56.1	mg/L	1.2	0.12	5		06/22/18 02:57	16887-00-6		
Fluoride	0.24J	mg/L	0.30	0.029	1		06/13/18 00:00	16984-48-8		
Sulfate	204	mg/L	5.0	0.085	5		06/22/18 02:57	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

Sample: EB-01		Lab ID: 265796005		Collected: 06/05/18 18:55		Received: 06/06/18 10:45		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	mg/L	0.0030	0.00078	1	06/19/18 17:44	06/20/18 19:44	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 19:44	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 19:44	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/19/18 17:44	06/20/18 19:44	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 19:44	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 19:44	7440-43-9		
Calcium	0.032J	mg/L	0.50	0.014	1	06/19/18 17:44	06/20/18 19:44	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/19/18 17:44	06/20/18 19:44	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 19:44	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/19/18 17:44	06/20/18 19:44	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 19:44	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 19:44	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 19:44	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 19:44	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:24	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	11.0J	mg/L	25.0	10.0	1		06/11/18 18:41			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.16J	mg/L	0.25	0.024	1		06/13/18 00:21	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		06/13/18 00:21	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		06/13/18 00:21	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

QC Batch: 7784	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 265796005	

METHOD BLANK: 36205 Matrix: Water
Associated Lab Samples: 265796005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/13/18 08:51	

LABORATORY CONTROL SAMPLE: 36206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36207 36208

Parameter	Units	265795001 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	.0025	.0025	0.0025	0.0025	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

QC Batch: 8297 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

METHOD BLANK: 38325 Matrix: Water
Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/20/18 18:11	
Arsenic	mg/L	ND	0.0050	0.00057	06/20/18 18:11	
Barium	mg/L	ND	0.010	0.00078	06/20/18 18:11	
Beryllium	mg/L	ND	0.0030	0.000050	06/20/18 18:11	
Boron	mg/L	ND	0.040	0.0039	06/20/18 18:11	
Cadmium	mg/L	ND	0.0010	0.000093	06/20/18 18:11	
Calcium	mg/L	ND	0.50	0.014	06/20/18 18:11	
Chromium	mg/L	ND	0.010	0.0016	06/20/18 18:11	
Cobalt	mg/L	ND	0.010	0.00052	06/20/18 18:11	
Lead	mg/L	ND	0.0050	0.00027	06/20/18 18:11	
Lithium	mg/L	ND	0.050	0.00097	06/20/18 18:11	
Molybdenum	mg/L	ND	0.010	0.0019	06/20/18 18:11	
Selenium	mg/L	ND	0.010	0.0014	06/20/18 18:11	
Thallium	mg/L	ND	0.0010	0.00014	06/20/18 18:11	

LABORATORY CONTROL SAMPLE: 38326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	104	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.099	99	80-120	
Beryllium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.10	103	80-120	
Cobalt	mg/L	.1	0.10	105	80-120	
Lead	mg/L	.1	0.099	99	80-120	
Lithium	mg/L	.1	0.10	101	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38482 38483

Parameter	Units	265859002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Antimony	mg/L	ND	.1	.1	0.10	0.10	105	104	75-125	1	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Parameter	Units	38482		38483		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	ND	.1	.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.068	.1	.1	0.17	0.17	106	104	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.093	0.093	93	93	75-125	1	20	
Boron	mg/L	1.4	1	1	2.3	2.3	97	91	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Calcium	mg/L	81.0	1	1	82.7	80.6	168	-43	75-125	3	20	M6
Chromium	mg/L	ND	.1	.1	0.095	0.095	95	95	75-125	1	20	
Cobalt	mg/L	0.00056J	.1	.1	0.096	0.098	96	98	75-125	2	20	
Lead	mg/L	ND	.1	.1	0.090	0.091	90	91	75-125	2	20	
Lithium	mg/L	0.0041J	.1	.1	0.097	0.098	93	94	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.099	0.099	99	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.092	0.091	92	91	75-125	0	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

QC Batch: 7692 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

LABORATORY CONTROL SAMPLE: 35952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	84-108	

SAMPLE DUPLICATE: 35953

Parameter	Units	265796001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	152	150	1	10	

SAMPLE DUPLICATE: 35954

Parameter	Units	265820001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	60.0	63.0	5	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

QC Batch: 7772 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

METHOD BLANK: 36164 Matrix: Water
 Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/12/18 13:24	
Fluoride	mg/L	ND	0.30	0.029	06/12/18 13:24	
Sulfate	mg/L	ND	1.0	0.017	06/12/18 13:24	

LABORATORY CONTROL SAMPLE: 36165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36166 36167

Parameter	Units	265790001		265790002		265790003		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	2.6	10	10	12.7	12.8	101	101	90-110	0	15
Fluoride	mg/L	0.032J	10	10	10.1	10.1	100	100	90-110	0	15
Sulfate	mg/L	1.4	10	10	11.3	11.5	99	101	90-110	2	15

MATRIX SPIKE SAMPLE: 36168

Parameter	Units	265790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.3	10	15.5	103	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.73J	10	11.0	102	90-110	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: HGWA-5 **Lab ID: 265796001** Collected: 06/05/18 10:55 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.245 ± 0.257 (0.519) C:90% T:NA	pCi/L	06/14/18 08:21	13982-63-3	
Radium-228	EPA 9320	0.522 ± 0.534 (1.11) C:71% T:83%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.767 ± 0.791 (1.63)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: HGWA-6 **Lab ID: 265796002** Collected: 06/05/18 12:22 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.287 ± 0.234 (0.414) C:86% T:NA	pCi/L	06/14/18 08:21	13982-63-3	
Radium-228	EPA 9320	0.137 ± 0.410 (0.922) C:70% T:86%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.424 ± 0.644 (1.34)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: HGWC-10 **Lab ID: 265796003** Collected: 06/05/18 15:06 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.356 ± 0.243 (0.388) C:91% T:NA	pCi/L	06/14/18 09:56	13982-63-3	
Radium-228	EPA 9320	0.362 ± 0.516 (1.11) C:72% T:74%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.718 ± 0.759 (1.50)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: HGWC-11 **Lab ID: 265796004** Collected: 06/05/18 17:32 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.256 ± 0.243 (0.466) C:90% T:NA	pCi/L	06/14/18 09:56	13982-63-3	
Radium-228	EPA 9320	0.293 ± 0.424 (0.912) C:76% T:78%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.549 ± 0.667 (1.38)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

Sample: EB-01 **Lab ID: 265796005** Collected: 06/05/18 18:55 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.301 ± 0.231 (0.379) C:90% T:NA	pCi/L	06/14/18 09:56	13982-63-3	
Radium-228	EPA 9320	0.0642 ± 0.382 (0.879) C:76% T:77%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.365 ± 0.613 (1.26)	pCi/L	07/05/18 14:46	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265796

QC Batch: 301690 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

METHOD BLANK: 1476536 Matrix: Water

Associated Lab Samples: 265796001, 265796002, 265796003, 265796004, 265796005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.215 (0.375) C:88% T:NA	pCi/L	06/14/18 08:33	

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QUALIFIERS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

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 - 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.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265796

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265796001	HGWA-5	EPA 3005A	8297	EPA 6020B	8415
265796002	HGWA-6	EPA 3005A	8297	EPA 6020B	8415
265796003	HGWC-10	EPA 3005A	8297	EPA 6020B	8415
265796004	HGWC-11	EPA 3005A	8297	EPA 6020B	8415
265796005	EB-01	EPA 3005A	8297	EPA 6020B	8415
265796005	EB-01	EPA 7470A	7784	EPA 7470A	7846
265796001	HGWA-5	EPA 9315	301690		
265796002	HGWA-6	EPA 9315	301690		
265796003	HGWC-10	EPA 9315	301690		
265796004	HGWC-11	EPA 9315	301690		
265796005	EB-01	EPA 9315	301690		
265796001	HGWA-5	EPA 9320	301898		
265796002	HGWA-6	EPA 9320	301898		
265796003	HGWC-10	EPA 9320	301898		
265796004	HGWC-11	EPA 9320	301898		
265796005	EB-01	EPA 9320	301898		
265796001	HGWA-5	Total Radium Calculation	304777		
265796002	HGWA-6	Total Radium Calculation	304777		
265796003	HGWC-10	Total Radium Calculation	304777		
265796004	HGWC-11	Total Radium Calculation	304777		
265796005	EB-01	Total Radium Calculation	304777		
265796001	HGWA-5	SM 2540C	7692		
265796002	HGWA-6	SM 2540C	7692		
265796003	HGWC-10	SM 2540C	7692		
265796004	HGWC-11	SM 2540C	7692		
265796005	EB-01	SM 2540C	7692		
265796001	HGWA-5	EPA 300.0	7772		
265796002	HGWA-6	EPA 300.0	7772		
265796003	HGWC-10	EPA 300.0	7772		
265796004	HGWC-11	EPA 300.0	7772		
265796005	EB-01	EPA 300.0	7772		

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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.

Section A		
Section B	Section C	Section D
Required Client Information:	Required Project Information:	Invoice Information:
Company: Georgia Power - Coal Combustion Residuals	Report To: Joji Abraham / Lauren Petty	Attention: scsinvoices@southernco.com
Address: 2480 Manier Road Atlanta, GA 30339	Copy To: Geosyntec	Company Name:
Email: jabraham@southernco.com	Purchase Order #: SCS10346606	Address:
Phone: (404)506-7239	Project Name: Hammond AP	Pace Quote:
Requested Due Date: STANDARD TAT	Project #:	Pace Project Manager: betsy.mcdaniel@pacelabs.com
		Pace Profile #: 327
		Regulatory Agency:
		State / Location: GA

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	DATE		# OF CONTAINERS	Requested Analysis Filtered (Y/N)							TEMP in C	Received on	Custody (Y/N)	Sealed Cooler (Y/N)	Intrac Samples (Y/N)																		
			START	END		DATE	TIME		Methanol	HCl	HNO3	H2SO4	Unpreserved	Metals App III	Radium 226/228						TDS by 2540C	Chloride, Fluoride, Sulfate	Arsenic, Barium, Cadmium, Chromium, Lead, Manganese, Nickel, Selenium, Thallium	Cadmium (6020C)	Molybdenum (6020B)	Metals App III												
1	HGWA-5		06/05/18	1035	G	06/05/18	1055	5																														
2	HGWA-6		06/05/18	1202	G	06/05/18	1222	5																														
3	HGWC-10		06/05/18	1456	G	06/05/18	1506	5																														
4	HGWC-11		06/05/18	1712	G	06/05/18	1732	5																														
5	EB-01		06/05/18	1840	G	06/05/18	1855	5																														
6																																						
7			LAST ITEM																																			
8																																						
9																																						
10																																						
11																																						

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCERTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Noelia Muskus	6/5/18	2105	W. Blaw	6/5/18	2105	
W. Blaw	6/6/18	935	Zach Taylor	6/6/18	935	
Zach Taylor	6/6/18	1045	Pauline York	6/6/18	1045	2.9 Y X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: *Noelia Muskus*

DATE Signed: 06/05/18



Sample Condition Upon Receipt

WO#: 265796

Client Name: GA Power

PM: BM Due Date: 07/05/18
CLIENT: GAPower-CCR

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 2.6 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/6/18 COY

Table with 16 rows and 3 columns: Question, Yes/No/N/A checkboxes, and Comments. Includes items like Chain of Custody Present, Samples Arrived within Hold Time, and Trip Blank Present.

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)

July 06, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265797

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 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,



Maiya Parks for
Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

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

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

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: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265797001	HGWA-3	Water	06/04/18 16:15	06/06/18 10:45
265797002	HGWA-4	Water	06/04/18 19:00	06/06/18 10:45

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265797001	HGWA-3	EPA 6020B	CSW	10	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265797002	HGWA-4	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

Sample: HGWA-3		Lab ID: 265797001		Collected: 06/04/18 16:15		Received: 06/06/18 10:45		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	0.00080J	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 19:39	7440-38-2	
Barium	0.12	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 19:39	7440-39-3	
Boron	0.017J	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 19:39	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 19:39	7440-43-9	
Calcium	73.4	mg/L	5.0	0.14	10	06/13/18 09:18	06/18/18 19:45	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 19:39	7440-48-4	
Lithium	0.0027J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 19:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 19:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 19:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 19:39	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	266	mg/L	25.0	10.0	1		06/08/18 16:25		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.3	mg/L	0.25	0.024	1		06/14/18 17:40	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		06/14/18 17:40	16984-48-8	
Sulfate	46.6	mg/L	1.0	0.017	1		06/14/18 17:40	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

Sample: HGWA-4		Lab ID: 265797002		Collected: 06/04/18 19:00		Received: 06/06/18 10:45		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	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 19:51	7440-38-2		
Barium	0.027	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 19:51	7440-39-3		
Boron	0.014J	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 19:51	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 19:51	7440-43-9		
Calcium	81.9	mg/L	5.0	0.14	10	06/13/18 09:18	06/18/18 19:57	7440-70-2		
Cobalt	ND	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 19:51	7440-48-4		
Lithium	0.00097J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 19:51	7439-93-2		
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 19:51	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 19:51	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	240	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	4.5	mg/L	0.25	0.024	1		06/14/18 18:49	16887-00-6		
Fluoride	0.097J	mg/L	0.30	0.029	1		06/14/18 18:49	16984-48-8		
Sulfate	4.9	mg/L	1.0	0.017	1		06/14/18 18:49	14808-79-8	M1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

QC Batch: 7923 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 265797001, 265797002

METHOD BLANK: 36780 Matrix: Water

Associated Lab Samples: 265797001, 265797002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	06/18/18 16:50	
Barium	mg/L	ND	0.010	0.00078	06/18/18 16:50	
Boron	mg/L	ND	0.040	0.0039	06/18/18 16:50	
Cadmium	mg/L	ND	0.0010	0.000093	06/18/18 16:50	
Calcium	mg/L	ND	0.50	0.014	06/18/18 16:50	
Cobalt	mg/L	ND	0.010	0.00052	06/18/18 16:50	
Lithium	mg/L	ND	0.050	0.00097	06/18/18 16:50	
Molybdenum	mg/L	ND	0.010	0.0019	06/18/18 16:50	
Selenium	mg/L	ND	0.010	0.0014	06/18/18 16:50	
Thallium	mg/L	ND	0.0010	0.00014	06/18/18 16:50	

LABORATORY CONTROL SAMPLE: 36781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	1.1	110	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36825 36826

Parameter	Units	265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00088J	.1	.1	0.10	0.10	102	99	75-125	3	20	
Barium	mg/L	0.11	.1	.1	0.23	0.22	113	111	75-125	1	20	
Boron	mg/L	0.036J	1	1	1.1	1.1	108	102	75-125	6	20	
Cadmium	mg/L	0.00014J	.1	.1	0.10	0.099	101	99	75-125	2	20	
Calcium	mg/L	19.1	1	1	19.4	19.3	37	30	75-125	0	20	M6
Cobalt	mg/L	0.025	.1	.1	0.13	0.12	101	97	75-125	3	20	
Lithium	mg/L	0.0016J	.1	.1	0.11	0.099	103	98	75-125	6	20	
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	101	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

		36825			36826								
Parameter	Units	265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265797

QC Batch: 7599 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 265797001, 265797002

LABORATORY CONTROL SAMPLE: 35647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

SAMPLE DUPLICATE: 35648

Parameter	Units	265789026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	65.0	5	10	

SAMPLE DUPLICATE: 35649

Parameter	Units	265791003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	723	714	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265797

QC Batch: 7994 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265797001, 265797002

METHOD BLANK: 36997 Matrix: Water
Associated Lab Samples: 265797001, 265797002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/14/18 16:54	
Fluoride	mg/L	ND	0.30	0.029	06/14/18 16:54	
Sulfate	mg/L	ND	1.0	0.017	06/14/18 16:54	

LABORATORY CONTROL SAMPLE: 36998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36999 37000

Parameter	Units	265797001 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	15.9	15.9	96	96	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.1	10.1	101	101	90-110	0	15	
Sulfate	mg/L	46.6	10	10	52.3	52.3	57	57	90-110	0	15 E	

MATRIX SPIKE SAMPLE: 37001

Parameter	Units	265797002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.5	10	14.4	98	90-110	
Fluoride	mg/L	0.097J	10	10.2	101	90-110	
Sulfate	mg/L	4.9	10	17.4	125	90-110 M1	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

Sample: HGWA-3 **Lab ID: 265797001** Collected: 06/04/18 16:15 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0291 ± 0.165 (0.423) C:94% T:NA	pCi/L	06/21/18 08:24	13982-63-3	
Radium-228	EPA 9320	-0.128 ± 0.404 (0.976) C:73% T:74%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.0291 ± 0.569 (1.40)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

Sample: HGWA-4 **Lab ID: 265797002** Collected: 06/04/18 19:00 Received: 06/06/18 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.331 ± 0.239 (0.415) C:92% T:NA	pCi/L	06/21/18 08:24	13982-63-3	
Radium-228	EPA 9320	0.291 ± 0.469 (1.02) C:74% T:71%	pCi/L	07/03/18 17:19	15262-20-1	
Total Radium	Total Radium Calculation	0.622 ± 0.708 (1.44)	pCi/L	07/05/18 14:46	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265797001, 265797002

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265797001, 265797002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

QC Batch: 301864

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265797001, 265797002

METHOD BLANK: 1477267

Matrix: Water

Associated Lab Samples: 265797001, 265797002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.187 (0.281) C:92% T:NA	pCi/L	06/21/18 08:22	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265797

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 - 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.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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 Hammond AP 1&2, 3&4

Pace Project No.: 265797

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265797001	HGWA-3	EPA 3005A	7923	EPA 6020B	8195
265797002	HGWA-4	EPA 3005A	7923	EPA 6020B	8195
265797001	HGWA-3	EPA 9315	301864		
265797002	HGWA-4	EPA 9315	301864		
265797001	HGWA-3	EPA 9320	301898		
265797002	HGWA-4	EPA 9320	301898		
265797001	HGWA-3	Total Radium Calculation	304777		
265797002	HGWA-4	Total Radium Calculation	304777		
265797001	HGWA-3	SM 2540C	7599		
265797002	HGWA-4	SM 2540C	7599		
265797001	HGWA-3	EPA 300.0	7994		
265797002	HGWA-4	EPA 300.0	7994		

REPORT OF LABORATORY ANALYSIS

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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.

Section A	Required Client Information:	Section B	Required Project Information:	Section C	Invoice Information:
Company	Georgia Power - Coal Combustion Residuals	Report To	Joy Abraham / Lauren Paity	Attention	SCSInvoices@southernco.com
Address	2480 Marner Road Atlanta, GA 30339	Copy To	Geosyntec	Company Name	
Email	jabraham@southernco.com	Purchase Order #	SCS10348806	Address	
Phone	(404)506-7239	Project Name	Harrison AP	Page Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date	STB TAT	Project #		Page Profile #	327
				Regulator/Agency	State / Location GA

ITEM #	SAMPLE ID (A-Z, 0-9 / . -)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives									Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	State / Location											
								START	END			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test				Y/N										
1	HGWA-3	WT	G	6/14/18	15:22	6/14/18	16:15			5	2																							
2	HGWA-4	WT	G	6/14/18	17:30	6/14/18	19:00			5	2																							
 3 4 5 6 7 8 9 10 11 12 																																		

ADDITIONAL COMMENTS		REINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
		Nardos Tilahun	6/14/18	19:30	Yellie Mumbun	6/14/18	19:30		
		Maria Mumbun	6/15/18	2:05	W. F. Taylor	6/15/18	2:05		
		W. F. Taylor	6/16/18	9:35	Jack Taylor	6/16/18	9:35		
		Jack Taylor	6/16/18	10:45	Charles Fink	6/16/18	10:45		

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Nardos Tilahun SIGNATURE OF SAMPLER: <i>[Signature]</i>		DATE Signed: 6/14/18
TEMP in C		
Received on Ice (Y/N)		
Custody Sealed Cooler (Y/N)		
Samples Intact (Y/N)		

265797



WO#: 265797

Face Analytical

Client Name: GA Power

Sample Condition Upon Receipt

MO# : 265797

PM: BM
 CLIENT: GAPower-CCR
 Due Date: 07/05/18

Optional
 Proj. Due Date:
 Proj. Name:

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

Thermometer Used: THR082
 Cooler Temperature: 5.3C
 Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No
 Comments:
 Date and Initials of person examining contents: 6/6/18 GWT

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input 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	10.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
-Includes date/time/ID/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.
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	16.
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	17.
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	18.
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	19.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	20.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	21.
Face Trip Blank Lot # (if purchased):		22.

Client Notification/ Resolution:
 Date/Time:
 Person Contacted:
 Comments/ Resolution: The sample labeled GWT-4 had a collection time of 1810 on the label. The COC listed the collection time of GWT-4 as 1900. The COC was used for login purposes.

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)

July 09, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

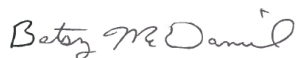
RE: Project: Plant Hammond AP
Pace Project No.: 265860

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265860

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

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

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 Hammond AP

Pace Project No.: 265860

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265860001	HGWC-8	Water	06/06/18 09:58	06/07/18 11:30
265860002	HGWC-9	Water	06/06/18 11:33	06/07/18 11:30
265860003	HGWC-12	Water	06/06/18 13:51	06/07/18 11:30
265860004	HGWC-14	Water	06/06/18 15:42	06/07/18 11:30
265860005	HGWC-17	Water	06/06/18 17:38	06/07/18 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 265860

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265860001	HGWC-8	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
265860002	HGWC-9	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
265860003	HGWC-12	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
265860004	HGWC-14	Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
265860005	HGWC-17	SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-8		Lab ID: 265860001		Collected: 06/06/18 09:58		Received: 06/07/18 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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 21:38	7440-38-2	
Barium	0.063	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 21:38	7440-39-3	
Boron	2.6	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 21:38	7440-42-8	
Calcium	127	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 22:45	7440-70-2	
Cobalt	0.0017J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 21:38	7440-48-4	
Lithium	0.0023J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 21:38	7439-93-2	
Molybdenum	0.49	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 21:38	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 21:38	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 21:38	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	611	mg/L	25.0	10.0	1		06/11/18 18:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	44.8	mg/L	0.25	0.024	1		06/14/18 21:04	16887-00-6	
Fluoride	0.46	mg/L	0.30	0.029	1		06/14/18 21:04	16984-48-8	
Sulfate	190	mg/L	5.0	0.085	5		06/26/18 11:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-9		Lab ID: 265860002		Collected: 06/06/18 11:33		Received: 06/07/18 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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 21:50	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 21:50	7440-39-3	
Boron	2.3	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 21:50	7440-42-8	
Calcium	184	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 22:51	7440-70-2	
Cobalt	0.00056J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 21:50	7440-48-4	
Lithium	0.0043J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 21:50	7439-93-2	
Molybdenum	0.027	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 21:50	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 21:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 21:50	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	810	mg/L	25.0	10.0	1		06/11/18 18:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	138	mg/L	1.2	0.12	5		06/26/18 11:54	16887-00-6	
Fluoride	0.12J	mg/L	0.30	0.029	1		06/14/18 22:56	16984-48-8	
Sulfate	214	mg/L	5.0	0.085	5		06/26/18 11:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 265860

Sample: HGWC-12		Lab ID: 265860003		Collected: 06/06/18 13:51		Received: 06/07/18 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	0.0048J	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 22:01	7440-38-2	
Barium	0.090	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 22:01	7440-39-3	
Boron	2.5	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 22:01	7440-42-8	
Calcium	136	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 22:56	7440-70-2	
Cobalt	0.0012J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 22:01	7440-48-4	
Lithium	0.0095J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 22:01	7439-93-2	
Molybdenum	0.054	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 22:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 22:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 22:01	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	535	mg/L	25.0	10.0	1		06/11/18 18:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	46.4	mg/L	0.25	0.024	1		06/14/18 23:18	16887-00-6	
Fluoride	0.21J	mg/L	0.30	0.029	1		06/14/18 23:18	16984-48-8	
Sulfate	162	mg/L	5.0	0.085	5		06/26/18 12:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-14		Lab ID: 265860004		Collected: 06/06/18 15:42		Received: 06/07/18 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	0.0059	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 22:12	7440-38-2		
Barium	0.022	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 22:12	7440-39-3		
Boron	16.7	mg/L	0.40	0.039	10	06/19/18 17:44	06/20/18 22:18	7440-42-8		
Cadmium	0.00012J	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 22:12	7440-43-9		
Calcium	606	mg/L	250	6.9	500	06/19/18 17:44	06/22/18 23:02	7440-70-2		
Cobalt	0.027	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 22:12	7440-48-4		
Lithium	ND	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 22:12	7439-93-2		
Selenium	0.014	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 22:12	7782-49-2		
Thallium	0.00029J	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 22:12	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	2620	mg/L	25.0	10.0	1		06/11/18 18:42			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	357	mg/L	5.0	0.48	20		06/26/18 14:01	16887-00-6		
Fluoride	0.25J	mg/L	0.30	0.029	1		06/15/18 00:03	16984-48-8		
Sulfate	1520	mg/L	50.0	0.85	50		07/06/18 14:28	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-17		Lab ID: 265860005		Collected: 06/06/18 17:38		Received: 06/07/18 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	0.00097J	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 22:35	7440-38-2		
Barium	0.028	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 22:35	7440-39-3		
Boron	6.3	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 22:35	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 22:35	7440-43-9		
Calcium	299	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 23:08	7440-70-2		
Cobalt	0.018	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 22:35	7440-48-4		
Lithium	ND	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 22:35	7439-93-2		
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 22:35	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 22:35	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	1180	mg/L	25.0	10.0	1		06/11/18 18:42			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	166	mg/L	2.5	0.24	10		06/26/18 14:23	16887-00-6		
Fluoride	0.23J	mg/L	0.30	0.029	1		06/15/18 00:25	16984-48-8		
Sulfate	520	mg/L	20.0	0.34	20		07/06/18 02:32	14808-79-8	H5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265860

QC Batch: 8297 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

METHOD BLANK: 38325 Matrix: Water
Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	06/20/18 18:11	
Barium	mg/L	ND	0.010	0.00078	06/20/18 18:11	
Boron	mg/L	ND	0.040	0.0039	06/20/18 18:11	
Cadmium	mg/L	ND	0.0010	0.000093	06/20/18 18:11	
Calcium	mg/L	ND	0.50	0.014	06/20/18 18:11	
Cobalt	mg/L	ND	0.010	0.00052	06/20/18 18:11	
Lithium	mg/L	ND	0.050	0.00097	06/20/18 18:11	
Molybdenum	mg/L	ND	0.010	0.0019	06/20/18 18:11	
Selenium	mg/L	ND	0.010	0.0014	06/20/18 18:11	
Thallium	mg/L	ND	0.0010	0.00014	06/20/18 18:11	

LABORATORY CONTROL SAMPLE: 38326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Cobalt	mg/L	.1	0.10	105	80-120	
Lithium	mg/L	.1	0.10	101	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38482 38483

Parameter	Units	265859002 Result	MS Spike Conc.	MSD Spike Conc.	38482		38483		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Arsenic	mg/L	ND	.1	.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.068	.1	.1	0.17	0.17	106	104	75-125	1	20	
Boron	mg/L	1.4	1	1	2.3	2.3	97	91	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Calcium	mg/L	81.0	1	1	82.7	80.6	168	-43	75-125	3	20	M6
Cobalt	mg/L	0.00056J	.1	.1	0.096	0.098	96	98	75-125	2	20	
Lithium	mg/L	0.0041J	.1	.1	0.097	0.098	93	94	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.099	0.099	99	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265860

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38482												38483	
Parameter	Units	265859002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Thallium	mg/L	ND	.1	.1	0.092	0.091	92	91	75-125	0	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265860

QC Batch: 7692

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

LABORATORY CONTROL SAMPLE: 35952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	84-108	

SAMPLE DUPLICATE: 35953

Parameter	Units	265796001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	152	150	1	10	

SAMPLE DUPLICATE: 35954

Parameter	Units	265820001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	60.0	63.0	5	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265860

QC Batch: 7994 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

METHOD BLANK: 36997 Matrix: Water
Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/14/18 16:54	
Fluoride	mg/L	ND	0.30	0.029	06/14/18 16:54	
Sulfate	mg/L	ND	1.0	0.017	06/14/18 16:54	

LABORATORY CONTROL SAMPLE: 36998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36999 37000

Parameter	Units	265797001 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	15.9	15.9	96	96	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.1	10.1	101	101	90-110	0	15	
Sulfate	mg/L	46.6	10	10	52.3	52.3	57	57	90-110	0	15 E	

MATRIX SPIKE SAMPLE: 37001

Parameter	Units	265797002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.5	10	14.4	98	90-110	
Fluoride	mg/L	0.097J	10	10.2	101	90-110	
Sulfate	mg/L	4.9	10	17.4	125	90-110 M1	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-8 **Lab ID: 265860001** Collected: 06/06/18 09:58 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.107 ± 0.232 (0.542) C:88% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.789 ± 0.465 (0.845) C:70% T:79%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.896 ± 0.697 (1.39)	pCi/L	07/05/18 14:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-9 **Lab ID: 265860002** Collected: 06/06/18 11:33 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.133 ± 0.184 (0.383) C:73% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.680 ± 0.553 (1.11) C:71% T:77%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.813 ± 0.737 (1.49)	pCi/L	07/05/18 14:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265860

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.424 ± 0.269 (0.429) C:89% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	-0.158 ± 0.355 (0.864) C:72% T:83%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.424 ± 0.624 (1.29)	pCi/L	07/05/18 19:51	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-14 **Lab ID: 265860004** Collected: 06/06/18 15:42 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.499 ± 0.338 (0.563) C:67% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.810 ± 0.515 (0.978) C:72% T:78%	pCi/L	07/02/18 17:26	15262-20-1	
Total Radium	Total Radium Calculation	1.31 ± 0.853 (1.54)	pCi/L	07/05/18 19:51	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265860

Sample: HGWC-17 **Lab ID: 265860005** Collected: 06/06/18 17:38 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.218 ± 0.204 (0.373) C:87% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.554 ± 0.418 (0.815) C:69% T:84%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.772 ± 0.622 (1.19)	pCi/L	07/05/18 19:51	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265860

QC Batch: 302916 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

METHOD BLANK: 1482110 Matrix: Water

Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.166 ± 0.207 (0.428) C:81% T:NA	pCi/L	06/28/18 08:14	

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: Plant Hammond AP

Pace Project No.: 265860

QC Batch: 302388

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

METHOD BLANK: 1479692

Matrix: Water

Associated Lab Samples: 265860001, 265860002, 265860003, 265860004, 265860005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.11 ± 0.508 (0.850) C:78% T:75%	pCi/L	07/02/18 17:21	1A

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 Hammond AP

Pace Project No.: 265860

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 - 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.

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

- | | |
|----|---|
| 1A | Ra-228 detected in Method Blank above the associated MDC. Sample results are reportable without qualification if their activity is below the RL of 1.0 pCi/L. |
| E | Analyte concentration exceeded the calibration range. The reported result is estimated. |
| H5 | Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time. |
| 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 Hammond AP
Pace Project No.: 265860

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265860001	HGWC-8	EPA 3005A	8297	EPA 6020B	8415
265860002	HGWC-9	EPA 3005A	8297	EPA 6020B	8415
265860003	HGWC-12	EPA 3005A	8297	EPA 6020B	8415
265860004	HGWC-14	EPA 3005A	8297	EPA 6020B	8415
265860005	HGWC-17	EPA 3005A	8297	EPA 6020B	8415
265860001	HGWC-8	EPA 9315	302916		
265860002	HGWC-9	EPA 9315	302916		
265860003	HGWC-12	EPA 9315	302916		
265860004	HGWC-14	EPA 9315	302916		
265860005	HGWC-17	EPA 9315	302916		
265860001	HGWC-8	EPA 9320	302388		
265860002	HGWC-9	EPA 9320	302388		
265860003	HGWC-12	EPA 9320	302388		
265860004	HGWC-14	EPA 9320	302388		
265860005	HGWC-17	EPA 9320	302388		
265860001	HGWC-8	Total Radium Calculation	304778		
265860002	HGWC-9	Total Radium Calculation	304778		
265860003	HGWC-12	Total Radium Calculation	304780		
265860004	HGWC-14	Total Radium Calculation	304780		
265860005	HGWC-17	Total Radium Calculation	304780		
265860001	HGWC-8	SM 2540C	7692		
265860002	HGWC-9	SM 2540C	7692		
265860003	HGWC-12	SM 2540C	7692		
265860004	HGWC-14	SM 2540C	7692		
265860005	HGWC-17	SM 2540C	7692		
265860001	HGWC-8	EPA 300.0	7994		
265860002	HGWC-9	EPA 300.0	7994		
265860003	HGWC-12	EPA 300.0	7994		
265860004	HGWC-14	EPA 300.0	7994		
265860005	HGWC-17	EPA 300.0	7994		

REPORT OF LABORATORY ANALYSIS

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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.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manner Road
 Atlanta, GA 30339
 Email: jabraham@southermco.com
 Phone: (404) 506-7239
 Fax: []

Section B
 Required Project Information:
 Report To: Jitu Abraham / Lauren Peby
 Copy To: Geosynthetic
 Purchase Order #: SCS10348608
 Project Name: Hammond AP
 Project #: STB TAT

Section C
 Invoice Information:
 Attention: SCSinvoices@southermco.com
 Company Name: []
 Address: []
 Pace Quote: []
 Pace Project Manager: baty.mcdaniel@pacelabs.com
 Pace Profile #: 327

Page: 1 Of 1

ITEM #	MATRIX CODE (see valid codes to left)	MATRIX TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Other	Analytical Test	Temp (Y/N)	Custody Sealed (Y/N)	Received On (Y/N)	Samples (Y/N)	Intact (Y/N)	
			START DATE/TIME	END DATE/TIME											
1	HGWC-8	S	6/6/18 0933	6/6/18 0958	5	2	H2SO4 HNO3 HCl NaOH H2S2O3 Mercuric Other	Y	Y	Y	Y	Y	Y	Y	
2	HGWC-9	S	6/6/18 1108	6/6/18 1133	5	2	H2SO4 HNO3 HCl NaOH H2S2O3 Mercuric Other	Y	Y	Y	Y	Y	Y	Y	Y
3	HGWC-12	S	6/6/18 1316	6/6/18 1351	5	2	H2SO4 HNO3 HCl NaOH H2S2O3 Mercuric Other	Y	Y	Y	Y	Y	Y	Y	Y
4	HGWC-14	S	6/6/18 1517	6/6/18 1542	5	2	H2SO4 HNO3 HCl NaOH H2S2O3 Mercuric Other	Y	Y	Y	Y	Y	Y	Y	Y
5	HGWC-17	S	6/6/18 1708	6/6/18 1738	5	2	H2SO4 HNO3 HCl NaOH H2S2O3 Mercuric Other	Y	Y	Y	Y	Y	Y	Y	Y

NO#: 265860



APPROVAL COMMENTS	APPROVED BY / APPLICATION	DATE	PRINTED BY / APPLICATION	DATE
	Nardos Tilahun	6/6/18	Maria Menden	6/6/18
	Maria Menden	6/6/18	Mike Nguyen/Pace	6/7/18
	[Signature]	6/7/18	Max Adman	6/7/18

TEMP # []
 Received On (Y/N) []
 Custody Sealed (Y/N) []
 Samples (Y/N) []
 Intact (Y/N) []

PRINT Name of SAMPLER: Nardos Tilahun
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 6/6/18

Sample Condition Upon Receipt



Client Name: GIA POWER

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other

WO#: 265860

Tracking #: _____ Custody Seal on Cooler/Box Present: yes no

PM: **BM** Due Date: **07/06/18**

Seals intact: yes no Packing Material: Bubble Wrap Bubble Bags None Other

CLIENT: **GAPower-CCR**

Thermometer Used 8.3 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.2 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 6/7/18 MK

		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>WJ</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:

Person Contacted: _____ Date/Time: _____ Field Data Required? Y N

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 DEHNP Certification Office - i.e. out of hold, incorrect preservative, out of temp, incorrect containers.

July 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP
Pace Project No.: 265863

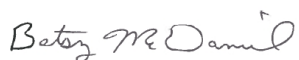
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 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.

REV07172018_report revised to remove mercury data per consultant request.

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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265863

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

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

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: Plant Hammond AP
Pace Project No.: 265863

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265863001	HGWC-15	Water	06/06/18 15:42	06/07/18 11:30
265863002	FD-03	Water	06/06/18 00:00	06/07/18 11:30
265863003	HGWC-16	Water	06/06/18 18:56	06/07/18 11:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265863

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265863001	HGWC-15	EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
265863002	FD-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
265863003	HGWC-16	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
		EPA 6020B	CSW	9	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265863

Sample: HGWC-15		Lab ID: 265863001		Collected: 06/06/18 15:42		Received: 06/07/18 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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 22:47	7440-38-2	
Barium	0.022	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 22:47	7440-39-3	
Boron	2.4	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 22:47	7440-42-8	
Cadmium	0.0021	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 22:47	7440-43-9	
Calcium	250	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 23:14	7440-70-2	
Cobalt	0.032	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 22:47	7440-48-4	
Lithium	0.0013J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 22:47	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 22:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 22:47	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	1120	mg/L	25.0	10.0	1		06/11/18 18:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	196	mg/L	2.5	0.24	10		06/26/18 14:44	16887-00-6	
Fluoride	0.17J	mg/L	0.30	0.029	1		06/15/18 00:47	16984-48-8	
Sulfate	469	mg/L	20.0	0.34	20		07/06/18 02:53	14808-79-8	H5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265863

Sample: FD-03		Lab ID: 265863002		Collected: 06/06/18 00:00		Received: 06/07/18 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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 22:58	7440-38-2	
Barium	0.023	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 22:58	7440-39-3	
Boron	2.5	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 22:58	7440-42-8	
Cadmium	0.0022	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 22:58	7440-43-9	
Calcium	268	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 23:19	7440-70-2	
Cobalt	0.037	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 22:58	7440-48-4	
Lithium	0.0013J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 22:58	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 22:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 22:58	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	1190	mg/L	25.0	10.0	1		06/11/18 18:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	197	mg/L	2.5	0.24	10		06/26/18 15:05	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		06/15/18 01:10	16984-48-8	
Sulfate	482	mg/L	20.0	0.34	20		07/06/18 03:13	14808-79-8	H5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265863

Sample: HGWC-16		Lab ID: 265863003		Collected: 06/06/18 18:56		Received: 06/07/18 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	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 23:10	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 23:10	7440-39-3	
Boron	1.9	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 23:10	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 23:10	7440-43-9	
Calcium	177	mg/L	25.0	0.69	50	06/19/18 17:44	06/22/18 23:25	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 23:10	7440-48-4	
Lithium	0.0031J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 23:10	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 23:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 23:10	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	678	mg/L	25.0	10.0	1		06/11/18 18:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	50.6	mg/L	1.2	0.12	5		06/26/18 15:26	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		06/15/18 01:32	16984-48-8	
Sulfate	233	mg/L	5.0	0.085	5		06/26/18 15:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265863

QC Batch: 8297 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265863001, 265863002, 265863003

METHOD BLANK: 38325 Matrix: Water
Associated Lab Samples: 265863001, 265863002, 265863003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	06/20/18 18:11	
Barium	mg/L	ND	0.010	0.00078	06/20/18 18:11	
Boron	mg/L	ND	0.040	0.0039	06/20/18 18:11	
Cadmium	mg/L	ND	0.0010	0.000093	06/20/18 18:11	
Calcium	mg/L	ND	0.50	0.014	06/20/18 18:11	
Cobalt	mg/L	ND	0.010	0.00052	06/20/18 18:11	
Lithium	mg/L	ND	0.050	0.00097	06/20/18 18:11	
Selenium	mg/L	ND	0.010	0.0014	06/20/18 18:11	
Thallium	mg/L	ND	0.0010	0.00014	06/20/18 18:11	

LABORATORY CONTROL SAMPLE: 38326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Cobalt	mg/L	.1	0.10	105	80-120	
Lithium	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38482 38483

Parameter	Units	265859002		38483		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	ND	.1	.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.068	.1	.1	0.17	0.17	106	104	75-125	1	20	
Boron	mg/L	1.4	1	1	2.3	2.3	97	91	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Calcium	mg/L	81.0	1	1	82.7	80.6	168	-43	75-125	3	20	M6
Cobalt	mg/L	0.00056J	.1	.1	0.096	0.098	96	98	75-125	2	20	
Lithium	mg/L	0.0041J	.1	.1	0.097	0.098	93	94	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.092	0.091	92	91	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265863

QC Batch: 7692 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 265863001, 265863002, 265863003

LABORATORY CONTROL SAMPLE: 35952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	84-108	

SAMPLE DUPLICATE: 35953

Parameter	Units	265796001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	152	150	1	10	

SAMPLE DUPLICATE: 35954

Parameter	Units	265820001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	60.0	63.0	5	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265863

QC Batch: 7994 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265863001, 265863002, 265863003

METHOD BLANK: 36997 Matrix: Water
Associated Lab Samples: 265863001, 265863002, 265863003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/14/18 16:54	
Fluoride	mg/L	ND	0.30	0.029	06/14/18 16:54	
Sulfate	mg/L	ND	1.0	0.017	06/14/18 16:54	

LABORATORY CONTROL SAMPLE: 36998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36999 37000

Parameter	Units	265797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	6.3	10	10	15.9	15.9	96	96	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.1	10.1	101	101	90-110	0	15	
Sulfate	mg/L	46.6	10	10	52.3	52.3	57	57	90-110	0	15	E

MATRIX SPIKE SAMPLE: 37001

Parameter	Units	265797002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.5	10	14.4	98	90-110	
Fluoride	mg/L	0.097J	10	10.2	101	90-110	
Sulfate	mg/L	4.9	10	17.4	125	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265863

Sample: HGWC-15 **Lab ID: 265863001** Collected: 06/06/18 15:42 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.117 ± 0.244 (0.565) C:89% T:NA	pCi/L	06/28/18 08:14	13982-63-3	
Radium-228	EPA 9320	1.20 ± 0.525 (0.855) C:69% T:85%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	1.32 ± 0.769 (1.42)	pCi/L	07/05/18 14:48	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265863

Sample: FD-03 **Lab ID: 265863002** Collected: 06/06/18 00:00 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.181 ± 0.247 (0.535) C:86% T:NA	pCi/L	06/28/18 08:15	13982-63-3	
Radium-228	EPA 9320	-0.116 ± 0.403 (0.962) C:68% T:84%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.181 ± 0.650 (1.50)	pCi/L	07/05/18 14:48	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265863

Sample: HGWC-16 **Lab ID: 265863003** Collected: 06/06/18 18:56 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.227 ± 0.185 (0.306) C:95% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.368 ± 0.442 (0.934) C:70% T:79%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.595 ± 0.627 (1.24)	pCi/L	07/05/18 14:48	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265863

QC Batch: 302916

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265863001, 265863002, 265863003

METHOD BLANK: 1482110

Matrix: Water

Associated Lab Samples: 265863001, 265863002, 265863003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.166 ± 0.207 (0.428) C:81% T:NA	pCi/L	06/28/18 08:14	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265863

QC Batch: 302388

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265863001, 265863002, 265863003

METHOD BLANK: 1479692

Matrix: Water

Associated Lab Samples: 265863001, 265863002, 265863003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.11 ± 0.508 (0.850) C:78% T:75%	pCi/L	07/02/18 17:21	1A

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 265863

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 - 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.
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

1A Ra-228 detected in Method Blank above the associated MDC. Sample results are reportable without qualification if their activity is below the RL of 1.0 pCi/L.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
H5 Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
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 Hammond AP
Pace Project No.: 265863

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265863001	HGWC-15	EPA 3005A	8297	EPA 6020B	8415
265863002	FD-03	EPA 3005A	8297	EPA 6020B	8415
265863003	HGWC-16	EPA 3005A	8297	EPA 6020B	8415
265863001	HGWC-15	EPA 9315	302916		
265863002	FD-03	EPA 9315	302916		
265863003	HGWC-16	EPA 9315	302916		
265863001	HGWC-15	EPA 9320	302388		
265863002	FD-03	EPA 9320	302388		
265863003	HGWC-16	EPA 9320	302388		
265863001	HGWC-15	Total Radium Calculation	304778		
265863002	FD-03	Total Radium Calculation	304778		
265863003	HGWC-16	Total Radium Calculation	304778		
265863001	HGWC-15	SM 2540C	7692		
265863002	FD-03	SM 2540C	7692		
265863003	HGWC-16	SM 2540C	7692		
265863001	HGWC-15	EPA 300.0	7994		
265863002	FD-03	EPA 300.0	7994		
265863003	HGWC-16	EPA 300.0	7994		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Face Analytical

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

WO#: 265863

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

PM: BM Due Date: 07/06/18

Packing Material: Bubble Wrap Bubble Bags None Other

CLIENT: GIPower-CCR

Thermometer Used 83 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.2 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 6/7/18 MK

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>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

October 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2
Pace Project No.: 269957

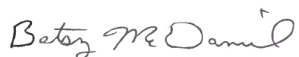
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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.

This revised report replaces the report issued on October 9, 2018. The report has been revised to remove mercury data per consultant request. No other changes have been made to this 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

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: Plant Hammond AP 1&2
Pace Project No.: 269957

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269957001	HGWA-1	Water	10/01/18 15:01	10/02/18 12:00
269957002	HGWA-4	Water	10/01/18 17:04	10/02/18 12:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269957001	HGWA-1	EPA 6020B	CSW	10
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269957002	HGWA-4	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Sample: HGWA-1		Lab ID: 269957001		Collected: 10/01/18 15:01		Received: 10/02/18 12:00		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	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:47	7440-38-2	
Barium	0.029	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:47	7440-39-3	
Boron	0.013J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:47	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:47	7440-43-9	
Calcium	108	mg/L	25.0	0.69	50	10/04/18 11:09	10/09/18 00:53	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:47	7440-48-4	
Lithium	0.00099J	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:47	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:47	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	354	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.6	mg/L	0.25	0.024	1		10/05/18 00:38	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 00:38	16984-48-8	
Sulfate	49.1	mg/L	1.0	0.017	1		10/05/18 00:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Sample: HGWA-4 **Lab ID: 269957002** Collected: 10/01/18 17:04 Received: 10/02/18 12:00 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	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:58	7440-38-2	
Barium	0.018	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:58	7440-39-3	
Boron	0.0093J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:58	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:58	7440-43-9	
Calcium	22.0J	mg/L	25.0	0.69	50	10/04/18 11:09	10/09/18 01:04	7440-70-2	D3
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:58	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:58	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:58	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	106	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Chloride	3.8	mg/L	0.25	0.024	1		10/05/18 00:58	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 00:58	16984-48-8	
Sulfate	0.59J	mg/L	1.0	0.017	1		10/05/18 00:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 269957

QC Batch: 14744 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 269957001, 269957002

METHOD BLANK: 65855 Matrix: Water
Associated Lab Samples: 269957001, 269957002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 22:41	
Barium	mg/L	ND	0.010	0.00078	10/08/18 22:41	
Boron	mg/L	ND	0.040	0.0039	10/08/18 22:41	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 22:41	
Calcium	mg/L	ND	0.50	0.014	10/08/18 22:41	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 22:41	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 22:41	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 22:41	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 22:41	

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	105	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857 65858

Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	102	75-125	3	20	
Barium	mg/L	0.025	.1	.1	0.13	0.12	101	100	75-125	0	20	
Boron	mg/L	0.0042J	1	1	0.93	0.91	93	91	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Calcium	mg/L	6.2	1	1	7.0	7.0	76	74	75-125	0	20 M1	
Cobalt	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Lithium	mg/L	0.0010J	.1	.1	0.095	0.094	94	93	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Selenium	mg/L	0.0024J	.1	.1	0.11	0.10	103	98	75-125	5	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		65857		65858								
Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	mg/L	ND	.1	.1	0.10	0.10	103	101	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: Plant Hammond AP 1&2

Pace Project No.: 269957

QC Batch: 14690	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 269957001, 269957002	

LABORATORY CONTROL SAMPLE: 65578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 65579

Parameter	Units	269910001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2490	2740	10	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 269957

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 269957001, 269957002

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 269957001, 269957002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15	
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15	

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

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 - 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.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269957001	HGWA-1	EPA 3005A	14744	EPA 6020B	14814
269957002	HGWA-4	EPA 3005A	14744	EPA 6020B	14814
269957001	HGWA-1	SM 2540C	14690		
269957002	HGWA-4	SM 2540C	14690		
269957001	HGWA-1	EPA 300.0	14765		
269957002	HGWA-4	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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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.

Section A Required Client Information: Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road Atlanta, GA 30339
 Email: jbraham@southernco.com Phone: (404)506-7239 Fax: Requested Due Date: Standard IAT

Section B Required Project Information: Report To: Joji Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 1 & 2
 Project #: G-0659

Section C Invoice Information: Attention: SCSinvoices@southernco.com
 Company Name: Address: Pace Project Manager: betsy.mcdaniel@parcalabs.com
 Pace Quote: 327.5.2
 State / Location: GA
 Regulatory Agency: Page: Of

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	Requested Analysis Filtered (Y/N)				TEMP in C	RECEIVED on	Custody (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
		START DATE	START TIME					END DATE	END TIME	Analyses Test	Metals *							Metals **
1	HQWA-1	10/01/18	1451	10/01/18	1501	4	Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2	HQWA-4	10/01/18	1657	10/01/18	1704	4	Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

ADDITIONAL COMMENTS: Maria Muehlen, 10/15/18, 19:45
 Relinquished by: Maria Muehlen, 10/21/18, 10:08
 Accepted by: Mike Nguyen, 10/21/18, 12:00
 Signature: Maria Muehlen, Date Signed: 10/01/18

W0#: 269957

269957

Page 13 of 14



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO# : 269957

PM: BM Due Date: 10/09/18

CLIENT: CAPower-CCR

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 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.5

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/02/18 [initials]

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>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: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

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

October 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2
Pace Project No.: 269955

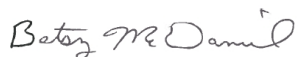
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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.

This revised report replaces the report issued on October 9, 2018. The report has been revised to remove mercury data per consultant request. No other changes have been made to this 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

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: Plant Hammond AP 1&2

Pace Project No.: 269955

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269955001	HGWA-2	Water	10/01/18 15:35	10/02/18 12:00
269955002	HGWA-3	Water	10/01/18 16:57	10/02/18 12:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269955001	HGWA-2	EPA 6020B	CSW	10
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269955002	HGWA-3	EPA 6020B	CSW	10
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

Sample: HGWA-2		Lab ID: 269955001		Collected: 10/01/18 15:35		Received: 10/02/18 12:00		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	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:13	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:13	7440-39-3	
Boron	0.035J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:13	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:13	7440-43-9	
Calcium	20.5J	mg/L	25.0	0.69	50	10/04/18 11:09	10/09/18 00:18	7440-70-2	D3
Cobalt	0.026	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:13	7440-48-4	
Lithium	0.0013J	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:13	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:13	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	135	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.4	mg/L	0.25	0.024	1		10/04/18 23:56	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/04/18 23:56	16984-48-8	
Sulfate	48.1	mg/L	1.0	0.017	1		10/04/18 23:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

Sample: HGWA-3		Lab ID: 269955002		Collected: 10/01/18 16:57		Received: 10/02/18 12:00		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	0.0011J	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:24	7440-38-2	
Barium	0.14	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:24	7440-39-3	
Boron	0.0061J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:24	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:24	7440-43-9	
Calcium	80.9	mg/L	25.0	0.69	50	10/04/18 11:09	10/09/18 00:30	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:24	7440-48-4	
Lithium	0.0032J	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:24	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	291	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.4	mg/L	0.25	0.024	1		10/05/18 00:17	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 00:17	16984-48-8	
Sulfate	48.6	mg/L	1.0	0.017	1		10/05/18 00:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

QC Batch: 14744 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 269955001, 269955002

METHOD BLANK: 65855 Matrix: Water

Associated Lab Samples: 269955001, 269955002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 22:41	
Barium	mg/L	ND	0.010	0.00078	10/08/18 22:41	
Boron	mg/L	ND	0.040	0.0039	10/08/18 22:41	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 22:41	
Calcium	mg/L	ND	0.50	0.014	10/08/18 22:41	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 22:41	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 22:41	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 22:41	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 22:41	

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	105	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857 65858

Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	102	75-125	3	20	
Barium	mg/L	0.025	.1	.1	0.13	0.12	101	100	75-125	0	20	
Boron	mg/L	0.0042J	1	1	0.93	0.91	93	91	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Calcium	mg/L	6.2	1	1	7.0	7.0	76	74	75-125	0	20 M1	
Cobalt	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Lithium	mg/L	0.0010J	.1	.1	0.095	0.094	94	93	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Selenium	mg/L	0.0024J	.1	.1	0.11	0.10	103	98	75-125	5	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

		65857			65858								
Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Thallium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	3	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

QC Batch: 14690	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 269955001, 269955002	

LABORATORY CONTROL SAMPLE: 65578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 65579

Parameter	Units	269910001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2490	2740	10	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 269955

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 269955001, 269955002

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 269955001, 269955002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15	
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15	

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

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 - 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.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 269955

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269955001	HGWA-2	EPA 3005A	14744	EPA 6020B	14814
269955002	HGWA-3	EPA 3005A	14744	EPA 6020B	14814
269955001	HGWA-2	SM 2540C	14690		
269955002	HGWA-3	SM 2540C	14690		
269955001	HGWA-2	EPA 300.0	14765		
269955002	HGWA-3	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

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

WO#: 269955

PM: BM Due Date: 10/09/18

CLIENT: CAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/02/18 MW

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>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:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

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

October 25, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

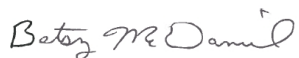
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 269956

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2
Pace Project No.: 269956

Pennsylvania Certification IDs

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
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: Plant Hammond AP 1&2

Pace Project No.: 269956

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269956001	HGWA-2	Water	10/01/18 15:35	10/02/18 12:00
269956002	HGWA-3	Water	10/01/18 16:57	10/02/18 12:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269956001	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269956002	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

Sample: HGWA-2 **Lab ID: 269956001** Collected: 10/01/18 15:35 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.386 ± 0.199 (0.236) C:95% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.0479 ± 0.325 (0.747) C:74% T:84%	pCi/L	10/16/18 11:20	15262-20-1	
Total Radium	Total Radium Calculation	0.434 ± 0.524 (0.983)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

Sample: HGWA-3 **Lab ID: 269956002** Collected: 10/01/18 16:57 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.185 ± 0.157 (0.278) C:96% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.596 ± 0.403 (0.773) C:72% T:84%	pCi/L	10/16/18 11:20	15262-20-1	
Total Radium	Total Radium Calculation	0.781 ± 0.560 (1.05)	pCi/L	10/22/18 12:11	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

QC Batch: 315900

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 269956001, 269956002

METHOD BLANK: 1541949

Matrix: Water

Associated Lab Samples: 269956001, 269956002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 269956001, 269956002

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 269956001, 269956002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 269956

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269956001	HGWA-2	EPA 9315	315900		
269956002	HGWA-3	EPA 9315	315900		
269956001	HGWA-2	EPA 9320	315901		
269956002	HGWA-3	EPA 9320	315901		
269956001	HGWA-2	Total Radium Calculation	317509		
269956002	HGWA-3	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 269956

PM: BM Due Date: 10/30/18

CLIENT: CAPower-CCR

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 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/02/18 MA

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>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: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

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

October 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2
Pace Project No.: 269957

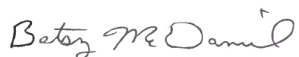
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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.

This revised report replaces the report issued on October 9, 2018. The report has been revised to remove mercury data per consultant request. No other changes have been made to this 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

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: Plant Hammond AP 1&2
Pace Project No.: 269957

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269957001	HGWA-1	Water	10/01/18 15:01	10/02/18 12:00
269957002	HGWA-4	Water	10/01/18 17:04	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269957001	HGWA-1	EPA 6020B	CSW	10
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269957002	HGWA-4	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Sample: HGWA-1		Lab ID: 269957001		Collected: 10/01/18 15:01	Received: 10/02/18 12:00	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	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:47	7440-38-2		
Barium	0.029	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:47	7440-39-3		
Boron	0.013J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:47	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:47	7440-43-9		
Calcium	108	mg/L	25.0	0.69	50	10/04/18 11:09	10/09/18 00:53	7440-70-2		
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:47	7440-48-4		
Lithium	0.00099J	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:47	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:47	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:47	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:47	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	354	mg/L	25.0	10.0	1		10/03/18 17:16			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	6.6	mg/L	0.25	0.024	1		10/05/18 00:38	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 00:38	16984-48-8		
Sulfate	49.1	mg/L	1.0	0.017	1		10/05/18 00:38	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Sample: HGWA-4		Lab ID: 269957002		Collected: 10/01/18 17:04		Received: 10/02/18 12:00		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	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:58	7440-38-2	
Barium	0.018	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:58	7440-39-3	
Boron	0.0093J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:58	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:58	7440-43-9	
Calcium	22.0J	mg/L	25.0	0.69	50	10/04/18 11:09	10/09/18 01:04	7440-70-2	D3
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:58	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:58	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:58	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	106	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.8	mg/L	0.25	0.024	1		10/05/18 00:58	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 00:58	16984-48-8	
Sulfate	0.59J	mg/L	1.0	0.017	1		10/05/18 00:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 269957

QC Batch: 14744 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 269957001, 269957002

METHOD BLANK: 65855 Matrix: Water
Associated Lab Samples: 269957001, 269957002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 22:41	
Barium	mg/L	ND	0.010	0.00078	10/08/18 22:41	
Boron	mg/L	ND	0.040	0.0039	10/08/18 22:41	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 22:41	
Calcium	mg/L	ND	0.50	0.014	10/08/18 22:41	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 22:41	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 22:41	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 22:41	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 22:41	

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	105	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857 65858

Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	102	75-125	3	20	
Barium	mg/L	0.025	.1	.1	0.13	0.12	101	100	75-125	0	20	
Boron	mg/L	0.0042J	1	1	0.93	0.91	93	91	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Calcium	mg/L	6.2	1	1	7.0	7.0	76	74	75-125	0	20	M1
Cobalt	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Lithium	mg/L	0.0010J	.1	.1	0.095	0.094	94	93	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Selenium	mg/L	0.0024J	.1	.1	0.11	0.10	103	98	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 Hammond AP 1&2

Pace Project No.: 269957

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		65857		65858								
Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	mg/L	ND	.1	.1	0.10	0.10	103	101	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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

QC Batch: 14690	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 269957001, 269957002	

LABORATORY CONTROL SAMPLE: 65578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 65579

Parameter	Units	269910001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2490	2740	10	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: Plant Hammond AP 1&2
Pace Project No.: 269957

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 269957001, 269957002

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 269957001, 269957002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15	
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15	

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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 Hammond AP 1&2

Pace Project No.: 269957

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 - 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.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 269957

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269957001	HGWA-1	EPA 3005A	14744	EPA 6020B	14814
269957002	HGWA-4	EPA 3005A	14744	EPA 6020B	14814
269957001	HGWA-1	SM 2540C	14690		
269957002	HGWA-4	SM 2540C	14690		
269957001	HGWA-1	EPA 300.0	14765		
269957002	HGWA-4	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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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.

Section A				Section B				Section C													
Required Client Information:								Required Project Information:													
Company: Georgia Power - Coal Combustion Residuals		Report To: Joji Abraham / Lauren Petty		Copy To: Geosyntec		Invoice Information: SCSinvoices@southernco.com		Company Name: Southern Company		Address: 2480 Maner Road, Atlanta, GA 30339		Attention: SCSinvoices@southernco.com		Page: _____ Of _____							
Email: jabraham@southernco.com		Purchase Order #: SCS10348606		Project Name: Hammond AP 1 & 2		Project #: 62652		Pace Project Manager: betsy.mcdaniel@parcalabs.com		Pace Profile #: 327.5.2		State / Location: GA		Regulatory Agency: _____							
Requested Due Date: Standard JAT																					
ITEM #	MATRIX	CODE	COLLECTED			SAMPLE TYPE (G=GRAB C=COMP)		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS					
			START	END	DATE							TIME	DATE			TIME	RELIQUISHED BY / AFFILIATION	DATE	TIME	Received on	TEMP in C
1	HQWA-1		10/01/18	14:51	10/01/18	15:01	4	1	3	10/15/18	19:45	Mike Napper / Pace		10/21/18	1008						
2	HQWA-4		10/01/18	16:57	10/01/18	17:04	4	1	3	10/21/18	10:08	MCDANIEL		10/21/18	12:00						
3-12			N/A																		

WO# : 269957

269957



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO# : 269957

PM: BM Due Date: 10/09/18

CLIENT: CAPower-CCR

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 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.5

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: <u>10/02/18 [Signature]</u>

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>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: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

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

October 25, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

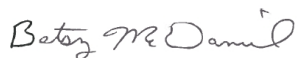
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 269958

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2
Pace Project No.: 269958

Pennsylvania Certification IDs

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
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 Hammond AP 1&2
Pace Project No.: 269958

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269958001	HGWA-1	Water	10/01/18 15:01	10/02/18 12:00
269958002	HGWA-4	Water	10/01/18 17:04	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 269958

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269958001	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269958002	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269958

Sample: HGWA-1 **Lab ID: 269958001** Collected: 10/01/18 15:01 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	-0.0333 ± 0.0759 (0.265) C:92% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.132 ± 0.310 (0.688) C:76% T:90%	pCi/L	10/16/18 11:20	15262-20-1	
Total Radium	Total Radium Calculation	0.132 ± 0.386 (0.953)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269958

Sample: HGWA-4 **Lab ID: 269958002** Collected: 10/01/18 17:04 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.132 ± 0.138 (0.265) C:99% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	-0.255 ± 0.310 (0.789) C:65% T:86%	pCi/L	10/16/18 11:20	15262-20-1	
Total Radium	Total Radium Calculation	0.132 ± 0.448 (1.05)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 269958

QC Batch: 315900

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 269958001, 269958002

METHOD BLANK: 1541949

Matrix: Water

Associated Lab Samples: 269958001, 269958002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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 Hammond AP 1&2

Pace Project No.: 269958

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 269958001, 269958002

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 269958001, 269958002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 269958

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2
Pace Project No.: 269958

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269958001	HGWA-1	EPA 9315	315900		
269958002	HGWA-4	EPA 9315	315900		
269958001	HGWA-1	EPA 9320	315901		
269958002	HGWA-4	EPA 9320	315901		
269958001	HGWA-1	Total Radium Calculation	317509		
269958002	HGWA-4	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

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

WO#: 269958

PM: BM Due Date: 10/30/18
CLIENT: CAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.5 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/02/18 PW

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>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)

October 10, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

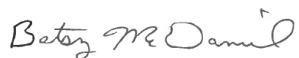
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610027

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

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: Plant Hammond AP 1&2

Pace Project No.: 2610027

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610027001	HGWA-5	Water	10/02/18 10:17	10/03/18 13:00
2610027002	HGWC-8	Water	10/02/18 12:35	10/03/18 13:00
2610027003	FD-01	Water	10/02/18 00:00	10/03/18 13:00
2610027004	HGWC-7	Water	10/02/18 15:28	10/03/18 13:00
2610027005	HGWC-9	Water	10/02/18 16:57	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610027001	HGWA-5	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610027002	HGWC-8	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610027003	FD-01	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610027004	HGWC-7	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610027005	HGWC-9	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

Sample: HGWA-5		Lab ID: 2610027001		Collected: 10/02/18 10:17		Received: 10/03/18 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	0.00064J	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 18:41	7440-38-2	
Barium	0.047	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 18:41	7440-39-3	
Boron	0.0081J	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 18:41	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 18:41	7440-43-9	
Calcium	28.9	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 18:46	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 18:41	7440-48-4	
Lithium	0.0035J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 18:41	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 18:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 18:41	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	146	mg/L	25.0	10.0	1		10/04/18 15:27		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.4	mg/L	0.25	0.024	1		10/05/18 02:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 02:42	16984-48-8	
Sulfate	20.3	mg/L	1.0	0.017	1		10/05/18 02:42	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

Sample: HGWC-8		Lab ID: 2610027002		Collected: 10/02/18 12:35	Received: 10/03/18 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	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 18:52	7440-38-2		
Barium	0.061	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 18:52	7440-39-3		
Boron	2.7	mg/L	2.0	0.20	50	10/05/18 13:39	10/08/18 18:58	7440-42-8		
Calcium	118	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 18:58	7440-70-2		
Cobalt	0.0016J	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 18:52	7440-48-4		
Lithium	0.0025J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 18:52	7439-93-2		
Molybdenum	0.47	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 18:52	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 18:52	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 18:52	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	597	mg/L	25.0	10.0	1		10/04/18 15:27			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	89.4	mg/L	2.5	0.24	10		10/05/18 09:00	16887-00-6		
Fluoride	0.51	mg/L	0.30	0.029	1		10/05/18 03:02	16984-48-8		
Sulfate	193	mg/L	10.0	0.17	10		10/05/18 09:00	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

Sample: FD-01		Lab ID: 2610027003		Collected: 10/02/18 00:00	Received: 10/03/18 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	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:04	7440-38-2		
Barium	0.063	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:04	7440-39-3		
Boron	2.9	mg/L	2.0	0.20	50	10/05/18 13:39	10/08/18 19:09	7440-42-8		
Calcium	123	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 19:09	7440-70-2		
Cobalt	0.0016J	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:04	7440-48-4		
Lithium	0.0025J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:04	7439-93-2		
Molybdenum	0.49	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:04	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:04	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:04	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	597	mg/L	25.0	10.0	1		10/04/18 15:27			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	86.1	mg/L	2.5	0.24	10		10/05/18 09:21	16887-00-6		
Fluoride	0.50	mg/L	0.30	0.029	1		10/05/18 03:44	16984-48-8		
Sulfate	186	mg/L	10.0	0.17	10		10/05/18 09:21	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

Sample: HGWC-7		Lab ID: 2610027004		Collected: 10/02/18 15:28		Received: 10/03/18 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	0.0019J	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:15	7440-38-2	
Barium	0.078	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:15	7440-39-3	
Boron	0.98	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 19:15	7440-42-8	
Calcium	108	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 19:21	7440-70-2	
Cobalt	0.00091J	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:15	7440-48-4	
Lithium	0.0030J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:15	7439-93-2	
Molybdenum	0.039	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:15	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	426	mg/L	25.0	10.0	1		10/04/18 15:27		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	52.6	mg/L	2.5	0.24	10		10/05/18 09:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 04:04	16984-48-8	
Sulfate	120	mg/L	10.0	0.17	10		10/05/18 09:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

Sample: HGWC-9 **Lab ID: 2610027005** Collected: 10/02/18 16:57 Received: 10/03/18 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	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:38	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:38	7440-39-3	
Boron	2.5	mg/L	2.0	0.20	50	10/05/18 13:39	10/08/18 19:44	7440-42-8	
Calcium	173	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 19:44	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:38	7440-48-4	
Lithium	0.0040J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:38	7439-93-2	
Molybdenum	0.028	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:38	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:38	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:38	7440-28-0	

2540C Total Dissolved Solids

Analytical Method: SM 2540C

Total Dissolved Solids	693	mg/L	25.0	10.0	1		10/08/18 17:34		
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0

Chloride	142	mg/L	2.5	0.24	10		10/05/18 10:03	16887-00-6	
Fluoride	0.031J	mg/L	0.30	0.029	1		10/05/18 04:25	16984-48-8	
Sulfate	218	mg/L	10.0	0.17	10		10/05/18 10:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

QC Batch: 14855 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610027001, 2610027002, 2610027003, 2610027004, 2610027005

METHOD BLANK: 66522 Matrix: Water
Associated Lab Samples: 2610027001, 2610027002, 2610027003, 2610027004, 2610027005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 18:29	
Barium	mg/L	ND	0.010	0.00078	10/08/18 18:29	
Boron	mg/L	ND	0.040	0.0039	10/08/18 18:29	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 18:29	
Calcium	mg/L	ND	0.50	0.014	10/08/18 18:29	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 18:29	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 18:29	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 18:29	

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66524 66525

Parameter	Units	2610033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.10	104	102	75-125	2	20	
Barium	mg/L	0.089	.1	.1	0.19	0.18	102	94	75-125	4	20	
Boron	mg/L	0.43	1	1	1.3	1.3	89	90	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Calcium	mg/L	42.5	1	1	41.5	42.3	-94	-14	75-125	2	20	M6
Cobalt	mg/L	0.00081J	.1	.1	0.099	0.096	98	95	75-125	3	20	
Lithium	mg/L	0.0013J	.1	.1	0.095	0.096	93	95	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	106	101	75-125	5	20	
Selenium	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		66524		66525								
Parameter	Units	2610033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	mg/L	ND	.1	.1	0.10	0.096	101	96	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

QC Batch: 14793

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 2610027001, 2610027002, 2610027003, 2610027004

LABORATORY CONTROL SAMPLE: 66016

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	415	104	84-108	

SAMPLE DUPLICATE: 66017

Parameter	Units	2610023001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	60.0	56.0	7	10	

SAMPLE DUPLICATE: 66018

Parameter	Units	2610023020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

QC Batch: 14909	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610027005	

LABORATORY CONTROL SAMPLE: 66853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 66854

Parameter	Units	2610027005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	699	1	10	

SAMPLE DUPLICATE: 66855

Parameter	Units	2610112002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	330	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610027

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610027001, 2610027002, 2610027003, 2610027004, 2610027005

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 2610027001, 2610027002, 2610027003, 2610027004, 2610027005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15		
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15		
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15		

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610027

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 - 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.

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

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 Hammond AP 1&2
Pace Project No.: 2610027

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610027001	HGWA-5	EPA 3005A	14855	EPA 6020B	14882
2610027002	HGWC-8	EPA 3005A	14855	EPA 6020B	14882
2610027003	FD-01	EPA 3005A	14855	EPA 6020B	14882
2610027004	HGWC-7	EPA 3005A	14855	EPA 6020B	14882
2610027005	HGWC-9	EPA 3005A	14855	EPA 6020B	14882
2610027001	HGWA-5	SM 2540C	14793		
2610027002	HGWC-8	SM 2540C	14793		
2610027003	FD-01	SM 2540C	14793		
2610027004	HGWC-7	SM 2540C	14793		
2610027005	HGWC-9	SM 2540C	14909		
2610027001	HGWA-5	EPA 300.0	14765		
2610027002	HGWC-8	EPA 300.0	14765		
2610027003	FD-01	EPA 300.0	14765		
2610027004	HGWC-7	EPA 300.0	14765		
2610027005	HGWC-9	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GAPower

Project # _____

WO#: 2610027

PM: BM Due Date: 10/10/18

CLIENT: GAPower-CCR

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 33

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/03/18 [initials]

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>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, 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: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

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

October 26, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

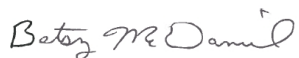
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610028

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Pennsylvania Certification IDs

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

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 Hammond AP 1&2

Pace Project No.: 2610028

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610028001	HGWA-5	Water	10/02/18 10:17	10/03/18 13:00
2610028002	HGWC-8	Water	10/02/18 12:35	10/03/18 13:00
2610028003	FD-01	Water	10/02/18 00:00	10/03/18 13:00
2610028004	HGWC-7	Water	10/02/18 15:28	10/03/18 13:00
2610028005	HGWC-9	Water	10/02/18 16:57	10/03/18 13:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610028001	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610028002	HGWC-8	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610028003	FD-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610028004	HGWC-7	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610028005	HGWC-9	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Sample: HGWA-5 **Lab ID: 2610028001** Collected: 10/02/18 10:17 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.193 ± 0.151 (0.251) C:97% T:NA	pCi/L	10/17/18 08:01	13982-63-3	
Radium-228	EPA 9320	0.296 ± 0.335 (0.703) C:73% T:91%	pCi/L	10/16/18 14:42	15262-20-1	
Total Radium	Total Radium Calculation	0.489 ± 0.486 (0.954)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Sample: HGWC-8 **Lab ID: 2610028002** Collected: 10/02/18 12:35 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.320 ± 0.206 (0.341) C:100% T:NA	pCi/L	10/17/18 08:01	13982-63-3	
Radium-228	EPA 9320	0.893 ± 0.426 (0.729) C:74% T:87%	pCi/L	10/16/18 14:42	15262-20-1	
Total Radium	Total Radium Calculation	1.21 ± 0.632 (1.07)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Sample: FD-01 **Lab ID: 2610028003** Collected: 10/02/18 00:00 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.323 ± 0.196 (0.305) C:96% T:NA	pCi/L	10/17/18 08:01	13982-63-3	
Radium-228	EPA 9320	0.358 ± 0.393 (0.822) C:74% T:80%	pCi/L	10/16/18 14:42	15262-20-1	
Total Radium	Total Radium Calculation	0.681 ± 0.589 (1.13)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Sample: HGWC-7 **Lab ID: 2610028004** Collected: 10/02/18 15:28 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.307 ± 0.175 (0.219) C:96% T:NA	pCi/L	10/17/18 08:00	13982-63-3	
Radium-228	EPA 9320	0.530 ± 0.412 (0.818) C:73% T:82%	pCi/L	10/16/18 14:43	15262-20-1	
Total Radium	Total Radium Calculation	0.837 ± 0.587 (1.04)	pCi/L	10/22/18 12:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

Sample: HGWC-9 **Lab ID: 2610028005** Collected: 10/02/18 16:57 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.237 ± 0.168 (0.272) C:100% T:NA	pCi/L	10/17/18 08:01	13982-63-3	
Radium-228	EPA 9320	0.373 ± 0.306 (0.602) C:74% T:85%	pCi/L	10/16/18 14:42	15262-20-1	
Total Radium	Total Radium Calculation	0.610 ± 0.474 (0.874)	pCi/L	10/22/18 12:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

QC Batch: 315900 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610028001, 2610028002, 2610028003, 2610028004, 2610028005

METHOD BLANK: 1541949 Matrix: Water

Associated Lab Samples: 2610028001, 2610028002, 2610028003, 2610028004, 2610028005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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 Hammond AP 1&2

Pace Project No.: 2610028

QC Batch: 315901 Analysis Method: EPA 9320

QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610028001, 2610028002, 2610028003, 2610028004, 2610028005

METHOD BLANK: 1541950 Matrix: Water

Associated Lab Samples: 2610028001, 2610028002, 2610028003, 2610028004, 2610028005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610028

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2
Pace Project No.: 2610028

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610028001	HGWA-5	EPA 9315	315900		
2610028002	HGWC-8	EPA 9315	315900		
2610028003	FD-01	EPA 9315	315900		
2610028004	HGWC-7	EPA 9315	315900		
2610028005	HGWC-9	EPA 9315	315900		
2610028001	HGWA-5	EPA 9320	315901		
2610028002	HGWC-8	EPA 9320	315901		
2610028003	FD-01	EPA 9320	315901		
2610028004	HGWC-7	EPA 9320	315901		
2610028005	HGWC-9	EPA 9320	315901		
2610028001	HGWA-5	Total Radium Calculation	317509		
2610028002	HGWC-8	Total Radium Calculation	317509		
2610028003	FD-01	Total Radium Calculation	317509		
2610028004	HGWC-7	Total Radium Calculation	317511		
2610028005	HGWC-9	Total Radium Calculation	317511		

REPORT OF LABORATORY ANALYSIS

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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.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manier Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Fax: []
 Requested Due Date: 3/24/18

Section B
 Required Project Information:
 Report To: Jody Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 1 & 2
 Project #: GW 6581

Section C
 Invoice Information:
 Attention: SCSinvoices@southernco.com
 Company Name: []
 Address: []
 Pace Quote: []
 Pace Project Manager: betsy.mcdaniel@paciabs.com
 Pace Profile #: 327.5.2

Regulatory Agency: []
 State / Location: GA

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES				ANALYSES TEST Y/N	REQUESTED ANALYSIS FILTERED (Y/N)				RESIDUAL CHLORINE (Y/N)
			START DATE TIME	END DATE TIME				UNPRESERVED	H2SO4	HNO3	HCl		Na2S2O3	Methanol	Other	Metals *	
1	HGWA-5	DW	10/2/18 1007	10/2/18 1017	WTG		4	1	3								
2	HGWC-8	WT	10/2/18 1725	10/2/18 1735	G		4	1	3								
3	FD-01	SL	10/2/18 -	10/2/18 -	WTG		4	1	3								
4	HGWC-7	WP	10/2/18 1518	10/2/18 1528	WTG		4	1	3								
5	HGWC-9	WP	10/2/18 1647	10/2/18 1657	WTG		4	1	3								
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION: Noelia Muskus
 DATE: 10/2/18
 TIME: 1825

ACCEPTED BY / AFFILIATION: Nardos Titahur
 DATE: 10/2/18
 TIME: 1825

RELINQUISHED BY / AFFILIATION: Noelia Muskus
 DATE: 10/2/18
 TIME: 2030

ACCEPTED BY / AFFILIATION: M. J. Navesen / Pace
 DATE: 10/3/18
 TIME: 1000

RELINQUISHED BY / AFFILIATION: Noelia Muskus
 DATE: 10/3/18
 TIME: 1300

ACCEPTED BY / AFFILIATION: Noelia Muskus
 DATE: 10/3/18
 TIME: 1300

TEMP in C: 40

Received on: []
 Ice: []
 Custody Sealed: []
 Cooler: []
 Samples Intact: []

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Noelia Muskus
 SIGNATURE of SAMPLER: Noelia Muskus
 DATE Signed: 10/02/18

WO#: 2610028

2610028



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2610028**
PM: BM Due Date: 10/31/18
CLIENT: **GA Power-CCR**

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 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/03/18 mg

		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>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, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
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):	_____	Lot # of added preservative

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 10, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610035

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610035

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: Plant Hammond AP 1&2

Pace Project No.: 2610035

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610035001	HGWA-6	Water	10/02/18 10:21	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610035

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610035001	HGWA-6	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610035

Sample: HGWA-6		Lab ID: 2610035001		Collected: 10/02/18 10:21		Received: 10/03/18 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	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 21:15	7440-38-2	
Barium	0.19	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 21:15	7440-39-3	
Boron	0.014J	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 21:15	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 21:15	7440-43-9	
Calcium	54.7	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 21:21	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 21:15	7440-48-4	
Lithium	0.010J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 21:15	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 21:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 21:15	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	228	mg/L	25.0	10.0	1		10/08/18 17:34		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	1.7	mg/L	0.25	0.024	1		10/08/18 17:25	16887-00-6	
Fluoride	0.076J	mg/L	0.30	0.029	1		10/08/18 17:25	16984-48-8	
Sulfate	38.5	mg/L	1.0	0.017	1		10/08/18 17:25	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610035

QC Batch: 14855 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 2610035001

METHOD BLANK: 66522 Matrix: Water

Associated Lab Samples: 2610035001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 18:29	
Barium	mg/L	ND	0.010	0.00078	10/08/18 18:29	
Boron	mg/L	ND	0.040	0.0039	10/08/18 18:29	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 18:29	
Calcium	mg/L	ND	0.50	0.014	10/08/18 18:29	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 18:29	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 18:29	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 18:29	

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66524 66525

Parameter	Units	2610033001		66525		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.10	104	102	75-125	2	20	
Barium	mg/L	0.089	.1	.1	0.19	0.18	102	94	75-125	4	20	
Boron	mg/L	0.43	1	1	1.3	1.3	89	90	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Calcium	mg/L	42.5	1	1	41.5	42.3	-94	-14	75-125	2	20	M6
Cobalt	mg/L	0.00081J	.1	.1	0.099	0.096	98	95	75-125	3	20	
Lithium	mg/L	0.0013J	.1	.1	0.095	0.096	93	95	75-125	2	20	
Selenium	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	2	20	
Thallium	mg/L	ND	.1	.1	0.10	0.096	101	96	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 Hammond AP 1&2

Pace Project No.: 2610035

QC Batch: 14909	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610035001	

LABORATORY CONTROL SAMPLE: 66853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 66854

Parameter	Units	2610027005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	699	1	10	

SAMPLE DUPLICATE: 66855

Parameter	Units	2610112002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	330	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610035

QC Batch: 14939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610035001

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610035001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001		66936		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15		
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15		
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15	M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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 Hammond AP 1&2

Pace Project No.: 2610035

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 - 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.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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 Hammond AP 1&2

Pace Project No.: 2610035

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610035001	HGWA-6	EPA 3005A	14855	EPA 6020B	14882
2610035001	HGWA-6	SM 2540C	14909		
2610035001	HGWA-6	EPA 300.0	14939		

REPORT OF LABORATORY ANALYSIS

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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.

Section A	Section B	Section C
Required Client Information:	Required Project Information:	Invoice Information:
Company: Georgia Power - Coal Combustion Residuals	Report To: Jolu Abraham / Lauren Petty	Attention: SCSinvoices@southernco.com
Address: 2480 Maner Road	Copy To: Geosyntec	Company Name:
Allanta, GA 30339	Purchase Order #: SCS10348606	Address:
Email: jabraham@southernco.com	Project Name: Hammond AP 1 & 2	Pace Project Manager: betsy.mcdaniel@pacelabs.com
Phone: (404)506-7239	Project #:	Pace Profile #: 327.5.2
Requested Due Date:		Slate / Location: GA
		Regulatory Agency:

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Custody	Sealed	Cooler	Samples
			START	END													
1	HGWA-6	DW	10/2/2018	10:21	U	Nardos Tilahun	10/2/2018	1830	Nardos Tilahun	10/2/18	1830						
2		WT															
3		WW															
4		P															
5		SL															
6		CL															
7		WP															
8		AR															
9		OT															
10		TS															
11																	
12																	

ADDITIONAL COMMENTS	SAMPLE CONDITIONS
* Metals list: As, Ba, B, Cd, Cr, Co, Li, Mo, Se, Tl	Received on
** Metals list: As, Ba, B, Cd, Cr, Co, Li, Mo, Se, Tl (no Cd)	TEMP in C
*** Metals list: As, Ba, B, Cd, Cr, Co, Li, Se, Tl (no Mo)	Custody (Y/N)
	Sealed (Y/N)
	Cooler (Y/N)
	Samples (Y/N)
SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER: DAN GIBBS	
SIGNATURE of SAMPLER: <i>[Signature]</i>	DATE Signed: 10-02-2018

WO#: 2610035

2610035



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2610035**
PM: BM Due Date: 10/10/18
CLIENT: CAPower-CCR

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 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/03/18 MK

		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>GCW</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)

October 26, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

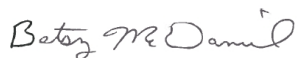
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610036

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2
Pace Project No.: 2610036

Pennsylvania Certification IDs

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
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 Hammond AP 1&2

Pace Project No.: 2610036

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610036001	HGWA-6	Water	10/02/18 10:21	10/03/18 13:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2
Pace Project No.: 2610036

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610036001	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610036

Sample: HGWA-6 **Lab ID: 2610036001** Collected: 10/02/18 10:21 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.149 ± 0.152 (0.290) C:95% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.494 ± 0.339 (0.652) C:73% T:99%	pCi/L	10/16/18 11:23	15262-20-1	
Total Radium	Total Radium Calculation	0.643 ± 0.491 (0.942)	pCi/L	10/22/18 12:11	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610036

QC Batch: 315900

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610036001

METHOD BLANK: 1541949

Matrix: Water

Associated Lab Samples: 2610036001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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 Hammond AP 1&2

Pace Project No.: 2610036

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610036001

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 2610036001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610036

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2
Pace Project No.: 2610036

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610036001	HGWA-6	EPA 9315	315900		
2610036001	HGWA-6	EPA 9320	315901		
2610036001	HGWA-6	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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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.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To	Jouj Abraham / Lauren Petty	Attention	SCSinvoices@southernco.com
Address	2480 Manner Road Atlanta, GA 30339	Copy To	Geosyntec	Company Name	
Email	jabraham@southernco.com	Purchase Order #	SCS10348606	Address	
Phone	(404)506-7239	Project Name	Hammond AP 1 & 2	Pace Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date		Project #		Pace Profile #	327.5.2
Regulatory Agency		State / Location		GA	

Page: 1 of 1

ITEM #	MATRIX	CODE	COLLECTED		MATRIX CODE (see valid codes to left)	SAMPLER TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES				ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Custody	Sealed	Cooler	Intact
			START	END				H2SO4	HNO3	HCl	NaOH								
1	HGWA-6	DW	10/22/18	10/21	ET	U	4	1	3										
2		WT	10/22/18	10/21															
3		WW	10/22/18	10/21															
4		P	10/22/18	10/21															
5		SL	10/22/18	10/21															
6		OL	10/22/18	10/21															
7		WP	10/22/18	10/21															
8		AR	10/22/18	10/21															
9		OT	10/22/18	10/21															
10		TS	10/22/18	10/21															
11																			
12																			

ADDITIONAL COMMENTS	REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Nardos Tilahun	10/22/18	1830	Nardos Tilahun	10/21/18	1830	
	Nardos Tilahun	10/18/18	2030	LeTB Law	10/21/18	2025	
	LeTB Law	10/18/18	1000	M. Lee Nguyen / Pace	10/18/18	1000	
				M. Lee Nguyen	10/09/18	1300	

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: DAN GIBBS
 SIGNATURE OF SAMPLER: *[Signature]*
 DATE Signed: 10-02-2018

WO# : 2610036

2610036



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: 2610036

PM: **BM** Due Date: **10/31/18**

CLIENT: **GA Power-CCR**

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 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/03/18 MA

	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>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, 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)

October 10, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

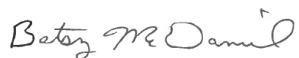
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610039

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610039

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: Plant Hammond AP 1&2

Pace Project No.: 2610039

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610039001	HGWC-10	Water	10/02/18 17:40	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610039

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610039001	HGWC-10	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610039

Sample: HGWC-10 **Lab ID: 2610039001** Collected: 10/02/18 17:40 Received: 10/03/18 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	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 22:12	7440-38-2	
Barium	0.076	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 22:12	7440-39-3	
Boron	0.62	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 22:12	7440-42-8	
Calcium	144	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 22:18	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 22:12	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 22:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 22:12	7439-98-7	
Selenium	0.0023J	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 22:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 22:12	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	572	mg/L	25.0	10.0	1		10/08/18 17:35		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Chloride	48.3	mg/L	0.25	0.024	1		10/08/18 20:49	16887-00-6	
Fluoride	0.17J	mg/L	0.30	0.029	1		10/08/18 20:49	16984-48-8	
Sulfate	178	mg/L	10.0	0.17	10		10/08/18 20:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610039

QC Batch: 14855 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 2610039001

METHOD BLANK: 66522 Matrix: Water

Associated Lab Samples: 2610039001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 18:29	
Barium	mg/L	ND	0.010	0.00078	10/08/18 18:29	
Boron	mg/L	ND	0.040	0.0039	10/08/18 18:29	
Calcium	mg/L	ND	0.50	0.014	10/08/18 18:29	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 18:29	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 18:29	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 18:29	

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	104	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66524 66525

Parameter	Units	2610033001		66525		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.10	104	102	75-125	2	20	
Barium	mg/L	0.089	.1	.1	0.19	0.18	102	94	75-125	4	20	
Boron	mg/L	0.43	1	1	1.3	1.3	89	90	75-125	0	20	
Calcium	mg/L	42.5	1	1	41.5	42.3	-94	-14	75-125	2	20	M6
Cobalt	mg/L	0.00081J	.1	.1	0.099	0.096	98	95	75-125	3	20	
Lithium	mg/L	0.0013J	.1	.1	0.095	0.096	93	95	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	106	101	75-125	5	20	
Selenium	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	2	20	
Thallium	mg/L	ND	.1	.1	0.10	0.096	101	96	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 Hammond AP 1&2

Pace Project No.: 2610039

QC Batch: 14909	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610039001	

LABORATORY CONTROL SAMPLE: 66853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 66854

Parameter	Units	2610027005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	699	1	10	

SAMPLE DUPLICATE: 66855

Parameter	Units	2610112002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	330	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: Plant Hammond AP 1&2

Pace Project No.: 2610039

QC Batch: 14939	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610039001	

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610039001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15	
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15	
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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 Hammond AP 1&2

Pace Project No.: 2610039

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 - 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.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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 Hammond AP 1&2

Pace Project No.: 2610039

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610039001	HGWC-10	EPA 3005A	14855	EPA 6020B	14882
2610039001	HGWC-10	SM 2540C	14909		
2610039001	HGWC-10	EPA 300.0	14939		

REPORT OF LABORATORY ANALYSIS

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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.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Georgia Power - Coal Combustion Residuals Address: 2460 Maner Road Atlanta, GA 30339 Email: jbraham@southernco.com Phone: (404)506-7239 Requested Due Date:	Report To: Jyu Abraham / Lauren Petty Copy To: Geosyntec Purchase Order #: SCS10348606 Project Name: Hammond AP 1 & 2 Project #:	Attention: SCSINVOICES@southernco.com Company Name: Address: Pace Quote: betsy.mcDaniel@pacelabs.com, Pace Project Manager: Pace Profile #: 327.5.2
	Regulatory Agency:	State / Location:
		GA

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				# OF CONTAINERS	Preservatives	Y/N	Requested Analysis Filtered (Y/N)						Residual Chlorine (Y/N)																	
					START DATE	START TIME	END DATE	END TIME				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3		Methanol	Other	Metals *	Metals **	TDS, Chloride, Fluoride, Sulfate	Radium 226/228											
																									MATRIX	DRINKING WATER	WATER	WASTE WATER	PRODUCT	SL	CL	WP	AR	OT	TS
1	HGWC-10			G	10/21/650	10/21/740			4																										
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SALE CONDITIONS
	Nardos Iilahun	10/21/18	2030		10/21/18	2030	
		10/31/18	1000	M. K. Nguyen / Pace	10/31/18	1000	
				M. Abelman	10/03/18	1300	

Temp in C: 47

Received on ice (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y

TEMP IN C: 47

RECEIVED ON ICE (Y/N): Y

CUSTODY SEALED COOLER (Y/N): Y

SAMPLES INTACT (Y/N): Y

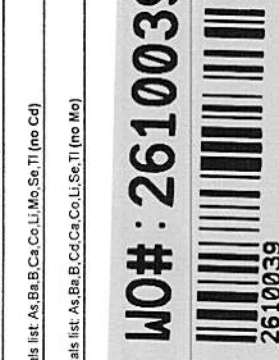
SAMPLER NAME AND SIGNATURE: Nardos Iilahun

PRINT NAME OF SAMPLER: Nardos Iilahun

SIGNATURE OF SAMPLER: [Signature]

DATE SIGNED: 10/2/2018

WO#: 2610039



2610039



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2610039**

PM: BM Due Date: 10/10/18
CLIENT: CAPower-CCR

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 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/03/18 MK

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>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, 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)

October 26, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610040

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2
Pace Project No.: 2610040

Pennsylvania Certification IDs

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
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 Hammond AP 1&2
Pace Project No.: 2610040

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610040001	HGWC-10	Water	10/02/18 17:40	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610040

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610040001	HGWC-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610040

Sample: HGWC-10 **Lab ID: 2610040001** Collected: 10/02/18 17:40 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.244 ± 0.184 (0.312) C:90% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.704 ± 0.348 (0.584) C:77% T:85%	pCi/L	10/19/18 11:16	15262-20-1	
Total Radium	Total Radium Calculation	0.948 ± 0.532 (0.896)	pCi/L	10/22/18 12:16	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610040

QC Batch: 316253

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610040001

METHOD BLANK: 1543390

Matrix: Water

Associated Lab Samples: 2610040001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.293 ± 0.309 (0.637) C:77% T:81%	pCi/L	10/19/18 11:16	

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: Plant Hammond AP 1&2

Pace Project No.: 2610040

QC Batch: 316252

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610040001

METHOD BLANK: 1543389

Matrix: Water

Associated Lab Samples: 2610040001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.132 ± 0.137 (0.260) C:96% T:NA	pCi/L	10/17/18 09:36	

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 Hammond AP 1&2
Pace Project No.: 2610040

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 2610040

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610040001	HGWC-10	EPA 9315	316252		
2610040001	HGWC-10	EPA 9320	316253		
2610040001	HGWC-10	Total Radium Calculation	317511		

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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.

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road, Atlanta, GA 30339
 Email: j.abraham@southernco.com
 Phone: (404) 506-7239
 Requested Due Date: _____

Section B
Required Project Information:
 Report To: Jaju Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 1 & 2
 Project #: _____

Section C
Invoice Information:
 Attention: SCSinvoices@southernco.com
 Company Name: _____
 Address: _____
 Pace Quote: _____
 Pace Project Manager: beisy.mcdaniel@pacelabs.com
 Pace Profile #: 327.5.2
 State / Location: GA
 Regulatory Agency: _____

Page: 1 of 1

ITEM #	MATRIX	CODE	COLLECTED	SAMPLE TYPE (G=GRAB C=COMP)	START		END		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS																								
					DATE	TIME	DATE	TIME							TEMP in C	Received on	Ice (Y/N)	Custody	Sealed	Cooler (Y/N)	Samples Intact (Y/N)																		
1	Drinking Water	DW	10/2/18 1650	G	10/2/18 1740	4	1	3		Unpreserved	H2SO4	Y	Metals *	Y	Metals **	Y	TDS, Chloride, Fluoride, Sulfate	Y	Radium 226/228	N																			
2																																							
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							

ADDITIONAL COMMENTS

REQUISITIONED BY / AFFILIATION: Nardos Tlahuh

DATE: 10/2/18 2030

ACCEPTED BY / AFFILIATION: M. K. Nguyen / Pace

DATE: 10/3/18 1000

SIGNATURE of SAMPLER: Nardos Tlahuh

DATE Signed: 10/2/2018

TEMP in C: 4°C

Received on: 10/03/18 1300

SAMPLER NAME AND SIGNATURE: M. K. Nguyen / Pace

PRINT Name of SAMPLER: M. K. Nguyen / Pace

SIGNATURE of SAMPLER: M. K. Nguyen / Pace

DATE Signed: 10/03/18 1300

WO#: 2610040

2610040



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: 2610040

PM: BM

Due Date: 10/31/18

CLIENT: CAPower-CCR

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 33

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 10/03/18 MK

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>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, 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)

October 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

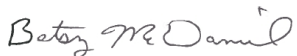
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610114

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

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: Plant Hammond AP 1&2

Pace Project No.: 2610114

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610114001	HGWC-11	Water	10/03/18 10:20	10/04/18 12:30
2610114002	HGWC-12	Water	10/03/18 11:25	10/04/18 12:30
2610114003	HGWC-18	Water	10/03/18 13:57	10/04/18 12:30
2610114004	FD-02	Water	10/03/18 00:00	10/04/18 12:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610114001	HGWC-11	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610114002	HGWC-12	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610114003	HGWC-18	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610114004	FD-02	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	MWB, RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

Sample: HGWC-11 **Lab ID: 2610114001** Collected: 10/03/18 10:20 Received: 10/04/18 12:30 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	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 19:03	7440-38-2	
Barium	0.033	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 19:03	7440-39-3	
Boron	0.91	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 19:03	7440-42-8	
Calcium	89.0	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 19:09	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 19:03	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 19:03	7439-93-2	
Molybdenum	0.020	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 19:03	7439-98-7	
Selenium	0.0090J	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 19:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 19:03	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	449	mg/L	25.0	10.0	1		10/08/18 17:47		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Chloride	24.8	mg/L	0.25	0.024	1		10/09/18 04:45	16887-00-6	
Fluoride	0.31	mg/L	0.30	0.029	1		10/09/18 04:45	16984-48-8	
Sulfate	233	mg/L	5.0	0.085	5		10/09/18 04:22	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2
Pace Project No.: 2610114

Sample: HGWC-12		Lab ID: 2610114002		Collected: 10/03/18 11:25		Received: 10/04/18 12:30		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	0.0037J	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 19:15	7440-38-2	
Barium	0.087	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 19:15	7440-39-3	
Boron	2.3	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 19:15	7440-42-8	
Calcium	125	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 19:20	7440-70-2	
Cobalt	0.0011J	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 19:15	7440-48-4	
Lithium	0.0083J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 19:15	7439-93-2	
Molybdenum	0.054	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 19:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 19:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 19:15	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	607	mg/L	25.0	10.0	1		10/08/18 17:47		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	88.4	mg/L	1.2	0.12	5		10/09/18 05:07	16887-00-6	
Fluoride	0.15J	mg/L	0.30	0.029	1		10/09/18 05:30	16984-48-8	
Sulfate	191	mg/L	5.0	0.085	5		10/09/18 05:07	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

Sample: HGWC-18		Lab ID: 2610114003		Collected: 10/03/18 13:57	Received: 10/04/18 12:30	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	0.0039J	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 19:26	7440-38-2	
Barium	0.032	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 19:26	7440-39-3	
Boron	9.3	mg/L	0.20	0.020	5	10/09/18 14:10	10/12/18 17:28	7440-42-8	
Cadmium	0.0027	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 19:26	7440-43-9	
Calcium	421	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 19:32	7440-70-2	
Cobalt	0.19	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 19:26	7440-48-4	
Lithium	0.015J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 19:26	7439-93-2	
Selenium	0.017	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 19:26	7782-49-2	
Thallium	ND	mg/L	0.0050	0.00071	5	10/09/18 14:10	10/12/18 17:28	7440-28-0	D3
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	2180	mg/L	25.0	10.0	1		10/08/18 17:48		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	302	mg/L	12.5	1.2	50		10/09/18 05:53	16887-00-6	
Fluoride	0.32	mg/L	0.30	0.029	1		10/09/18 06:15	16984-48-8	
Sulfate	1170	mg/L	50.0	0.85	50		10/09/18 05:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

Sample: FD-02		Lab ID: 2610114004		Collected: 10/03/18 00:00	Received: 10/04/18 12:30	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	0.0041J	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 19:37	7440-38-2		
Barium	0.032	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 19:37	7440-39-3		
Boron	9.2	mg/L	0.20	0.020	5	10/09/18 14:10	10/12/18 17:34	7440-42-8		
Cadmium	0.0026	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 19:37	7440-43-9		
Calcium	400	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 19:43	7440-70-2		
Cobalt	0.19	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 19:37	7440-48-4		
Lithium	0.015J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 19:37	7439-93-2		
Selenium	0.015	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 19:37	7782-49-2		
Thallium	ND	mg/L	0.0050	0.00071	5	10/09/18 14:10	10/12/18 17:34	7440-28-0	D3	
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	1910	mg/L	25.0	10.0	1		10/08/18 17:48			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	312	mg/L	2.5	0.24	10		10/09/18 06:38	16887-00-6		
Fluoride	0.33	mg/L	0.30	0.029	1		10/09/18 07:01	16984-48-8		
Sulfate	1110	mg/L	25.0	0.42	25		10/16/18 13:28	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610114

QC Batch: 15013 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610114001, 2610114002, 2610114003, 2610114004

METHOD BLANK: 67190 Matrix: Water
Associated Lab Samples: 2610114001, 2610114002, 2610114003, 2610114004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43	
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43	
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43	
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43	
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43	
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43	
Lithium	mg/L	ND	0.050	0.00097	10/11/18 17:43	
Molybdenum	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43	
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43	

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lithium	mg/L	.1	0.097	97	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67194 67195

Parameter	Units	2610117002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20	
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20	R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20	
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20	M6
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20	
Lithium	mg/L	ND	.1	.1	0.099	0.097	98	97	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	109	108	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		67194		67195								
Parameter	Units	2610117002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610114

QC Batch: 14910 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610114001, 2610114002, 2610114003, 2610114004

LABORATORY CONTROL SAMPLE: 66856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 66857

Parameter	Units	2610112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	232	3	10	

SAMPLE DUPLICATE: 66858

Parameter	Units	2610117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	615	13	10 D6	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610114

QC Batch: 14939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610114001, 2610114002, 2610114003, 2610114004

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610114001, 2610114002, 2610114003, 2610114004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15	
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15	
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610114

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 - 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.

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.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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: Plant Hammond AP 1&2

Pace Project No.: 2610114

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610114001	HGWC-11	EPA 3005A	15013	EPA 6020B	15073
2610114002	HGWC-12	EPA 3005A	15013	EPA 6020B	15073
2610114003	HGWC-18	EPA 3005A	15013	EPA 6020B	15073
2610114004	FD-02	EPA 3005A	15013	EPA 6020B	15073
2610114001	HGWC-11	SM 2540C	14910		
2610114002	HGWC-12	SM 2540C	14910		
2610114003	HGWC-18	SM 2540C	14910		
2610114004	FD-02	SM 2540C	14910		
2610114001	HGWC-11	EPA 300.0	14939		
2610114002	HGWC-12	EPA 300.0	14939		
2610114003	HGWC-18	EPA 300.0	14939		
2610114004	FD-02	EPA 300.0	14939		

REPORT OF LABORATORY ANALYSIS

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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.

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manner Road
 Atlanta, GA 30339
 Email: j.abraham@southernco.com
 Phone: (404)506-7239
 Fax:
 Requested Due Date: Standard TAT

Section B

Report Project Information:

Report To: Jey Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 1 & 2
 Project #: GW6381

Section C

Invoice Information:

Attention: SCSINVOICES@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327.5.2
 State / Location: GA
 Regulatory Agency:
 State / Location: GA

ITEM #	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL CL WP AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Requested Analysis Filtered (Y/N)															
			START DATE	START TIME				END DATE	END TIME	SAMPLER NAME AND SIGNATURE	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)		
																						ANALYSES TEST	Metals *
1	HGWC-11		10/3/18	10:10	10/3/18	10:20	4	H2SO4	Unpreserved	NaOH	Na2SO3	Methanol	Other	Metals *	X	Metals **	X	TDS, Chloride, Fluoride, Sulfate	X	Radium 226/228	X	Residual Chlorine (Y/N)	2
2	HGWC-12		10/3/18	11:15	10/3/18	11:25	4	H2SO4	Unpreserved	NaOH	Na2SO3	Methanol	Other	Metals *	X	Metals **	X	TDS, Chloride, Fluoride, Sulfate	X	Radium 226/228	X	Residual Chlorine (Y/N)	2
3	HGWC-18		10/3/18	13:47	10/3/18	13:57	4	H2SO4	Unpreserved	NaOH	Na2SO3	Methanol	Other	Metals *	Y	Metals **	Y	TDS, Chloride, Fluoride, Sulfate	Y	Radium 226/228	Y	Residual Chlorine (Y/N)	2
4	FD-02		10/3/18		10/3/18		4	H2SO4	Unpreserved	NaOH	Na2SO3	Methanol	Other	Metals *	X	Metals **	X	TDS, Chloride, Fluoride, Sulfate	X	Radium 226/228	X	Residual Chlorine (Y/N)	2
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

* Metals list: As, Ba, B, Cd, Ca, Co, Cr, Li, Mo, Se, Ti
 ** Metals list: As, Ba, B, Ca, Co, Li, Mo, Se, Ti (no Cd)
 *** Metals list: As, Ba, B, Cd, Ca, Co, Li, Se, Ti (no Mo)

WO#: 2610114

2610114

TEMP in C: 21.0

Received on Ice (Y/N): X

Custody Sealed (Y/N): X

Samples Intact (Y/N): X

DATE Signed: 10/13/2018

SIGNATURE of SAMPLER: [Signature]

PRINT Name of SAMPLER: Rich Murray

SAMPLER NAME AND SIGNATURE: [Signature]



Sample Condition Upon Receipt

Client Name: GCA Power

Project # _____

WO#: 2610114
PM: BM Due Date: 10/11/18
CLIENT: GCA Power-CCR

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 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/09/18 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>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: _____
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Field Data Required? Y / N

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 29, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

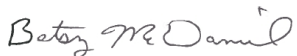
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610115

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2
Pace Project No.: 2610115

Pennsylvania Certification IDs

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
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: Plant Hammond AP 1&2

Pace Project No.: 2610115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610115001	HGWC-11	Water	10/03/18 10:20	10/04/18 12:30
2610115002	HGWC-12	Water	10/03/18 11:25	10/04/18 12:30
2610115003	HGWC-18	Water	10/03/18 13:57	10/04/18 12:30
2610115004	FD-02	Water	10/03/18 00:00	10/04/18 12:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610115001	HGWC-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610115002	HGWC-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610115003	HGWC-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610115004	FD-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

Sample: HGWC-11 **Lab ID: 2610115001** Collected: 10/03/18 10:20 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.254 ± 0.161 (0.226) C:98% T:NA	pCi/L	10/17/18 12:02	13982-63-3	
Radium-228	EPA 9320	1.23 ± 0.496 (0.778) C:73% T:86%	pCi/L	10/19/18 15:49	15262-20-1	
Total Radium	Total Radium Calculation	1.48 ± 0.657 (1.00)	pCi/L	10/22/18 12:29	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

Sample: HGWC-12 **Lab ID: 2610115002** Collected: 10/03/18 11:25 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.176 ± 0.149 (0.264) C:98% T:NA	pCi/L	10/17/18 12:02	13982-63-3	
Radium-228	EPA 9320	0.394 ± 0.407 (0.847) C:72% T:87%	pCi/L	10/19/18 15:49	15262-20-1	
Total Radium	Total Radium Calculation	0.570 ± 0.556 (1.11)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

Sample: HGWC-18 **Lab ID: 2610115003** Collected: 10/03/18 13:57 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.11 ± 0.340 (0.241) C:96% T:NA	pCi/L	10/17/18 12:02	13982-63-3	
Radium-228	EPA 9320	1.11 ± 0.477 (0.790) C:75% T:88%	pCi/L	10/19/18 15:49	15262-20-1	
Total Radium	Total Radium Calculation	2.22 ± 0.817 (1.03)	pCi/L	10/22/18 12:29	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

Sample: FD-02 **Lab ID: 2610115004** Collected: 10/03/18 00:00 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.836 ± 0.305 (0.291) C:93% T:NA	pCi/L	10/17/18 10:01	13982-63-3	
Radium-228	EPA 9320	1.01 ± 0.488 (0.846) C:76% T:81%	pCi/L	10/19/18 15:49	15262-20-1	
Total Radium	Total Radium Calculation	1.85 ± 0.793 (1.14)	pCi/L	10/22/18 12:29	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

QC Batch:	316253	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2610115001, 2610115002, 2610115003, 2610115004		

METHOD BLANK:	1543390	Matrix:	Water
Associated Lab Samples:	2610115001, 2610115002, 2610115003, 2610115004		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.293 ± 0.309 (0.637) C:77% T:81%	pCi/L	10/19/18 11:16	

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: Plant Hammond AP 1&2

Pace Project No.: 2610115

QC Batch: 316252 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610115001, 2610115002, 2610115003, 2610115004

METHOD BLANK: 1543389 Matrix: Water

Associated Lab Samples: 2610115001, 2610115002, 2610115003, 2610115004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.132 ± 0.137 (0.260) C:96% T:NA	pCi/L	10/17/18 09:36	

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 Hammond AP 1&2
Pace Project No.: 2610115

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 - 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.

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-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 2610115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610115001	HGWC-11	EPA 9315	316252		
2610115002	HGWC-12	EPA 9315	316252		
2610115003	HGWC-18	EPA 9315	316252		
2610115004	FD-02	EPA 9315	316252		
2610115001	HGWC-11	EPA 9320	316253		
2610115002	HGWC-12	EPA 9320	316253		
2610115003	HGWC-18	EPA 9320	316253		
2610115004	FD-02	EPA 9320	316253		
2610115001	HGWC-11	Total Radium Calculation	317515		
2610115002	HGWC-12	Total Radium Calculation	317515		
2610115003	HGWC-18	Total Radium Calculation	317515		
2610115004	FD-02	Total Radium Calculation	317515		

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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.

Section A Required Client Information: Company: Georgia Power - Coal Combustion Residuals, Address: 2480 Maner Road, Atlanta, GA 30339, Email: jbraham@southernco.com, Phone: (404)506-7239, Requested Due Date: Standard TAT

Section B Required Project Information: Report To: Jojo Abraham / Lauren Petty, Copy To: Geosyntec, Purchase Order #: SCS10348506, Project Name: Hammond AP 1 & 2, Project #: GW6301

Section C Invoice Information: Attention: SCSinvoicemails@southernco.com, Company Name: Pace Quote, Pace Project Manager: betsy.mcdaniel@pacelabs.com, Pace Profile #: 327.5.2, Regulatory Agency: State/Location: GA

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (S=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	Y/N	REQUESTED ANALYSIS FILTERED (Y/N)		TEMP in C	Received on	Custody	Sealed	Cooler	Samples
			START DATE TIME	END DATE TIME			UNPRESERVED	H2SO4			HNO3	HCl						
1	HGW	WC-11	10/3/18 10:10	10/3/18 10:20	G	4	3	X	X	X	X	X	17.30	10/3/18				
2	HGW	WC-12	10/3/18 11:15	10/3/18 11:25	G	4	3	X	X	X	X	X	17:45	10/3/18				
3	HGW	WC-18	10/3/18 13:47	10/3/18 13:57	G	4	3	X	X	X	X	X	19:30	10/3/18				
4	FD	ØZ	10/3/18		G	4	3	X	X	X	X	X	10:00	10/4/18				
5	REMOVED																	
6	REMOVED																	
7	REMOVED																	
8	REMOVED																	
9	REMOVED																	
10	REMOVED																	
11	REMOVED																	
12	REMOVED																	

ADDITIONAL COMMENTS: Rel M, Nardia, Mike

RELINQUISHED BY / AFFILIATION: Rel M, Nardia, Mike

ACCEPTED BY / AFFILIATION: Mike

DATE SIGNED: 10/3/2018

SIGNATURE OF SAMPLER: Rel M

DATE SIGNED: 10/3/2018

WO# : 2610115

Page 13 of 14



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 2610115

PM: BM Due Date: 11/01/18

CLIENT: GAPower-CCR

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 S3 Type of Ice: Wet Blue None

Cooler Temperature 2°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Samples on ice, cooling process has begun
Date and Initials of person examining contents: 10/04/18 MK

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>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: _____

October 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610117

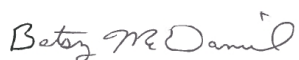
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 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.

This revised report replaces the report issued on October 15, 2018. The report has been revised to remove molybdenum data from HGWC-15 per consultant request. No other changes have been made to this 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

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: Plant Hammond AP 1&2

Pace Project No.: 2610117

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610117001	HGWC-16	Water	10/03/18 10:07	10/04/18 12:30
2610117002	HGWC-17	Water	10/03/18 11:41	10/04/18 12:30
2610117003	HGWC-15	Water	10/03/18 13:43	10/04/18 12:30
2610117004	HGWC-14	Water	10/03/18 15:45	10/04/18 12:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610117001	HGWC-16	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610117002	HGWC-17	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610117003	HGWC-15	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610117004	HGWC-14	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

Sample: HGWC-16		Lab ID: 2610117001		Collected: 10/03/18 10:07		Received: 10/04/18 12:30		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	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:12	7440-38-2		
Barium	0.11	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:12	7440-39-3		
Boron	1.7	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:12	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:12	7440-43-9		
Calcium	160	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 20:18	7440-70-2		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:12	7440-48-4		
Lithium	0.0026J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:12	7439-93-2		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:12	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:12	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	700	mg/L	25.0	10.0	1		10/08/18 17:48		D6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	49.9	mg/L	1.2	0.12	5		10/09/18 09:39	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 10:02	16984-48-8		
Sulfate	215	mg/L	5.0	0.085	5		10/09/18 09:39	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

Sample: HGWC-17		Lab ID: 2610117002		Collected: 10/03/18 11:41		Received: 10/04/18 12:30		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	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:23	7440-38-2	
Barium	0.028	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:23	7440-39-3	
Boron	6.9	mg/L	2.0	0.20	50	10/09/18 14:10	10/11/18 20:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:23	7440-43-9	
Calcium	286	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 20:29	7440-70-2	M6
Cobalt	0.016	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:23	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:23	7439-93-2	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:23	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	1250	mg/L	25.0	10.0	1		10/08/18 17:48		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	193	mg/L	5.0	0.48	20		10/09/18 10:24	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 10:48	16984-48-8	
Sulfate	651	mg/L	20.0	0.34	20		10/09/18 10:24	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

Sample: HGWC-15		Lab ID: 2610117003		Collected: 10/03/18 13:43	Received: 10/04/18 12:30	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	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 21:15	7440-38-2		
Barium	0.025	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 21:15	7440-39-3		
Boron	2.4	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 21:15	7440-42-8		
Cadmium	0.0026	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 21:15	7440-43-9		
Calcium	234	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 21:21	7440-70-2		
Cobalt	0.051	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 21:15	7440-48-4		
Lithium	0.0017J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 21:15	7439-93-2		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 21:15	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 21:15	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	1140	mg/L	25.0	10.0	1		10/08/18 17:48			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	200	mg/L	5.0	0.48	20		10/09/18 11:11	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 11:34	16984-48-8		
Sulfate	600	mg/L	20.0	0.34	20		10/09/18 11:11	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

Sample: HGWC-14		Lab ID: 2610117004		Collected: 10/03/18 15:45		Received: 10/04/18 12:30		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	0.0032J	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 21:26	7440-38-2		
Barium	0.020	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 21:26	7440-39-3		
Boron	16.4	mg/L	2.0	0.20	50	10/09/18 14:10	10/11/18 21:32	7440-42-8		
Cadmium	0.00010J	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 21:26	7440-43-9		
Calcium	558	mg/L	250	6.9	500	10/09/18 14:10	10/15/18 13:03	7440-70-2		
Cobalt	0.023	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 21:26	7440-48-4		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 21:26	7439-93-2		
Selenium	0.0056J	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 21:26	7782-49-2		
Thallium	0.00029J	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 21:26	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	2430	mg/L	25.0	10.0	1		10/08/18 17:48			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	368	mg/L	12.5	1.2	50		10/09/18 11:57	16887-00-6		
Fluoride	0.21J	mg/L	0.30	0.029	1		10/09/18 12:20	16984-48-8		
Sulfate	1550	mg/L	50.0	0.85	50		10/09/18 11:57	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

QC Batch: 15013 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 2610117001, 2610117002, 2610117003, 2610117004

METHOD BLANK: 67190 Matrix: Water
 Associated Lab Samples: 2610117001, 2610117002, 2610117003, 2610117004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43	
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43	
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43	
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43	
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43	
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43	
Lithium	mg/L	ND	0.050	0.00097	10/11/18 17:43	
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43	
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43	

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lithium	mg/L	.1	0.097	97	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67194 67195

Parameter	Units	2610117002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20	
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20	R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20	
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20	M6
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20	
Lithium	mg/L	ND	.1	.1	0.099	0.097	98	97	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

QC Batch: 14910 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 2610117001, 2610117002, 2610117003, 2610117004

LABORATORY CONTROL SAMPLE: 66856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 66857

Parameter	Units	2610112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	232	3	10	

SAMPLE DUPLICATE: 66858

Parameter	Units	2610117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	615	13	10	D6

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610117

QC Batch: 14939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610117001, 2610117002, 2610117003, 2610117004

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610117001, 2610117002, 2610117003, 2610117004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15	
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15	
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

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 - 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.

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.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 2610117

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610117001	HGWC-16	EPA 3005A	15013	EPA 6020B	15073
2610117002	HGWC-17	EPA 3005A	15013	EPA 6020B	15073
2610117003	HGWC-15	EPA 3005A	15013	EPA 6020B	15073
2610117004	HGWC-14	EPA 3005A	15013	EPA 6020B	15073
2610117001	HGWC-16	SM 2540C	14910		
2610117002	HGWC-17	SM 2540C	14910		
2610117003	HGWC-15	SM 2540C	14910		
2610117004	HGWC-14	SM 2540C	14910		
2610117001	HGWC-16	EPA 300.0	14939		
2610117002	HGWC-17	EPA 300.0	14939		
2610117003	HGWC-15	EPA 300.0	14939		
2610117004	HGWC-14	EPA 300.0	14939		

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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.

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404) 506-7239 Fax
 Requested Due Date: Standard TAT

Section B

Required Project Information:

Report To: Joju Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 1 & 2
 Project #: GWC-5B1

Section C

Invoice Information:

Attention: scsinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@paceciabs.com
 Pace Profile #: 327 5 2
 Regulatory Agency:
 State / Location: GA

Page: 1 Of 1

ITEM #	MATRIX CODE	SAMPLE ID	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES					ANALYSES TEST Y/N	REQUESTED ANALYSIS FILTERED (Y/N)					TEMP in C	Received on	Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)											
			START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3		Methanol	Other	Metals *	Metals **	TDS, Chloride, Fluoride, Sulfate							Radium 226/228	Residual Chlorine (Y/N)									
			TIME	TIME			UNPRESERVED	UNPRESERVED	UNPRESERVED	UNPRESERVED	UNPRESERVED		UNPRESERVED	UNPRESERVED	UNPRESERVED	UNPRESERVED	UNPRESERVED							UNPRESERVED	UNPRESERVED									
1	WT G	HGWC-16	10/27/18	10/27/18	WT G	4						Y	Y	Y	Y																			
2	WT G	HGWC-17	10/27/18	10/27/18	WT G	4						Y	Y	Y	Y																			
3	WT G	HGWC-15	10/27/18	10/27/18	WT G	4						Y	Y	Y	Y																			
4	WT G	HCWC-14	10/27/18	10/27/18	WT G	4						Y	Y	Y	Y																			
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		
11																																		
12																																		

RELINQUISHED BY / AFFILIATION: Nardos Tilakur
DATE: 10/3/18
TIME: 1745
SIGNATURE: [Signature]

ACCEPTED BY / AFFILIATION: Mike Nagypa Pace
DATE: 10/4/18
TIME: 1000
SIGNATURE: [Signature]

DATE SIGNED: 10/03/18

DATE SIGNED: 10/03/18

SAMPLER NAME AND SIGNATURE: Nardia M...
PRINT Name of SAMPLER: Nardia M...
SIGNATURE of SAMPLER: [Signature]

DATE SIGNED: 10/03/18

WO#: 2610117

2610117



Client Name: GA Power

WO#: **2610117**

PM: BM

Due Date: 10/11/18

CLIENT: GAPower-CCR

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 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.0°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/4/18 COJ

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 type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" 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)

October 29, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

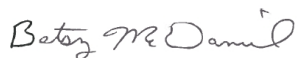
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610119

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Pennsylvania Certification IDs

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

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: Plant Hammond AP 1&2
Pace Project No.: 2610119

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610119001	HGWC-16	Water	10/03/18 10:07	10/04/18 12:30
2610119002	HGWC-17	Water	10/03/18 11:41	10/04/18 12:30
2610119003	HGWC-15	Water	10/03/18 13:43	10/04/18 12:30
2610119004	HGWC-14	Water	10/03/18 15:45	10/04/18 12:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610119001	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610119002	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610119003	HGWC-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610119004	HGWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Sample: HGWC-16 **Lab ID: 2610119001** Collected: 10/03/18 10:07 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.122 ± 0.139 (0.278) C:95% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.909 ± 0.554 (1.07) C:74% T:82%	pCi/L	10/19/18 12:39	15262-20-1	
Total Radium	Total Radium Calculation	1.03 ± 0.693 (1.35)	pCi/L	10/22/18 12:29	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Sample: HGWC-17 **Lab ID: 2610119002** Collected: 10/03/18 11:41 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.341 ± 0.197 (0.291) C:96% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.739 ± 0.449 (0.854) C:75% T:88%	pCi/L	10/19/18 12:39	15262-20-1	
Total Radium	Total Radium Calculation	1.08 ± 0.646 (1.15)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Sample: HGWC-15 **Lab ID: 2610119003** Collected: 10/03/18 13:43 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.230 ± 0.204 (0.391) C:95% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.628 ± 0.458 (0.913) C:76% T:87%	pCi/L	10/19/18 12:39	15262-20-1	
Total Radium	Total Radium Calculation	0.858 ± 0.662 (1.30)	pCi/L	10/22/18 12:29	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Sample: HGWC-14 **Lab ID: 2610119004** Collected: 10/03/18 15:45 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.373 ± 0.236 (0.398) C:91% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	1.11 ± 0.530 (0.912) C:77% T:74%	pCi/L	10/19/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	1.48 ± 0.766 (1.31)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

QC Batch:	316253	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2610119001, 2610119002, 2610119003, 2610119004		

METHOD BLANK:	1543390	Matrix:	Water
Associated Lab Samples:	2610119001, 2610119002, 2610119003, 2610119004		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.293 ± 0.309 (0.637) C:77% T:81%	pCi/L	10/19/18 11:16	

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: Plant Hammond AP 1&2

Pace Project No.: 2610119

QC Batch: 316252 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610119001, 2610119002, 2610119003, 2610119004

METHOD BLANK: 1543389 Matrix: Water

Associated Lab Samples: 2610119001, 2610119002, 2610119003, 2610119004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.132 ± 0.137 (0.260) C:96% T:NA	pCi/L	10/17/18 09:36	

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QUALIFIERS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 2610119

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610119001	HGWC-16	EPA 9315	316252		
2610119002	HGWC-17	EPA 9315	316252		
2610119003	HGWC-15	EPA 9315	316252		
2610119004	HGWC-14	EPA 9315	316252		
2610119001	HGWC-16	EPA 9320	316253		
2610119002	HGWC-17	EPA 9320	316253		
2610119003	HGWC-15	EPA 9320	316253		
2610119004	HGWC-14	EPA 9320	316253		
2610119001	HGWC-16	Total Radium Calculation	317515		
2610119002	HGWC-17	Total Radium Calculation	317515		
2610119003	HGWC-15	Total Radium Calculation	317515		
2610119004	HGWC-14	Total Radium Calculation	317515		

REPORT OF LABORATORY ANALYSIS

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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.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham / Lauren Peltz	Attention: SCSinvoices@southernco.com	Company Name: SCSinvoices@southernco.com	Company Name: SCSinvoices@southernco.com	Address: SCSinvoices@southernco.com
Address: 2480 Marner Road, Atlanta, GA 30339	Copy To: Geosyntec	Purchase Order #: SCS10348606	Address: SCSinvoices@southernco.com	Pace Quote: SCSinvoices@southernco.com	Pace Profile #: 327.52
Email: jabraham@southernco.com	Project Name: Hammond AP 1 & 2	Project Name: Hammond AP 1 & 2	Project Name: Hammond AP 1 & 2	Pace Project Manager: betsy.mcdaniel@pcelabs.com	Regulatory Agency: GA
Phone: (404)506-7239	Requested Due Date: Standard JAT	Project #: GUG3581	Project #: GUG3581	State / Location: GA	State / Location: GA

ITEM #	MATRIX CODE DW: Drinking Water WT: Water WW: Waste Water P: Product SL: Soil/Solid OL: Oil WP: Wipe AR: Air OT: Other TS: Tissue	SAMPLE ID One Character per box. (A-Z, 0-9 /, -)	COLLECTED		SAMPLE TYPE (G=Grab C=Comp)	MATRIX CODE (see valid codes to left)	OF CONTAINERS		PRESERVATIVES Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	ANALYSES TEST Y/N	REQUESTED ANALYSIS FILTERED (Y/N)					RECEIVED ON	TEMP n C	SAMPLE CONDITIONS																			
			START DATE	END DATE			START TIME	END TIME			DATE	TIME	DATE	TIME	DATE			TIME	DATE	TIME	DATE	TIME	Sealed	Custody	Cooler	Samples											
1		HGWC-16	10/07/18	10/07/18	0457	1067	WT G	4	1	3	Y	Y	Y	Y	Y	2	1																				
2		HGWC-17	10/07/18	10/07/18	1127	1141	WT G	4	1	3	Y	Y	Y	Y	Y	2	2																				
3		HGWC-15	10/07/18	10/07/18	1331	1345	WT G	4	1	3	Y	Y	Y	Y	Y	2	3																				
4		HCWC-14	10/07/18	10/07/18	1526	1545	WT G	4	1	3	Y	Y	Y	Y	Y	2	4																				
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Malik Mphah	10/07/18	1745	Nardos Tilahun	10/3/18	1745
Nardos Tilahun	10/3/18	1930	(Signature)	10/3/18	1930
(Signature)	10/4/18	1550	Mike Nguyen / Acc	10/4/18	1000
(Signature)	10/4/18	1330	Phenol / Jentla	10/4/18	1330
(Signature)	10/07/18		Noelia M. Stokes	10/07/18	
(Signature)	10/07/18		Malik Mphah	10/07/18	

WO#: 2610119

2610119

Sample Condition Upon Receipt



Client Name: GA Power

WO#: 2610119

PM: BM Due Date: 11/01/18
 CLIENT: GAPower-CCR

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

Thermometer Used 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.0°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/4/18 CCR

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 checked="" 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)

October 15, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

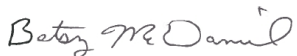
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610213

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610213

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: Plant Hammond AP 1&2
Pace Project No.: 2610213

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610213001	HGWC-13	Water	10/05/18 12:00	10/08/18 11:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2

Pace Project No.: 2610213

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610213001	HGWC-13	EPA 6020B	CSW	9
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610213

Sample: HGWC-13		Lab ID: 2610213001		Collected: 10/05/18 12:00	Received: 10/08/18 11:00	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	0.34	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 21:35	7440-38-2	
Barium	0.076	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 21:35	7440-39-3	
Boron	1.6	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 21:35	7440-42-8	
Calcium	73.6	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 21:41	7440-70-2	
Cobalt	0.0015J	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 21:35	7440-48-4	
Lithium	0.027J	mg/L	0.050	0.00097	1	10/10/18 13:15	10/12/18 21:35	7439-93-2	
Molybdenum	0.033	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 21:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 21:35	7782-49-2	
Thallium	0.00025J	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 21:35	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	322	mg/L	25.0	10.0	1		10/09/18 16:57		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	32.3	mg/L	0.25	0.024	1		10/11/18 11:30	16887-00-6	
Fluoride	0.77	mg/L	0.30	0.029	1		10/11/18 11:30	16984-48-8	
Sulfate	78.3	mg/L	10.0	0.17	10		10/11/18 11:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2
Pace Project No.: 2610213

QC Batch: 15129 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610213001

METHOD BLANK: 67679 Matrix: Water
Associated Lab Samples: 2610213001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 19:18	
Barium	mg/L	ND	0.010	0.00078	10/12/18 19:18	
Boron	mg/L	ND	0.040	0.0039	10/12/18 19:18	
Calcium	mg/L	ND	0.50	0.014	10/12/18 19:18	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 19:18	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 19:18	
Molybdenum	mg/L	ND	0.010	0.0019	10/12/18 19:18	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 19:18	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 19:18	

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.096	96	80-120	
Boron	mg/L	1	0.96	96	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lithium	mg/L	.1	0.099	99	80-120	
Molybdenum	mg/L	.1	0.096	96	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67681 67682

Parameter	Units	2610208001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20		
Barium	mg/L	0.081	.1	.1	0.18	0.17	95	91	75-125	2	20		
Boron	mg/L	0.15	1	1	1.2	1.2	106	106	75-125	0	20		
Calcium	mg/L	39.6	1	1	41.8	41.2	229	168	75-125	1	20	M6	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20		
Lithium	mg/L	0.016J	.1	.1	0.12	0.12	106	102	75-125	3	20		
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	106	107	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20		
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610213

QC Batch: 15066	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610213001	

LABORATORY CONTROL SAMPLE: 67393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 67394

Parameter	Units	2610166001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10200	10100	1	10	

SAMPLE DUPLICATE: 67395

Parameter	Units	2610210001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	813	828	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2

Pace Project No.: 2610213

QC Batch: 15085

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 2610213001

METHOD BLANK: 67500

Matrix: Water

Associated Lab Samples: 2610213001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	10/11/18 06:47	
Fluoride	mg/L	ND	0.30	0.029	10/11/18 06:47	
Sulfate	mg/L	ND	1.0	0.017	10/11/18 06:47	

LABORATORY CONTROL SAMPLE: 67501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67502

67503

Parameter	Units	2610208001		67503		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1.5	10	10	12.0	12.0	105	105	90-110	0	15		
Fluoride	mg/L	0.21J	10	10	10.3	10.3	101	101	90-110	0	15		
Sulfate	mg/L	10.6	10	10	20.5	20.5	99	99	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: Plant Hammond AP 1&2

Pace Project No.: 2610213

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 - 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.

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

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 Hammond AP 1&2

Pace Project No.: 2610213

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610213001	HGWC-13	EPA 3005A	15129	EPA 6020B	15152
2610213001	HGWC-13	SM 2540C	15066		
2610213001	HGWC-13	EPA 300.0	15085		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: 2610213
PM: BM
CLIENT: GAPower-CCR
Due Date: 10/15/18

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 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 215°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/8/18 CW

Comments:

Table with 16 rows and 2 columns. Rows include 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)

November 05, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

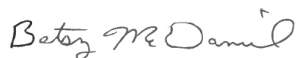
RE: Project: Plant Hammond AP 1&2
Pace Project No.: 2610214

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2

Pace Project No.: 2610214

Pennsylvania Certification IDs

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

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 Hammond AP 1&2
Pace Project No.: 2610214

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610214001	HGWC-13	Water	10/05/18 12:00	10/08/18 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2
Pace Project No.: 2610214

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610214001	HGWC-13	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610214

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.251 ± 0.215 (0.371) C:80% T:NA	pCi/L	10/25/18 08:03	13982-63-3	
Radium-228	EPA 9320	0.307 ± 0.445 (0.956) C:69% T:97%	pCi/L	10/24/18 18:47	15262-20-1	
Total Radium	Total Radium Calculation	0.558 ± 0.660 (1.33)	pCi/L	10/31/18 11:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2

Pace Project No.: 2610214

QC Batch: 316709

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610214001

METHOD BLANK: 1545548

Matrix: Water

Associated Lab Samples: 2610214001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.551 ± 0.333 (0.601) C:73% T:90%	pCi/L	10/24/18 16:02	

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 Hammond AP 1&2

Pace Project No.: 2610214

QC Batch: 317135

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610214001

METHOD BLANK: 1547224

Matrix: Water

Associated Lab Samples: 2610214001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0781 ± 0.155 (0.358) C:99% T:NA	pCi/L	10/25/18 08:03	

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 Hammond AP 1&2
Pace Project No.: 2610214

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2

Pace Project No.: 2610214

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610214001	HGWC-13	EPA 9315	317135		
2610214001	HGWC-13	EPA 9320	316709		
2610214001	HGWC-13	Total Radium Calculation	318622		

REPORT OF LABORATORY ANALYSIS

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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.

Section A Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Fax:
 Requested Due Date: Standard TAAT

Section B Required Project Information:
 Report To: Joju Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 1 & 2
 Project #:
 Section C Invoice Information:
 Attention: SCSInvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327.5.2

Regulatory Agency:
 State / Location: GA
 Page: Of

ITEM #	MATRIX CODE Drinking Water: DW Water: WT Wastewater: WW Wastewater Product: P Solid: SL Oil: OL Wipe: WP Air: AR Other: OT Tissue: TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
			START	END														
1	HGWC-13	WT	6	10/5/18	150	10/5/18	1200											
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Requested Analysis Filtered (Y/N)

Metals *	Metals **	TDS, Chloride, Fluoride, Sulfate	Radium 226/228
Residual Chlorine (Y/N)			

Analyses Test: Y/N

Preservatives: H2SO4, HNO3, HCl, NaOH, Na2SO3, Methanol, Other

OF CONTAINERS: 41 3

RELINQUISHED BY / AFFILIATION: Roll M Nollia Mjelhus

DATE: 10/5/18 1415

TIME: 1415

ACCEPTED BY / AFFILIATION: Mike Nguyen/Pace Cheryl-Jane

DATE: 10/8/18 0745

TIME: 0745

RELINQUISHED BY / AFFILIATION: Roll M Nollia Mjelhus

DATE: 10/3/18 100

TIME: 100

ACCEPTED BY / AFFILIATION: Roll M Nollia Mjelhus

DATE: 10/3/18 100

TIME: 100

SAMPLER NAME AND SIGNATURE: Roll M Nollia Mjelhus

PRINT Name of SAMPLER: Roll M Nollia Mjelhus

SIGNATURE of SAMPLER: Roll M Nollia Mjelhus

DATE Signed: 10/5/18

WO#: 2610214

2610214

Sample Condition Upon Receipt



Client Name: GA Power

WO#: **2610214**
PM: BM Due Date: 11/05/18
CLIENT: **CRPower-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Oth

Tracking #: _____

Proj. Name: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 032 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 215°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/8/18 COW

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>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, coliform, TOC, O&G, WI-DRO (water) <u>Bad</u> <input checked="" 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 09, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond - GW6581
Pace Project No.: 269953

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - GW6581

Pace Project No.: 269953

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: Plant Hammond - GW6581
Pace Project No.: 269953

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269953001	FB-01	Water	10/01/18 18:20	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - GW6581

Pace Project No.: 269953

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269953001	FB-01	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - GW6581
Pace Project No.: 269953

Sample: FB-01		Lab ID: 269953001		Collected: 10/01/18 18:20		Received: 10/02/18 12:00		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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/04/18 11:09	10/09/18 00:07	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:07	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:07	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/04/18 11:09	10/09/18 00:07	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:07	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:07	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/04/18 11:09	10/09/18 00:07	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/04/18 11:09	10/09/18 00:07	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:07	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/04/18 11:09	10/09/18 00:07	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/04/18 11:09	10/09/18 00:07	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:07	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:07	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/04/18 11:09	10/09/18 00:07	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:07	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/04/18 11:09	10/09/18 00:07	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:07	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:07	7440-62-2		
Zinc	0.0035J	mg/L	0.010	0.0021	1	10/04/18 11:09	10/09/18 00:07	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/09/18 10:40	10/09/18 14:29	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		10/03/18 17:16			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.064J	mg/L	0.25	0.024	1		10/04/18 23:36	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/04/18 23:36	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/04/18 23:36	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581

Pace Project No.: 269953

QC Batch: 14995	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 269953001	

METHOD BLANK: 67141 Matrix: Water
Associated Lab Samples: 269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/09/18 13:40	

LABORATORY CONTROL SAMPLE: 67142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0027	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67143 67144

Parameter	Units	269871003 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	.0025	.0025	0.0025	0.0022	101	87	75-125	15	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 Hammond - GW6581
Pace Project No.: 269953

QC Batch: 14744 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 269953001

METHOD BLANK: 65855 Matrix: Water
Associated Lab Samples: 269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/08/18 22:41	
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 22:41	
Barium	mg/L	ND	0.010	0.00078	10/08/18 22:41	
Beryllium	mg/L	ND	0.0030	0.000050	10/08/18 22:41	
Boron	mg/L	ND	0.040	0.0039	10/08/18 22:41	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 22:41	
Calcium	mg/L	ND	0.50	0.014	10/08/18 22:41	
Chromium	mg/L	ND	0.010	0.0016	10/08/18 22:41	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 22:41	
Copper	mg/L	ND	0.025	0.0013	10/08/18 22:41	
Lead	mg/L	ND	0.0050	0.00027	10/08/18 22:41	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 22:41	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Nickel	mg/L	ND	0.010	0.00095	10/08/18 22:41	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 22:41	
Silver	mg/L	ND	0.010	0.00095	10/08/18 22:41	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 22:41	
Vanadium	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Zinc	mg/L	0.0027J	0.010	0.0021	10/08/18 22:41	

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.10	105	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Copper	mg/L	.1	0.10	101	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Nickel	mg/L	.1	0.099	99	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Silver	mg/L	.1	0.10	101	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581
Pace Project No.: 269953

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	104	80-120	
Zinc	mg/L	.1	0.11	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857 65858

Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Antimony	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	102	75-125	3	20	
Barium	mg/L	0.025	.1	.1	0.13	0.12	101	100	75-125	0	20	
Beryllium	mg/L	ND	.1	.1	0.095	0.094	95	94	75-125	1	20	
Boron	mg/L	0.0042J	1	1	0.93	0.91	93	91	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Calcium	mg/L	6.2	1	1	7.0	7.0	76	74	75-125	0	20	M1
Chromium	mg/L	0.0023J	.1	.1	0.10	0.10	102	102	75-125	0	20	
Cobalt	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Copper	mg/L	ND	.1	.1	0.099	0.10	98	102	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Lithium	mg/L	0.0010J	.1	.1	0.095	0.094	94	93	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	0.0024J	.1	.1	0.11	0.10	103	98	75-125	5	20	
Silver	mg/L	ND	.1	.1	0.10	0.10	103	100	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	3	20	
Vanadium	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	1	20	
Zinc	mg/L	0.0052J	.1	.1	0.11	0.11	101	103	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581

Pace Project No.: 269953

QC Batch: 14690

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 269953001

LABORATORY CONTROL SAMPLE: 65578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 65579

Parameter	Units	269910001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2490	2740	10	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581
Pace Project No.: 269953

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 269953001

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		269951003		269951004		% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15	
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15	

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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QUALIFIERS

Project: Plant Hammond - GW6581

Pace Project No.: 269953

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 - 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.

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.

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 Hammond - GW6581

Pace Project No.: 269953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269953001	FB-01	EPA 3005A	14744	EPA 6020B	14814
269953001	FB-01	EPA 7470A	14995	EPA 7470A	15035
269953001	FB-01	SM 2540C	14690		
269953001	FB-01	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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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.

Section A	Section B	Section C	Page : Of
Required Client Information:	Required Project Information:	Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals	Report To: Jolu Abraham / Lauren Petty	Attention: SCSinvoices@southernco.com	
Address: 2480 Maner Road	Copy To: Geosyntec	Company Name:	
	Purchase Order #: SCS10348606	Address:	
Email: jabraham@southernco.com	Project Name: Plant Hammond - Huffaker Road	Pace Quote:	
Phone: (404)506-7239	Project #: 6N6381	Pace Project Manager: betsy.mcdaniel@pacelabs.com,	
Requested Due Date: Standard TAT		Pace Profile #: 328.3	
		State / Location: GA	
		Regulatory Agency:	

ITEM #	MATRIX	CODE	MIXTURE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES		Y/N	ANALYSES TEST		Y/N	REQUESTED ANALYSIS FILTERED (Y/N)				TEMP IN C	Received on	Custody	Sealed	Cooler	Samples	Intact		
					START DATE	START TIME			END DATE	END TIME		H2SO4	HNO3		HCl	NaOH	Na2S2O3	Methanol								Other	Metals (App. III + State)
1	Drinking Water	DW	None	G	10/10/18	18:15	10/10/18	18:20	4	1	3	Y	Y	Y	Y	Y	Y	N									
2	Water	WT	None	G	10/10/18																						
3	Waste Water	WW	None	G																							
4	Product	P	None	G																							
5	Soil/Solid	SL	None	G																							
6	Oil	OL	None	G																							
7	Wipe	WP	None	G																							
8	Air	AR	None	G																							
9	Other	OT	None	G																							
10	Tissue	TS	None	G																							
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
* Metals list: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn	Nolia Mustkus EPA	10/10/18	19:45	Lee	10/11/18	19:45	
* Metals App IV: Li, Hg, Mo,	Carli	10/10/18	10:05	Mike Nguyen/Pace M. Zalman	10/21/18	10:08	
					10/21/18	10:00	
						0.5	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Mustkus

SIGNATURE of SAMPLER: *Noelia Mustkus*

DATE Signed: 10/01/18

WO# : 269953

269953



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 269953

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

PM: BM

Due Date: 10/09/18

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

CLIENT: CAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.5

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/02/18 [initials]

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>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: _____

October 25, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

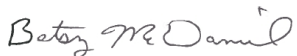
RE: Project: Plant Hammond - GW6581
Pace Project No.: 269954

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - GW6581
Pace Project No.: 269954

Pennsylvania Certification IDs

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
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: Plant Hammond - GW6581

Pace Project No.: 269954

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269954001	FB-01	Water	10/01/18 18:20	10/02/18 12:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - GW6581
Pace Project No.: 269954

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269954001	FB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

Sample: FB-01 **Lab ID: 269954001** Collected: 10/01/18 18:20 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.148 ± 0.142 (0.264) C:99% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.422 ± 0.333 (0.649) C:72% T:81%	pCi/L	10/16/18 11:24	15262-20-1	
Total Radium	Total Radium Calculation	0.570 ± 0.475 (0.913)	pCi/L	10/22/18 12:11	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

QC Batch: 315900

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 269954001

METHOD BLANK: 1541949

Matrix: Water

Associated Lab Samples: 269954001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 269954001

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 269954001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - GW6581
Pace Project No.: 269954

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - GW6581
Pace Project No.: 269954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269954001	FB-01	EPA 9315	315900		
269954001	FB-01	EPA 9320	315901		
269954001	FB-01	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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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.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To:	Joy Abraham / Lauren Petty	Attention:	SCSINVOICES@southernco.com
Address	2480 Marner Road Atlanta, GA 30339	Copy To:	Geosyntec	Company Name	
Email:	abraham@southernco.com	Purchase Order #	SCS10348606	Address:	
Phone:	(404)506-7239	Project Name:	Plant Hammond - Huffaker Road	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	328.3
				State / Location GA	
				Regulatory Agency	

Page : Of

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)		TEMP in C	SAMPLE CONDITIONS			
			START	END				DATE	TIME		Y/N	Y/N		Received on	Ice (Y/N)	Sealed (Y/N)	Custody (Y/N)
1	Drinking Water	DW	10/10/18	1815	10/10/18	1820	4	Unpreserved	H2SO4	Metals (App. III + State) *	2	2	19.45				
2	Waste Water	WW	10/10/18	1815	10/10/18	1820	4	Unpreserved	HCl	TDS, Chloride, Fluoride, Sulfate	2	2	19.45				
3	Product	P	10/10/18	1815	10/10/18	1820	4	Unpreserved	NaOH	Metals (App. IV) **	2	2	19.45				
4	Soil/Solid	SL	10/10/18	1815	10/10/18	1820	4	Unpreserved	Na2S2O3	Radon	2	2	19.45				
5	Oil	OL	10/10/18	1815	10/10/18	1820	4	Unpreserved	NaOH		2	2	19.45				
6	Wipe	WP	10/10/18	1815	10/10/18	1820	4	Unpreserved	HCl		2	2	19.45				
7	Air	AR	10/10/18	1815	10/10/18	1820	4	Unpreserved	HNO3		2	2	19.45				
8	Other	OT	10/10/18	1815	10/10/18	1820	4	Unpreserved	H2SO4		2	2	19.45				
9	Tissue	TS	10/10/18	1815	10/10/18	1820	4	Unpreserved	Unpreserved		2	2	19.45				
10			10/10/18	1815	10/10/18	1820	4	Unpreserved			2	2	19.45				
11			10/10/18	1815	10/10/18	1820	4	Unpreserved			2	2	19.45				
12			10/10/18	1815	10/10/18	1820	4	Unpreserved			2	2	19.45				

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME	
*Metals list: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn		Noelia Mufson		10/10/18		19:45		Noelia Mufson		10/17/18		19:45	
**Metals App. IV: Li, Hg, Mo,		Carl Blaw		10/21/18		10:00		Mike Nguyen/Pace		10/27/18		10:00	
		Noelia Mufson						Noelia Mufson					
		Carl Blaw						Noelia Mufson					
		Noelia Mufson						Noelia Mufson					
		Carl Blaw						Noelia Mufson					

WO# : 269954

269954

Page 10 of 11



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

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 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

WO# : 269954
PM: BM Due Date: 10/30/18
CLIENT: CAPower-CCR

Date and Initials of person examining contents: 10/02/18 MA

		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>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) Page 11 of 11

October 10, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

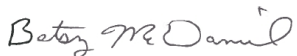
RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

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: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610031001	EB-01	Water	10/02/18 18:15	10/03/18 13:00
2610031002	FB-02	Water	10/02/18 18:00	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610031001	EB-01	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610031002	FB-02	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Sample: EB-01		Lab ID: 2610031001		Collected: 10/02/18 18:15		Received: 10/03/18 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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 19:49	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:49	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:49	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 19:49	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 19:49	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 19:49	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/05/18 13:39	10/08/18 19:49	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 19:49	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:49	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/05/18 13:39	10/08/18 19:49	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 19:49	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:49	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:49	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:49	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:49	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:49	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:49	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:49	7440-62-2		
Zinc	0.0046J	mg/L	0.010	0.0021	1	10/05/18 13:39	10/08/18 19:49	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/09/18 10:40	10/09/18 14:43	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	12.0J	mg/L	25.0	10.0	1		10/08/18 17:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.089J	mg/L	0.25	0.024	1		10/05/18 04:46	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 04:46	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/05/18 04:46	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Sample: FB-02		Lab ID: 2610031002		Collected: 10/02/18 18:00		Received: 10/03/18 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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 19:55	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:55	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 19:55	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 19:55	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 19:55	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/05/18 13:39	10/08/18 19:55	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 19:55	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:55	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/05/18 13:39	10/08/18 19:55	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 19:55	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:55	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:55	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:55	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:55	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:55	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:55	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:55	7440-62-2		
Zinc	0.0032J	mg/L	0.010	0.0021	1	10/05/18 13:39	10/08/18 19:55	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/09/18 10:40	10/09/18 14:50	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	14.0J	mg/L	25.0	10.0	1		10/08/18 17:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.073J	mg/L	0.25	0.024	1		10/05/18 05:06	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 05:06	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/05/18 05:06	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

QC Batch: 14995

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610031001, 2610031002

METHOD BLANK: 67141

Matrix: Water

Associated Lab Samples: 2610031001, 2610031002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/09/18 13:40	

LABORATORY CONTROL SAMPLE: 67142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0027	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67143

67144

Parameter	Units	269871003 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	.0025	.0025	0.0025	0.0022	101	87	75-125	15	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 Hammond - Huffaker Road
Pace Project No.: 2610031

QC Batch: 14855 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610031001, 2610031002

METHOD BLANK: 66522 Matrix: Water
Associated Lab Samples: 2610031001, 2610031002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/08/18 18:29	
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 18:29	
Barium	mg/L	ND	0.010	0.00078	10/08/18 18:29	
Beryllium	mg/L	ND	0.0030	0.000050	10/08/18 18:29	
Boron	mg/L	ND	0.040	0.0039	10/08/18 18:29	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 18:29	
Calcium	mg/L	ND	0.50	0.014	10/08/18 18:29	
Chromium	mg/L	ND	0.010	0.0016	10/08/18 18:29	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 18:29	
Copper	mg/L	ND	0.025	0.0013	10/08/18 18:29	
Lead	mg/L	ND	0.0050	0.00027	10/08/18 18:29	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 18:29	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Nickel	mg/L	ND	0.010	0.00095	10/08/18 18:29	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 18:29	
Silver	mg/L	ND	0.010	0.00095	10/08/18 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 18:29	
Vanadium	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Zinc	mg/L	0.0030J	0.010	0.0021	10/08/18 18:29	

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	106	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.10	103	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.10	102	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.099	99	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Silver	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

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 Hammond - Huffaker Road
Pace Project No.: 2610031

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	104	80-120	
Zinc	mg/L	.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66524 66525

Parameter	Units	2610033001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec							
Antimony	mg/L	ND	.1	.1	0.11	0.10	109	102	75-125	7	20				
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.10	104	102	75-125	2	20				
Barium	mg/L	0.089	.1	.1	0.19	0.18	102	94	75-125	4	20				
Beryllium	mg/L	ND	.1	.1	0.095	0.094	95	94	75-125	1	20				
Boron	mg/L	0.43	1	1	1.3	1.3	89	90	75-125	0	20				
Cadmium	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20				
Calcium	mg/L	42.5	1	1	41.5	42.3	-94	-14	75-125	2	20	M6			
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20				
Cobalt	mg/L	0.00081J	.1	.1	0.099	0.096	98	95	75-125	3	20				
Copper	mg/L	ND	.1	.1	0.098	0.095	98	95	75-125	4	20				
Lead	mg/L	ND	.1	.1	0.10	0.097	100	97	75-125	3	20				
Lithium	mg/L	0.0013J	.1	.1	0.095	0.096	93	95	75-125	2	20				
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	106	101	75-125	5	20				
Nickel	mg/L	ND	.1	.1	0.098	0.096	97	96	75-125	2	20				
Selenium	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	2	20				
Silver	mg/L	ND	.1	.1	0.10	0.098	101	98	75-125	3	20				
Thallium	mg/L	ND	.1	.1	0.10	0.096	101	96	75-125	5	20				
Vanadium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	2	20				
Zinc	mg/L	0.0041J	.1	.1	0.11	0.10	102	99	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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610031001, 2610031002

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 2610031001, 2610031002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		269951001		269951002		% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15	
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15	

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

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 - 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.

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.

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 Hammond - Huffaker Road

Pace Project No.: 2610031

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610031001	EB-01	EPA 3005A	14855	EPA 6020B	14882
2610031002	FB-02	EPA 3005A	14855	EPA 6020B	14882
2610031001	EB-01	EPA 7470A	14995	EPA 7470A	15035
2610031002	FB-02	EPA 7470A	14995	EPA 7470A	15035
2610031001	EB-01	SM 2540C	14909		
2610031002	FB-02	SM 2540C	14909		
2610031001	EB-01	EPA 300.0	14765		
2610031002	FB-02	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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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.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To:	Joy Abraham / Lauren Petty	Attention:	SCSINVOICES@southernco.com
Address	2480 Maner Road Atlanta, GA 30339	Copy To:	Geosyntec	Company Name	
Email:	jabraham@southernco.com	Purchase Order #	SCS10348606	Address:	
Phone:	(404)506-7239	Project Name:	Plant Hammond - Huffaker Road	Pace Quote	
Requested Due Date		Project #		Pace Project Manager:	betsy.mcdaniel@pacelabs.com
				Pace Profile #	328 3
				Regulatory Agency	
				State / Location	GA

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)		RECEIVED ON	TEMP IN C	SAMPLE CONDITIONS	
			START DATE	START TIME			END DATE	END TIME		UNPRESERVED	H2SO4		HNO3	HCl				NaOH
1	Drinking Water	DW	10/21/18	1805	G	WT	10/21/18	1815	4			Y	Y	Y				
2	Waste Water	WW	10/21/18	1750	G	WT	10/21/18	1800	4			Y	Y	Y				
3	Spill/Solid	SL																
4	Wipe	WP																
5	Other	OT																
6	Other	OT																
7	Tissue	TS																

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Medicia Moshes	10/21/18	1825	Nardos Titahua	10/21/18	1830
Nardos Titahua	10/21/18	2030	Lea Law	10/21/18	2035
Lea Law	10/21/18	1000	Medicia Moshes/Pace	10/21/18	1000
			Medicia Moshes	10/21/18	1300

WO#: 2610031

2610031



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: 2610031

PM: BM Due Date: 10/10/18

CLIENT: GA Power-CCR

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 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/03/18 MA

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>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, 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)

October 26, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Pennsylvania Certification IDs

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
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 Hammond - Huffaker Road

Pace Project No.: 2610032

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610032001	EB-01	Water	10/02/18 18:15	10/03/18 13:00
2610032002	FB-02	Water	10/02/18 18:00	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610032001	EB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610032002	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

Sample: EB-01 **Lab ID: 2610032001** Collected: 10/02/18 18:15 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.144 ± 0.145 (0.277) C:93% T:NA	pCi/L	10/17/18 10:01	13982-63-3	
Radium-228	EPA 9320	0.169 ± 0.285 (0.620) C:74% T:84%	pCi/L	10/18/18 16:10	15262-20-1	
Total Radium	Total Radium Calculation	0.313 ± 0.430 (0.897)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

Sample: FB-02 **Lab ID: 2610032002** Collected: 10/02/18 18:00 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.313 ± 0.257 (0.436) C:96% T:NA	pCi/L	10/17/18 10:01	13982-63-3	
Radium-228	EPA 9320	0.521 ± 0.421 (0.842) C:75% T:82%	pCi/L	10/18/18 16:24	15262-20-1	
Total Radium	Total Radium Calculation	0.834 ± 0.678 (1.28)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

QC Batch: 315903

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610032001, 2610032002

METHOD BLANK: 1541952

Matrix: Water

Associated Lab Samples: 2610032001, 2610032002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.882 ± 0.409 (0.676) C:77% T:84%	pCi/L	10/18/18 16:11	

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 Hammond - Huffaker Road

Pace Project No.: 2610032

QC Batch: 315902

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610032001, 2610032002

METHOD BLANK: 1541951

Matrix: Water

Associated Lab Samples: 2610032001, 2610032002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0238 ± 0.0883 (0.229) C:97% T:NA	pCi/L	10/17/18 10:01	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610032001	EB-01	EPA 9315	315902		
2610032002	FB-02	EPA 9315	315902		
2610032001	EB-01	EPA 9320	315903		
2610032002	FB-02	EPA 9320	315903		
2610032001	EB-01	Total Radium Calculation	317509		
2610032002	FB-02	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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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.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To	Joju Abraham / Lauren Petty	Attention	SCSinvoices@southernco.com
Address	2480 Manner Road Atlanta, GA 30339	Copy To	Geosyntec	Company Name	
Email	jabraham@southernco.com	Purchase Order #	SCS10348606	Pace Quote	
Phone	(404)506-7239	Project Name	Plant Hammond - Huffaker Road	Pace Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date		Project #		Pace Profile #	328 3
				Regulatory Agency GA	

#	ITEM #	MATRIX	COLLECTED	SAMPLE TYPE	MATRIX CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Y/N	Requested Analysis Filtered (Y/N)		TEMP in C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)
						START DATE	END DATE						DATE	TIME						
1	FB-01	Drinking Water		WT G	WT	10/02/18	18:05	15	4	H2SO4	Metals (App. III + State)	Y	Y	2						
2	FB-02	Drinking Water		WT G	WT	10/02/18	17:50	15	4	HCl	TDS, Chloride, Fluoride, Sulfate	Y	Y	2						
3		Drinking Water									Metals (App. IV)**	Y	Y	2						
4		Drinking Water																		
5		Drinking Water																		
6		Drinking Water																		
7		Drinking Water																		
8		Drinking Water																		
9		Drinking Water																		
10		Drinking Water																		
11		Drinking Water																		
12		Drinking Water																		

ADDITIONAL COMMENTS		RELINQUISHED BY/AFFILIATION	DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME
		Melicia Myshyn	10/01/18	18:05	Nardos Tilahun	10/2/18	18:30
		Nardos Tilahun	10/2/18	20:30	Esther	10/2/18	20:30
		Esther	10/3/18	10:00	Mitra Nardos/Pace	10/2/18	10:00
					Madamman	10/3/18	1:50
SAMPLER NAME AND SIGNATURE							
PRINT Name of SAMPLER:				DATE Signed:			
Melicia Myshyn				10/02/18			
SIGNATURE of SAMPLER:							
Melicia Myshyn							

WO# : 2610032

2610032



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO# : 2610032

PM: BM Due Date: 10/31/18

CLIENT: GAPower-CCR

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 83 Type of Ice: Wet Blue None

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments: _____

Samples on ice, cooling process has begun
Date and Initials of person examining contents: 10/31/18 MK

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>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, 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)

October 15, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

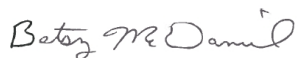
RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

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: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610116001	FB-03	Water	10/03/18 16:49	10/04/18 12:30
2610116002	EB-02	Water	10/03/18 17:01	10/04/18 12:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610116001	FB-03	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610116002	EB-02	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Sample: FB-03		Lab ID: 2610116001		Collected: 10/03/18 16:49		Received: 10/04/18 12:30		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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 20:00	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:00	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:00	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 20:00	7440-41-7		
Boron	0.0048J	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:00	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:00	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 14:10	10/11/18 20:00	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 20:00	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:00	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 20:00	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 20:00	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:00	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:00	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:00	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:00	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:00	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:00	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:00	7440-62-2		
Zinc	0.0026J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 20:00	7440-66-6		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:29	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	15.0J	mg/L	25.0	10.0	1		10/08/18 17:48			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.071J	mg/L	0.25	0.024	1		10/09/18 07:23	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 07:23	16984-48-8		
Sulfate	0.056J	mg/L	1.0	0.017	1		10/09/18 07:23	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Sample: EB-02		Lab ID: 2610116002		Collected: 10/03/18 17:01		Received: 10/04/18 12:30		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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 20:06	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:06	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:06	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 20:06	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:06	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:06	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 14:10	10/11/18 20:06	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 20:06	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:06	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 20:06	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 20:06	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:06	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:06	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:06	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:06	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:06	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:06	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:06	7440-62-2		
Zinc	0.0029J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 20:06	7440-66-6		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:32	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.098J	mg/L	0.25	0.024	1		10/09/18 09:16	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 09:16	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/09/18 09:16	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

QC Batch: 15032

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 67254

Matrix: Water

Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256

67257

Parameter	Units	269791027 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

QC Batch: 15013 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 67190 Matrix: Water
Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/11/18 17:43	
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43	
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43	
Beryllium	mg/L	ND	0.0030	0.000050	10/11/18 17:43	
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43	
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43	
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43	
Chromium	mg/L	ND	0.010	0.0016	10/11/18 17:43	
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43	
Copper	mg/L	ND	0.025	0.0013	10/11/18 17:43	
Lead	mg/L	ND	0.0050	0.00027	10/11/18 17:43	
Lithium	mg/L	ND	0.050	0.00097	10/11/18 17:43	
Molybdenum	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Nickel	mg/L	ND	0.010	0.00095	10/11/18 17:43	
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43	
Silver	mg/L	ND	0.010	0.00095	10/11/18 17:43	
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43	
Vanadium	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Zinc	mg/L	ND	0.010	0.0021	10/11/18 17:43	

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	101	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.097	97	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Nickel	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.097	97	80-120	
Thallium	mg/L	.1	0.098	98	80-120	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	100	80-120	
Zinc	mg/L	.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67194 67195

Parameter	Units	2610117002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	
Antimony	mg/L	ND	.1	.1	0.11	0.11	108	110	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.096	96	96	75-125	0	20	
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20	R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20	
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20	M6
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.10	0.096	100	96	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.098	0.099	98	99	75-125	1	20	
Lithium	mg/L	ND	.1	.1	0.099	0.097	98	97	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	109	108	75-125	1	20	
Nickel	mg/L	0.0024J	.1	.1	0.10	0.10	101	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	
Silver	mg/L	ND	.1	.1	0.097	0.097	97	97	75-125	0	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	105	106	75-125	1	20	
Zinc	mg/L	0.0034J	.1	.1	0.10	0.10	98	99	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

QC Batch: 14939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001 Result	MS Spike Conc.	MSD Spike Conc.	66935		66936		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15	
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15	
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

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 - 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.

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.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610116001	FB-03	EPA 3005A	15013	EPA 6020B	15073
2610116002	EB-02	EPA 3005A	15013	EPA 6020B	15073
2610116001	FB-03	EPA 7470A	15032	EPA 7470A	15116
2610116002	EB-02	EPA 7470A	15032	EPA 7470A	15116
2610116001	FB-03	SM 2540C	14910		
2610116001	FB-03	EPA 300.0	14939		
2610116002	EB-02	EPA 300.0	14939		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 2610116

PM: **BM** Due Date: **10/11/18**

CLIENT: **GA Power-CCR**

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 S3

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: <u>10/04/18 MR</u>
--

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>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: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

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 29, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610118

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610118

Pennsylvania Certification IDs

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
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 Hammond - Huffaker Road

Pace Project No.: 2610118

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610118001	FB-03	Water	10/03/18 16:49	10/04/18 12:30
2610118002	EB-02	Water	10/03/18 17:01	10/04/18 12:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610118001	FB-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610118002	EB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Sample: FB-03 **Lab ID: 2610118001** Collected: 10/03/18 16:49 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0651 ± 0.149 (0.353) C:96% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.355 ± 0.346 (0.706) C:71% T:82%	pCi/L	10/19/18 14:21	15262-20-1	
Total Radium	Total Radium Calculation	0.420 ± 0.495 (1.06)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Sample: EB-02 **Lab ID: 2610118002** Collected: 10/03/18 17:01 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0323 ± 0.0875 (0.217) C:97% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.0225 ± 0.322 (0.748) C:74% T:84%	pCi/L	10/19/18 14:21	15262-20-1	
Total Radium	Total Radium Calculation	0.0548 ± 0.410 (0.965)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

QC Batch:	316253	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2610118001, 2610118002		

METHOD BLANK:	1543390	Matrix:	Water
Associated Lab Samples:	2610118001, 2610118002		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.293 ± 0.309 (0.637) C:77% T:81%	pCi/L	10/19/18 11:16	

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 Hammond - Huffaker Road

Pace Project No.: 2610118

QC Batch: 316252

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610118001, 2610118002

METHOD BLANK: 1543389

Matrix: Water

Associated Lab Samples: 2610118001, 2610118002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.132 ± 0.137 (0.260) C:96% T:NA	pCi/L	10/17/18 09:36	

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 Hammond - Huffaker Road
Pace Project No.: 2610118

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 - 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.

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-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610118001	FB-03	EPA 9315	316252		
2610118002	EB-02	EPA 9315	316252		
2610118001	FB-03	EPA 9320	316253		
2610118002	EB-02	EPA 9320	316253		
2610118001	FB-03	Total Radium Calculation	317515		
2610118002	EB-02	Total Radium Calculation	317515		

REPORT OF LABORATORY ANALYSIS

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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.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To	Joju Abraham / Lauren Petty	Attention	SCSInvoices@southernco.com
Address	2480 Marner Road Atlanta, GA 30339	Copy To	Geosyntec	Company Name	
Email	jabraham@southernco.com	Purchase Order #	SCS10348606	Pace Quote	
Phone	(404)506-7239	Project Name	Plant Hammond - Huffaker Road	Pace Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date	5/28/18	Project #	626701	Pace Profile #	328 3
			Regulatory Agency		
			State / Location		GA

ITEM #	MATRIX CODE Drinking Water: DW Water: WT Waste Water: WW Product: P Soil/Solid: SL Oil: OL Wipe: WP Air: AR Other: OT Tissue: TS	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	Metals (App. III + State)	TDS, Chloride, Fluoride, Sulfate	Metals (App. IV)	Residual Chlorine (Y/N)	Requested Analysis Filtered (Y/N)
			START DATE	START TIME			END DATE	END TIME						
1		FD-03	10/03/18	1639	WT G	4	Unpreserved			Y		Y	N	
2		ED-02	10/03/18	1651	WT G	4	Unpreserved			Y		Y	N	
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Abelia Mufson	10/03/18	17:45	Nardos Titahun	10/3/18	17:45	
	Nardos Titahun	10/3/18	19:30		10/4/18	19:30	
	Geosyntec	10/4/18	1000	Maria Mustafa / Pace	10/4/18	1000	
				Maria Mustafa	10/4/18	12:00	Y

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Nardos Titahun
SIGNATURE of SAMPLER:	<i>Nardos Titahun</i>
DATE Signed:	10/03/18

WO# : 2610118



2610118



Sample Condition Upon Receipt

Client Name: GCA Power

Project # _____

WO#: 2610118
 PM: BM Due Date: 11/01/18
 CLIENT: GCA Power-CCR

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 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2°C Biological Tissue is Frozen: Yes No Date and Initials of person examining contents: 10/04/18 MK

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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	see comment.
-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: The Radiums were not on the COC but samples were present.

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 15, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

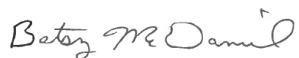
RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

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: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610161001	FB-04	Water	10/04/18 17:00	10/05/18 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610161001	FB-04	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Sample: FB-04		Lab ID: 2610161001		Collected: 10/04/18 17:00		Received: 10/05/18 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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 17:42	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 17:42	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 17:42	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 17:42	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 17:42	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 17:42	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 16:23	10/12/18 17:42	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 17:42	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 17:42	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 17:42	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 17:42	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 16:23	10/12/18 17:42	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:42	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:42	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 17:42	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:42	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 17:42	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:42	7440-62-2		
Zinc	0.0042J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 17:42	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:34	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		10/08/18 18:02			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.17J	mg/L	0.25	0.024	1		10/10/18 19:43	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/10/18 19:43	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/10/18 19:43	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 15032

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610161001

METHOD BLANK: 67254

Matrix: Water

Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256

67257

Parameter	Units	269791027 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	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

QC Batch: 15051 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610161001

METHOD BLANK: 67344 Matrix: Water
Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 16:10	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 16:10	
Barium	mg/L	ND	0.010	0.00078	10/12/18 16:10	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 16:10	
Boron	mg/L	ND	0.040	0.0039	10/12/18 16:10	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 16:10	
Calcium	mg/L	ND	0.50	0.014	10/12/18 16:10	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 16:10	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 16:10	
Copper	mg/L	ND	0.025	0.0013	10/12/18 16:10	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 16:10	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 16:10	
Molybdenum	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 16:10	
Silver	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 16:10	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Zinc	mg/L	0.0029J	0.010	0.0021	10/12/18 16:10	

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.11	106	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Copper	mg/L	.1	0.11	105	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Lithium	mg/L	.1	0.10	105	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	104	80-120	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.11	105	80-120	
Zinc	mg/L	.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67346 67347

Parameter	Units	2610159001		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Antimony	mg/L	ND	.1	.1	.1	0.11	0.11	109	107	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	.1	0.11	0.10	105	105	75-125	1	20	
Barium	mg/L	0.18	.1	.1	.1	0.29	0.29	116	107	75-125	3	20	
Beryllium	mg/L	ND	.1	.1	.1	0.096	0.094	96	94	75-125	2	20	
Boron	mg/L	0.082	1	1	1	1.0	1.0	95	92	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	.1	0.10	0.10	104	102	75-125	2	20	
Calcium	mg/L	41.7	1	1	1	50.9	43.6	917	191	75-125	15	20	M6
Chromium	mg/L	ND	.1	.1	.1	0.11	0.10	108	103	75-125	5	20	
Cobalt	mg/L	ND	.1	.1	.1	0.11	0.10	105	103	75-125	3	20	
Copper	mg/L	ND	.1	.1	.1	0.10	0.10	104	100	75-125	4	20	
Lead	mg/L	ND	.1	.1	.1	0.099	0.098	99	98	75-125	1	20	
Lithium	mg/L	0.011J	.1	.1	.1	0.11	0.11	97	95	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	.1	0.11	0.10	107	102	75-125	5	20	
Nickel	mg/L	ND	.1	.1	.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	.1	.1	.1	0.10	0.10	103	101	75-125	2	20	
Silver	mg/L	ND	.1	.1	.1	0.10	0.099	104	99	75-125	4	20	
Thallium	mg/L	ND	.1	.1	.1	0.10	0.10	100	100	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	.1	0.11	0.11	109	106	75-125	3	20	
Zinc	mg/L	0.0041J	.1	.1	.1	0.11	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 Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 14931	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610161001	

LABORATORY CONTROL SAMPLE: 66900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	406	102	84-108	

SAMPLE DUPLICATE: 66901

Parameter	Units	2610164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.0J	17.0J	43	10	D6

SAMPLE DUPLICATE: 66902

Parameter	Units	2610162002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	128	5	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

QC Batch: 15084 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610161001

METHOD BLANK: 67495 Matrix: Water
Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.16J	0.25	0.024	10/10/18 14:23	
Fluoride	mg/L	ND	0.30	0.029	10/10/18 14:23	
Sulfate	mg/L	ND	1.0	0.017	10/10/18 14:23	

LABORATORY CONTROL SAMPLE: 67496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67497 67498

Parameter	Units	2610158001		2610158002		2610158003		2610158004		% Rec Limits	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result	MS Result	MSD Result					
Chloride	mg/L	6.1	10	10	16.5	16.5	104	105	90-110	0	15	
Fluoride	mg/L	0.24J	10	10	10.3	10.3	100	100	90-110	0	15	
Sulfate	mg/L	209	10	10	154	154	-555	-554	90-110	0	15 E,M1	

MATRIX SPIKE SAMPLE: 67499

Parameter	Units	2610158002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.4	10	11.9	105	90-110	
Fluoride	mg/L	0.17J	10	10.2	100	90-110	
Sulfate	mg/L	5.2	10	15.6	104	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

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 - 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.

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.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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 Hammond - Huffaker Road

Pace Project No.: 2610161

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610161001	FB-04	EPA 3005A	15051	EPA 6020B	15111
2610161001	FB-04	EPA 7470A	15032	EPA 7470A	15116
2610161001	FB-04	SM 2540C	14931		
2610161001	FB-04	EPA 300.0	15084		

REPORT OF LABORATORY ANALYSIS

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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.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: Standard TAT

Section B
 Report To: Jolu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Hurflaker Road
 Project #:

Section C
 Invoice Information:
 Attention: SCSinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 328.3
 State / Location: GA

Regulatory Agency
 State / Location: GA

ITEM #	MATRIX	CODE	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
			START	END												
1	Drinking Water	DW	10/14/18	1700	10/14/18	1700	10/14/18	1800	Nardos Tikhon	10/4/18	1800					
2	Waste Water	WW														
3	Product	P														
4	Soil/Solid	SL														
5	Oil	OL														
6	Wipe	WP														
7	Air	AR														
8	Other	OT														
9	Tissue	TS														
10																
11																
12																

ADDITIONAL COMMENTS
 * Metals list: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Pb, Ni, Se, Ag, Ti, V, Zn
 ** Metals Azo IV: Li, Hg, Mo

RELINQUISHED BY / AFFILIATION
 Noelia Moskor
 Nardos Tikhon
 403 Blaw

DATE
 10/14/18
 10/4/18
 10/5/18

TIME
 1800
 1950
 1800

ACCEPTED BY / AFFILIATION
 Nardos Tikhon
 Milep Noyon
 MDA Maman

DATE
 10/4/18
 10/4/18
 10/05/18

TIME
 1800
 1800
 1800

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Noelia Moskor
 SIGNATURE of SAMPLER: Noelia Moskor
 DATE Signed: 10/04/18

WO#: 2610161

2610161



Sample Condition Upon Receipt

Client Name: GFA Power

Project # _____

WO#: 2610161

PM: **BM** Due Date: **10/12/18**

CLIENT: **GAPower-CCR**

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 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/05/18 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 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>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)

October 17, 2018

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

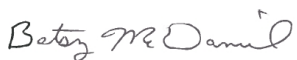
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 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.

This revised report replaces the report issued on October 15, 2018. The report has been revised to remove mercury, lithium, and molybdenum data from GWC-23 per consultant request. No other changes have been made to this 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: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

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: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610209001	GWC-23	Water	10/05/18 12:18	10/08/18 11:00
2610209002	FB-05	Water	10/05/18 13:05	10/08/18 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610209001	GWC-23	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610209002	FB-05	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: GWC-23		Lab ID: 2610209001		Collected: 10/05/18 12:18		Received: 10/08/18 11:00		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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 20:32	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:32	7440-38-2		
Barium	0.065	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:32	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:32	7440-41-7		
Boron	0.039J	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:32	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:32	7440-43-9		
Calcium	39.3	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 20:38	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:32	7440-47-3		
Cobalt	0.00058J	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:32	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:32	7440-50-8		
Lead	0.00042J	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:32	7439-92-1		
Nickel	0.0014J	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:32	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:32	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:32	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:32	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:32	7440-62-2		
Zinc	0.0048J	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:32	7440-66-6	B	
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	210	mg/L	25.0	10.0	1		10/09/18 16:57			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	1.6	mg/L	0.25	0.024	1		10/11/18 09:35	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		10/11/18 09:35	16984-48-8		
Sulfate	9.3	mg/L	1.0	0.017	1		10/11/18 09:35	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

Sample: FB-05		Lab ID: 2610209002		Collected: 10/05/18 13:05		Received: 10/08/18 11:00		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								
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 20:44	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:44	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:44	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:44	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:44	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:44	7440-43-9		
Calcium	0.021J	mg/L	0.50	0.014	1	10/10/18 13:15	10/12/18 20:44	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:44	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:44	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:44	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:44	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/10/18 13:15	10/12/18 20:44	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:44	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:44	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:44	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:44	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:44	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:44	7440-62-2		
Zinc	0.010	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:44	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/11/18 10:20	10/11/18 17:32	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	31.0	mg/L	25.0	10.0	1		10/09/18 16:57			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.17J	mg/L	0.25	0.024	1		10/11/18 09:58	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/11/18 09:58	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/11/18 09:58	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

QC Batch: 15185

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610209002

METHOD BLANK: 67911

Matrix: Water

Associated Lab Samples: 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/11/18 16:47	

LABORATORY CONTROL SAMPLE: 67912

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67913

67914

Parameter	Units	2610090002		67913		67914		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Mercury	mg/L	0.95 ug/L	.0025	.0025	0.0032	0.0031	89	88	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

QC Batch: 15129 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610209001, 2610209002

METHOD BLANK: 67679 Matrix: Water
Associated Lab Samples: 2610209001, 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 19:18	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 19:18	
Barium	mg/L	ND	0.010	0.00078	10/12/18 19:18	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 19:18	
Boron	mg/L	ND	0.040	0.0039	10/12/18 19:18	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 19:18	
Calcium	mg/L	ND	0.50	0.014	10/12/18 19:18	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 19:18	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 19:18	
Copper	mg/L	ND	0.025	0.0013	10/12/18 19:18	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 19:18	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 19:18	
Molybdenum	mg/L	ND	0.010	0.0019	10/12/18 19:18	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 19:18	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 19:18	
Silver	mg/L	ND	0.010	0.00095	10/12/18 19:18	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 19:18	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 19:18	
Zinc	mg/L	0.0024J	0.010	0.0021	10/12/18 19:18	

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.096	96	80-120	
Beryllium	mg/L	.1	0.098	98	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.096	96	80-120	
Lithium	mg/L	.1	0.099	99	80-120	
Molybdenum	mg/L	.1	0.096	96	80-120	
Nickel	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.099	99	80-120	
Thallium	mg/L	.1	0.095	95	80-120	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	102	80-120	
Zinc	mg/L	.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67681 67682

Parameter	Units	2610208001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Antimony	mg/L	ND	.1	.1	.1	0.12	0.12	119	117	75-125	2	20
Arsenic	mg/L	ND	.1	.1	.1	0.11	0.11	106	105	75-125	1	20
Barium	mg/L	0.081	.1	.1	.1	0.18	0.17	95	91	75-125	2	20
Beryllium	mg/L	ND	.1	.1	.1	0.11	0.11	107	105	75-125	2	20
Boron	mg/L	0.15	1	1	1	1.2	1.2	106	106	75-125	0	20
Cadmium	mg/L	ND	.1	.1	.1	0.11	0.11	107	108	75-125	1	20
Calcium	mg/L	39.6	1	1	1	41.8	41.2	229	168	75-125	1	20 M6
Chromium	mg/L	ND	.1	.1	.1	0.11	0.10	107	105	75-125	2	20
Cobalt	mg/L	ND	.1	.1	.1	0.11	0.10	105	103	75-125	2	20
Copper	mg/L	ND	.1	.1	.1	0.11	0.10	106	104	75-125	3	20
Lead	mg/L	ND	.1	.1	.1	0.10	0.099	100	99	75-125	1	20
Lithium	mg/L	0.016J	.1	.1	.1	0.12	0.12	106	102	75-125	3	20
Molybdenum	mg/L	ND	.1	.1	.1	0.11	0.11	106	107	75-125	1	20
Nickel	mg/L	ND	.1	.1	.1	0.11	0.10	107	104	75-125	3	20
Selenium	mg/L	ND	.1	.1	.1	0.11	0.11	106	105	75-125	1	20
Silver	mg/L	ND	.1	.1	.1	0.11	0.10	106	105	75-125	1	20
Thallium	mg/L	ND	.1	.1	.1	0.10	0.098	100	98	75-125	2	20
Vanadium	mg/L	ND	.1	.1	.1	0.11	0.11	111	111	75-125	1	20
Zinc	mg/L	0.0029J	.1	.1	.1	0.11	0.11	110	105	75-125	4	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

QC Batch: 15066 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610209001, 2610209002

LABORATORY CONTROL SAMPLE: 67393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 67394

Parameter	Units	2610166001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10200	10100	1	10	

SAMPLE DUPLICATE: 67395

Parameter	Units	2610210001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	813	828	2	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

QC Batch: 15085 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610209001, 2610209002

METHOD BLANK: 67500 Matrix: Water
Associated Lab Samples: 2610209001, 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	10/11/18 06:47	
Fluoride	mg/L	ND	0.30	0.029	10/11/18 06:47	
Sulfate	mg/L	ND	1.0	0.017	10/11/18 06:47	

LABORATORY CONTROL SAMPLE: 67501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67502 67503

Parameter	Units	67502		67503		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2610208001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	1.5	10	10	12.0	12.0	105	105	90-110	0	15
Fluoride	mg/L	0.21J	10	10	10.3	10.3	101	101	90-110	0	15
Sulfate	mg/L	10.6	10	10	20.5	20.5	99	99	90-110	0	15

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

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 - 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.

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.

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 Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610209001	GWC-23	EPA 3005A	15129	EPA 6020B	15152
2610209002	FB-05	EPA 3005A	15129	EPA 6020B	15152
2610209002	FB-05	EPA 7470A	15185	EPA 7470A	15229
2610209001	GWC-23	SM 2540C	15066		
2610209002	FB-05	SM 2540C	15066		
2610209001	GWC-23	EPA 300.0	15085		
2610209002	FB-05	EPA 300.0	15085		

REPORT OF LABORATORY ANALYSIS

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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.

Page: 1 Of 1

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Date: Standard TAT

Section B

Required Project Information:

Report To: Jolu Abraham / Lauren Peity
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Hufaker Road
 Project #: GWC-23

Section C

Invoice Information:

Attention: SCSinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: beasy.mcdaniel@pacelabs.com
 Pace Profile #: 3283

Regulatory Agency

State / Location: GA

ITEM #	MATRIX	COLLECTED	START		END		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Custody	Sealed	Cooler	Samples Intact
			DATE	TIME	DATE	TIME												
1	DW		10/5/18	1204	10/5/18	1718	G	WT	4	Unpreserved	Metals (App III + State)	N						
2	WT		10/5/18	1204	10/5/18	1718	G	WT	4	Unpreserved	TDS Chloride Fluoride Sulfate	N						
3	WT		10/5/18	1255	10/5/18	1305	G	WT	4	Unpreserved	Metals (App III + State)	N						
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

WO#: 2610209

2610209

Sample Condition Upon Receipt

WO#: 2610209

PM: BM

Due Date: 10/15/18

CLIENT: GAPower-CCR

Proj. Due Date:
Proj. Name:



Client Name: GAPower

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: 082

Cooler Temperature: 2.5°C
Temp should be above freezing to 6°C

Type of Ice: Wet Blue None

Biological Tissue is Frozen: Yes No

Comments: _____
Date and Initials of person examining contents: 10/8/18 CA

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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. Rads present but not listed on coc (2H 10/8/18)
-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, O&G, WI-DRO (water) <u>Rads</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Pace Trip Blank Lot # (if purchased):		

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

Data Validation Reports

Memorandum

Date: June 15, 2018
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 263497, 263498, 263576, 263577, 263653 and 263654**

SITE: Plant Hammond-AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eighteen aqueous samples, two field duplicate samples and two field blanks, collected 2 April 2018, 3 April 2018 and 4 April 2018, as part of the Plant Hammond-AP on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by EPA Methods 3005A/6020B
- Mercury by EPA Method 7470A
- Fluoride by EPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

The samples were handled, prepared and measured in the same manner under similar prescribed conditions.

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- National Functional Guidelines for Inorganic Superfund Data Review, August 2014 (OSWER 9355.0-131, EPA 540-R-013-001);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
263497001	HGWA-1
263497002	HGWA-1
263498001	HGWA-4
263498002	HGWA-4
263498003	HGWA-2
263498004	HGWA-2
263576001	HGWA-3
263576002	HGWA-3
263576003	HGWC-7
263576004	HGWC-7
263576005	HGWC-8
263576006	HGWC-8
263576007	HGWC-9
263576008	HGWC-9
263576009	HGWC-15
263576010	HGWC-15
263576011	FD-01
263576012	FD-01

Laboratory ID	Client ID
263577001	HGWA-5
263577002	HGWA-5
263577003	HGWA-6
263577004	HGWA-6
263577005	HGWC-18
263577006	HGWC-18
263577007	HGWC-17
263577008	HGWC-17
263577009	HGWC-16
263577010	HGWC-16
263577011	FB-01
263577012	FB-01
263653001	HGWC-14
263653002	HGWC-14
263653003	HGWC-13
263653004	HGWC-13
263653005	FD-02
263653006	FD-02

Laboratory ID	Client ID
263654001	HGWC-10
263654002	HGWC-10
263654003	HGWC-12
263654004	HGWC-12

Laboratory ID	Client ID
263654005	HGWC-11
263654006	HGWC-11
263654007	FB-02
263654008	FB-02

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- There were no relinquishing signatures, dates or times for the last sample transfers on the COCs in these laboratory reports. The other sample transfers were appropriately documented, but there was no final sample relinquishing documentation; there was final sample receiving documentation on these COCs.
- Project numbers 263576 and 263653: There were no times of collection listed on the COCs for the field duplicates, FD-01 and FD-02. The laboratory assigned collection times of 00:00

Each sample was logged in with two laboratory identifications (IDs); an ID for the metals, mercury and fluoride analyses and an ID for the radiochemistry (radium-226, radium-228 and total radium) analyses.

1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate

- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the sample set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 3707, 3854 and 3855). Metals were not detected in the method blanks above the method detection limits (MDLs).

It was noted that the antimony results in samples HGWC-7 and HGWC-8 were flagged B by the laboratory indicating antimony was detected in both the samples and the associated method blank. However, antimony was reported as nondetect in the associated method blank. A revised report was requested from the laboratory to remove the B flags; however, the laboratory project manager indicated there was difficulty removing the flags as it is a software programming issue in the laboratory information system; therefore, since the flags were not relevant to the data quality, the data were validated as reported.

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample HGWA-3. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of barium in the MS/MSD pair were low and outside the laboratory and SOP specified acceptance criteria. Therefore, the concentrations of barium were J qualified as

estimated and the nondetect result was UJ qualified as estimated less than the MDL in the associated samples.

In addition, two batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWA-3	Barium	0.11	NA	0.11	J	M-
HGWC-7	Barium	0.075	NA	0.075	J	M-
HGWC-8	Barium	0.065	NA	0.065	J	M-
HGWC-9	Barium	0.10	NA	0.10	J	M-
HGWC-15	Barium	0.019	NA	0.019	J	M-
FD-01	Barium	0.021	NA	0.021	J	M-
HGWA-5	Barium	0.038	NA	0.038	J	M-
HGWA-6	Barium	0.14	NA	0.14	J	M-
HGWC-18	Barium	0.028	NA	0.028	J	M-
HGWC-17	Barium	0.025	NA	0.025	J	M-
HGWC-16	Barium	0.099	NA	0.099	J	M-
FB-01	Barium	0.00078	U	0.00078	UJ	M-

mg/L- milligram per liter

NA- not applicable

U- not detected at or above the MDL

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.5 **Laboratory Control Sample (LCS)**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

1.6 **Equipment Blank**

An equipment blank was not collected with the sample sets.

1.7 **Field Blank**

Two field blanks were collected with the sample sets, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs.

1.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision [(RPD \leq 20% or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicates and the original samples HGWC-15 and HGWC-13.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags M1 and B used in the level II reports were not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

2.0 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of

the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 3613, 4044 and 3949). Mercury was not detected in the method blanks above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three sample set specific MS/MSD pairs were reported, using samples HGWA-2, HGWA-4 and HGWA-3. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

2.6 Equipment Blank

An equipment blank was not collected with the sample sets.

2.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Mercury was not detected in the field blanks above the MDL.

2.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision ($RPD \leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicates and the original samples HGWC-15 and HGWC-13.

2.9 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

2.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

3.0 FLUORIDE

The samples were analyzed for fluoride by EPA method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The fluoride data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as

estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

3.2 Holding Times

The holding time for fluoride analyses of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 4030, 3816, 4034 and 4189). Fluoride was not detected in the method blanks above the MDL.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three sample set specific MS/MSD pairs were reported, using samples HGWA-1, HGWC-7 and HGWC-14. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

In addition, two batch MS and one batch MS/MSD pair were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

3.6 Equipment Blank

An equipment blank was not collected with the sample sets.

3.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Fluoride was not detected in the field blanks above the MDL.

3.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision ($RPD \leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicates and the original samples HGWC-15 and HGWC-13.

3.9 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

3.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ⊗ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the radium-228 data (batches 1440643, 1438693 and 1440645). Three method blanks were reported for the radium-226 data (batches 1440635, 1438692 and 1440640). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exception.

Radium-226 was detected above the MDC in the method blank in batch 294194. Therefore, the radium-226 concentrations greater than the MDC and with a normalized absolute difference (NAD) less than 2.58 were U* qualified as not detected at the reported concentration in the associated samples. Also, the total radium concentration for sample HGWC-12 was U* qualified as not detected at the reported concentration since the concentration of radium-226 in sample HGWC-12 was U* qualified as not detected at the reported concentration and the concentration of radium-228 in sample HGWC-12 was less than the MDC. In addition, the total radium concentration for sample HGWC-11 was J qualified as estimated since the concentration of radium-226 in sample HGWC-12 was U* qualified as not detected at the reported concentration and the concentration of radium-228 in sample HGWC-12 was greater than the MDC.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-1	Radium-226	0.281	NA	0.281	U*	BL
HGWA-4	Radium-226	0.371	NA	0.371	U*	BL
HGWA-2	Radium-226	0.376	NA	0.376	U*	BL
HGWA-3	Radium-226	0.305	NA	0.305	U*	BL

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-7	Radium-226	0.293	NA	0.293	U*	BL
HGWC-8	Radium-226	0.311	NA	0.311	U*	BL
HGWC-9	Radium-226	0.276	NA	0.276	U*	BL
HGWC-15	Radium-226	0.208	NA	0.208	U*	BL
FD-01	Radium-226	0.275	NA	0.275	U*	BL
HGWC-17	Radium-226	0.163	NA	0.163	U*	BL
HGWC-16	Radium-226	0.417	NA	0.417	U*	BL
FB-01	Radium-226	0.304	NA	0.304	U*	BL
HGWC-12	Radium-226	0.312	NA	0.312	U*	BL
HGWC-12	Total Radium	0.956	NA	0.956	U*	BL
HGWC-11	Radium-226	0.585	NA	0.585	U*	BL
HGWC-11	Total Radium	1.50	NA	1.50	J	BL
FB-02	Radium-226	0.311	NA	0.311	U*	BL

pCi/L- picocuries per liter

NA- not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported for radium-226. Three LCS/LCS duplicate (LCSD) pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of radium-226 in the LCSs in batches 1440635 and 1438692 were low and outside the SOP specified acceptance criteria. Therefore, the concentrations of radium-226 in the associated samples that were U* qualified based on method blank contamination were UJ qualified as estimated less than the MDC. The concentrations of radium-226 that were not previously qualified due to method blank contamination were J qualified as estimated.

The recoveries of radium-228 in the LCSs in batches 1438693 and 1440645 were high and outside the laboratory specified acceptance criteria. Therefore the concentrations of radium-228 in the associated samples were J qualified as estimated.

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The total radium results were qualified as follows. The total radium results that were less than the MDC with a qualified radium-226 component and no qualification for the radium-228 component were UJ qualified as estimated less than the MDC. The total radium results with either a qualified radium-226 component, a qualified radium-228 component or both a qualified radium-226 component and radium-228 component were J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-1	Radium-226	0.281	NA	0.281	UJ	L-
HGWA-1	Total Radium	0.405	U	0.405	UJ	L-
HGWA-4	Radium-226	0.371	NA	0.371	UJ	L-
HGWA-4	Total Radium	0.371	U	0.371	UJ	L-
HGWA-2	Radium-226	0.376	NA	0.376	UJ	L-
HGWA-2	Total Radium	0.761	U	0.761	UJ	L-
HGWA-3	Radium-226	0.305	NA	0.305	UJ	L-
HGWA-3	Total Radium	0.684	U	0.684	UJ	L-
HGWC-7	Radium-226	0.293	NA	0.293	UJ	L-
HGWC-7	Total Radium	0.538	U	0.538	UJ	L-
HGWC-8	Radium-226	0.311	NA	0.311	UJ	L-
HGWC-8	Total Radium	0.311	U	0.311	UJ	L-
HGWC-9	Radium-226	0.276	NA	0.276	UJ	L-
HGWC-9	Total Radium	0.732	U	0.732	UJ	L-
HGWC-15	Radium-226	0.208	NA	0.208	UJ	L-
HGWC-15	Total Radium	0.384	U	0.384	UJ	L-
FD-01	Radium-226	0.275	NA	0.275	UJ	L-
FD-01	Total Radium	0.377	U	0.377	UJ	L-
HGWA-5	Radium-226	0.447	NA	0.447	J	L-
HGWA-5	Total Radium	0.858	U	0.858	UJ	L-
HGWA-6	Radium-226	0.359	NA	0.359	J	L-
HGWA-6	Total Radium	0.828	U	0.828	UJ	L-
HGWC-18	Radium-226	1.23	NA	1.23	J	L-
HGWC-18	Radium-228	1.30	NA	1.30	J	L+
HGWC-18	Total Radium	2.53	NA	2.53	J	L
HGWC-17	Radium-226	0.163	NA	0.163	UJ	L-
HGWC-17	Total Radium	0.409	U	0.409	UJ	L-
HGWC-16	Radium-226	0.417	NA	0.417	UJ	L-
HGWC-16	Total Radium	0.783	U	0.783	UJ	L-
FB-01	Radium-226	0.304	NA	0.304	UJ	L-
FB-01	Total Radium	0.304	U	0.304	UJ	L-
HGWC-14	Radium-228	1.35	NA	1.35	J	L+
HGWC-14	Total Radium	1.72	NA	1.72	J	L+
HGWC-10	Radium-226	0.179	U	0.179	UJ	L-

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-10	Total Radium	0.715	U	0.715	UJ	L-
HGWC-12	Radium-226	0.312	NA	0.312	UJ	L-
HGWC-12	Total Radium	0.956	NA	0.956	UJ	L-
HGWC-11	Radium-226	0.585	NA	0.585	UJ	L-
HGWC-11	Total Radium	1.50	NA	1.50	J	L-
FB-02	Radium-226	0.311	NA	0.311	UJ	L-
FB-02	Total Radium	0.570	U	0.570	UJ	L-

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for radium-226 using sample HGWC-16. The RER (2σ) result was within the laboratory and SOP specified acceptance criteria.

Two batch laboratory duplicates were also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

4.8 Equipment Blank

An equipment blank was not collected with the sample sets.

4.9 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02.

Radium-228 was not detected in the field blanks above the MDC. However, radium-226 was detected above the MDC in FB-01 and FB-02. Since the concentrations of radium-226 in the field blanks were U* qualified based on method blank contamination, no additional qualifications were applied to the data based on professional and technical judgment.

4.10 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision ($RER (2\sigma) < 3$) was demonstrated between the field duplicates and the original samples HGWC-15 and HGWC-13.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team per the SOP

DATA QUALIFIER DEFINITIONS

- U* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BL	Laboratory blank contamination. The result should be considered "not-detected."
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

Memorandum

Date: September 13, 2018
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 265792, 265793, 265795, 265796, 265797, 265860 and 265863**

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eighteen aqueous samples, two field duplicate samples and one equipment blank, collected 4-6 June 2018, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by EPA Methods 3005A/6020B
- Mercury by EPA Method 7470A
- Anions by EPA Method 300.0
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
265792001	HGWA-2
265792002	HGWA-1
265793001	HGWC-7
265795001	FD-01
265795002	HGWC-13
265795003	HGWC-18
265796001	HGWA-5
265796002	HGWA-6
265796003	HGWC-10
265796004	HGWC-11
265796005	EB-01

Laboratory ID	Client ID
265797001	HGWA-3
265797002	HGWA-4
265860001	HGWC-8
265860002	HGWC-9
265860003	HGWC-12
265860004	HGWC-14
265860005	HGWC-17
265863001	HGWC-15
265863002	FD-03
265863003	HGWC-16

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- Project numbers 265795 and 265863: There were no times of collection listed on the COCs for the field duplicates, FD-01 and FD-03. The laboratory assigned collection times of 00:00.
- Project number 265797: Sample HGWA-4 had a collection time of 1900 on the COC and was listed as GHWA-4 with a collection time of 1810 on the sample label. The sample was logged in per the COC.
- Project number 265860: The relinquishing signature, date and time were missing for the fourth sample transfer.
- Project number 265863: The relinquishing signature, date and time were missing for the third sample transfer.

Laboratory report 265860 was revised on September 13, 2018 to add missing holding time qualifications to the anion data.

1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the

total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 7923 and 8297). Metals were not detected in the method blanks above the method detection limits (MDLs).

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample HGWA-2. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of calcium were low and outside the laboratory and SOP specified acceptance criteria. However, since the sample concentration was greater than four times the spike concentration, no qualifications were applied to the data, based on professional and technical judgment.

One batch MS/MSD pair was also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Metals were not detected in the equipment blank above the MDLs, with the following exception.

Calcium was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since calcium was detected at concentrations greater than five times the equipment blank concentration, no qualifications were applied to the data.

1.7 Field Blank

A field blank was not collected with the sample sets.

1.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-03. Acceptable precision ($RPD \leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M6 used in the level II reports was not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

2.0 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank

- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 7784). Mercury was not detected in the method blank above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS/MSD pair was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery result was within the laboratory and SOP specified acceptance criteria.

2.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01, but was not analyzed for mercury.

2.7 Field Blank

A field blank was not collected with the sample sets.

2.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02, but were not analyzed for mercury.

2.9 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

2.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

3.0 WET CHEMISTRY

The samples were analyzed for anions by EPA method 300.0 and TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ⊗ Holding Times
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

3.2 Holding Times

The holding time for the anion analysis of a water sample is 28 days from sample collection to analysis. The holding time for TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses, with the following exceptions.

The sulfate analysis of samples HGWC-14, HGWC-17, HGWC-15 and FD-03 were performed outside the holding time. Therefore, the sulfate concentrations in these samples were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWC-14	Sulfate	1520	H5	1520	J	H
HGWC-17	Sulfate	520	H5	520	J	H
HGWC-15	Sulfate	469	H5	469	J	H
FD-03	Sulfate	482	H5	482	J	H

mg/L- milligram per liter

NA- not applicable

H5-laboratory flag indicating the reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the anions (batches 7772 and 7994). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported, using sample HGWA-3, and one sample set specific MS was reported, using sample HGWC-4. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of sulfate in the MS/MSD pair using sample HGWA-3 were low and outside the laboratory and SOP specified acceptance criteria. However, based on the difference between the sample and spike concentration, the MS/MSD exceeding the calibration range, and professional and technical judgment, no qualifications were applied to the data.

The recovery of sulfate in the MS using sample HGWA-4 was high and outside the laboratory and SOP specified acceptance criteria. Therefore, the sulfate concentrations in the associated samples were J qualified as estimated.

One batch MS and one batch MS/MSD pair were also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-3	Sulfate	46.6	NA	46.6	J	M+
HGWA-4	Sulfate	4.9	M1	4.9	J	M+
HGWC-8	Sulfate	190	NA	190	J	M+
HGWC-9	Sulfate	214	NA	214	J	M+
HGWC-12	Sulfate	162	NA	162	J	M+
HGWC-14	Sulfate	1520	NA	1520	J	M+
HGWC-17	Sulfate	520	NA	520	J	M+
HGWC-15	Sulfate	469	NA	469	J	M+
FD-03	Sulfate	482	NA	482	J	M+
HGWC-16	Sulfate	233	NA	233	J	M+

mg/L- milligram per liter

M1-laboratory flag indicating matrix spike recovery exceeded QC limits. Batch accepted based on LCS recovery

NA- not applicable

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch as appropriate. The recovery results were within the laboratory and SOP specified acceptance criteria.

3.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for TDS, using sample HGWA-5. The RPD result was within the laboratory and SOP specified acceptance criteria.

Three batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.7 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. The wet chemistry parameters were not detected in the equipment blank above the MDLs, with the following exception.

TDS and chloride were detected at estimated concentrations greater than the MDLs and less than the RLs. Since TDS and chloride were detected at concentrations greater than five times the equipment blank concentration, no qualifications were applied to the data.

3.8 Field Blank

A field blank was not collected with the sample sets.

3.9 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-03. Acceptable precision ($RPD \leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

3.11 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags M1 and H5 used in the level II reports were not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ⊗ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values

qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the radium-228 data (batches 301898, 301897 and 302388). Three method blanks were reported for the radium-226 data (batches 301690, 301864 and 302916). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exception.

Radium-228 was detected above the MDC in the method blank in batch 302388. Therefore, the radium-228 concentration greater than the MDC and with a normalized absolute difference (NAD) less than 2.58 was U* qualified as not detected at the reported concentration in the associated sample.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-15	Radium-228	1.20	NA	1.20	U*	BL

pCi/L- picocuries per liter
 NA- not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported for radium-226. Three LCS/LCS duplicate (LCSD) pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory and SOP specified acceptance criteria, with the following exception.

The recovery of radium-226 in the LCS in batch 302916 was low and outside the laboratory and SOP specified acceptance criteria. Therefore, the nondetect radium-226 results in the associated samples were UJ qualified as estimated less than the MDC.

The total radium results were qualified as follows. The total radium results that were less than the MDC with a qualified radium-226 component and no qualification for the radium-228 component were UJ qualified as estimated less than the MDC.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-8	Radium-226	0.107	U	0.107	UJ	L-
HGWC-8	Combined Radium 226 + 228	0.896	U	0.896	UJ	L-
HGWC-9	Radium-226	0.133	U	0.133	UJ	L-
HGWC-9	Combined Radium 226 + 228	0.813	U	0.813	UJ	L-
HGWC-12	Radium-226	0.424	U	0.424	UJ	L-
HGWC-12	Combined Radium 226 + 228	0.424	U	0.424	UJ	L-
HGWC-14	Radium-226	0.499	U	0.499	UJ	L-
HGWC-14	Combined Radium 226 + 228	1.31	U	1.31	UJ	L-
HGWC-17	Radium-226	0.218	U	0.218	UJ	L-
HGWC-17	Combined Radium 226 + 228	0.772	U	0.772	UJ	L-
HGWC-15	Radium-226	0.117	U	0.117	UJ	L-
HGWC-15	Combined Radium 226 + 228	1.32	U	1.32	UJ	L-
FD-03	Radium-226	0.181	U	0.181	UJ	L-
FD-03	Combined Radium 226 + 228	0.181	U	0.181	UJ	L-
HGWC-16	Radium-226	0.227	U	0.227	UJ	L-
HGWC-16	Combined Radium 226 + 228	0.595	U	0.595	UJ	L-

pCi/L- picocuries per liter

U- not detected at or above the MDC

4.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for radium-226 using samples FD-01 and HGWC-15. The RER (2σ) results were within the laboratory and SOP specified acceptance criteria.

One batch laboratory duplicate was also reported for radium-228. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

4.8 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Radium-226 and Radium-228 were not detected in the equipment blank above the MDCs.

4.9 Field Blank

A field blank was not collected with the sample sets.

4.10 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-03. Acceptable precision ($RER (2\sigma) < 3$) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team per the SOP

DATA QUALIFIER DEFINITIONS

- U* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BL	Laboratory blank contamination. The result should be considered "not-detected."
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

Memorandum

Date: December 5, 2018
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 269953, 269954, 269955, 269956, 269957, 269958, 2610027, 2610028, 2610031, 2610032, 2610035, 2610036, 2610039, 2610040, 2610114, 2610115, 2610116, 2610117, 2610118, 2610119, 2610213 and 2610214**

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eighteen aqueous samples, two field duplicate samples, two equipment blanks and three field blanks, collected 1-5 October 2018, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by EPA Methods 3005A/6020B
- Mercury by EPA Method 7470A
- Anions by EPA Method 300.0
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
269953001	FB-01
269954001	FB-01
269955001	HGWA-2
269955002	HGWA-3
269956001	HGWA-2
269956002	HGWA-3
269957001	HGWA-1
269957002	HGWA-4
269958001	HGWA-1
269958002	HGWA-4
2610027001	HGWA-5
2610027002	HGWC-8
2610027003	FD-01
2610027004	HGWC-7
2610027005	HGWC-9
2610028001	HGWA-5
2610028002	HGWC-8
2610028003	FD-01

Laboratory ID	Client ID
2610028004	HGWC-7
2610028005	HGWC-9
2610031001	EB-01
2610031002	FB-02
2610032001	EB-01
2610032002	FB-02
2610035001	HGWA-6
2610036001	HGWA-6
2610039001	HGWC-10
2610040001	HGWC-10
2610114001	HGWC-11
2610114002	HGWC-12
2610114003	HGWC-18
2610114004	FD-02
2610115001	HGWC-11
2610115002	HGWC-12
2610115003	HGWC-18
2610115004	FD-02

Laboratory ID	Client ID
2610116001	FB-03
2610116002	EB-02
2610117001	HGWC-16
2610117002	HGWC-17
2610117003	HGWC-15
2610117004	HGWC-14
2610118001	FB-03

Laboratory ID	Client ID
2610118002	EB-02
2610119001	HGWC-16
2610119002	HGWC-17
2610119003	HGWC-15
2610119004	HGWC-14
2610213001	HGWC-13
2610214001	HGWC-13

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2610209: The relinquishing signature, date and time were missing for the second sample transfer.
- 269953, 269954, 269957, 269958, 2610039, 2610040, 2610213 and 2610214: The relinquishing signature, date and time were missing for the third sample transfer.
- 269955, 269956, 2610027, 2610028, 2610031, 2610032, 2610035, 2610036, 2610116, 2610117, 2610118, 2610119 and 2610161 The relinquishing signature, date and time were missing for the fourth sample transfer.
- 2610027, 2610028, 2610114 and 2610115: There were no times of collection listed on the COCs for the field duplicates, FD-01 and FD-02. The laboratory assigned collection times of 00:00.

Laboratory report 2610209 was revised on October 15, 2018 to remove the mercury, lithium and molybdenum data from sample GWC-23 per the client's request.

1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank

- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported (batches 14744, 14855, 15013, 15051 and 15129). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

Zinc was detected in the method blanks in batches 14744, 14855, 15051 and 15129 at estimated concentrations greater than the MDL and less than the reporting limit (RL). Therefore, the zinc concentrations in the associated samples less than five times the method blank concentrations were U qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
FB-01	Zinc	0.0035	J B	0.0035	U	BL
EB-01	Zinc	0.0046	J B	0.0046	U	BL
FB-02	Zinc	0.0032	J B	0.0032	U	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag defined as analyte was detected in the associated method blank
* Validation qualifiers are defined in Attachment 1 at the end of this report
**Reason codes are defined in Attachment 2 at the end of this report

1.4 **Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample HGWC-17. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exception.

The RPD of boron was high and outside the laboratory specified acceptance criteria. Therefore, the boron concentrations in the associated samples were J qualified as estimated. The MS recovery was high and the MSD recovery was low for calcium, both outside the laboratory specified acceptance criteria. However, since the calcium concentration in sample HGWC-17 was greater than four times the spike concentration, no qualifications were applied to the calcium data based on the MS/MSD pair results.

Four batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWC-16	Boron	1.7	NA	1.7	J	MP
HGWC-17	Boron	6.9	NA	6.9	J	MP
HGWC-15	Boron	2.4	NA	2.4	J	MP
HGWC-14	Boron	16.4	NA	16.4	J	MP

mg/L- milligram per liter
NA-not applicable

1.5 **Laboratory Control Sample (LCS)**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

1.6 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs, with the following exceptions.

Zinc was detected in EB-01 and EB-02 at estimated concentrations greater than the MDL and less than the RL. Since the zinc concentrations in EB-01 and EB-02 were U qualified as not detected due to field blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

1.7 Field Blank

Five field blanks were collected with the sample sets, FB-01, FB-02, FB-03, FB-04 and FB-05. FB-04 and FB-05 were reported in laboratory reports 2610161 and 2610209, respectively. Metals were not detected in the field blanks above the MDLs, with the following exceptions.

Zinc was detected in FB-01, FB-02 and FB-04 at estimated concentrations greater than the MDL and less than the RL. Since the zinc concentrations in FB-01, FB-02 and FB-04 were U qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

Boron and zinc were detected in FB-03 at estimated concentrations greater than the MDLs and less than the RLs. Since boron was either not detected or detected at concentrations greater than five times the field blank concentration, no qualifications were applied to the boron data. However, the zinc concentration less than five times the field blank concentration was U qualified as not detected at the reported concentration.

Calcium was detected at an estimated concentration greater than the MDL and less than the RL and zinc was detected at the RL (0.010 mg/L) in FB-05. Since calcium was detected at concentrations greater than five times the field blank concentration and the zinc concentration in FB-05 was U qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
EB-02	Zinc	0.0029	J	0.0029	U	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

1.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision ($RPD \leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicates and the original samples HGWC-8 and HGWC-18, respectively.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags D3, M6 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

2.0 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as

estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 14995, 15032 and 15185). Mercury was not detected in the method blanks above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

2.6 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Mercury was not detected in the equipment blanks above the MDL.

2.7 Field Blank

Five field blanks were collected with the sample sets, FB-01, FB-02, FB-03, FB-04 and FB-05. FB-04 and FB-05 were reported in laboratory reports 2610161 and 2610209, respectively. Mercury was not detected in the field blanks above the MDL.

2.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02, but were not analyzed for mercury.

2.9 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

2.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. There were several laboratory report specific EDDs that included project data for samples from a different laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

3.0 WET CHEMISTRY

The samples were analyzed for anions by EPA method 300.0 and TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

3.2 Holding Times

The holding time for the anion analysis of a water sample is 28 days from sample collection to analysis. The holding time for TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the anions (batches 14765, 14939, 15084 and 15085). The anions were not detected in the method blanks above the MDLs, with the following exceptions.

Chloride was detected in the method blanks in batches 14765, 14939 and 15084 at estimated concentrations greater than the MDL and less than the RL. Therefore, the chloride concentrations in the associated samples less than five times the method blank concentrations were U qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
FB-01	Chloride	0.064	J B	0.064	U	BL
EB-01	Chloride	0.089	J B	0.089	U	BL
FB-02	Chloride	0.073	J B	0.073	U	BL
FB-03	Chloride	0.071	J B	0.071	U	BL
EB-02	Chloride	0.098	J B	0.098	U	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag defined as analyte was detected in the associated method blank

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported for anions using, using sample HGWA-6. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The MS/MSD recoveries of sulfate were high and outside the laboratory and SOP specified acceptance criteria. Therefore, the sulfate concentration in the associated sample was J qualified as estimated.

Three batch MSs and three batch MS/MSD pairs were also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-6	Sulfate	38.5	NA	38.5	J M1	M-

mg/L- milligram per liter
NA-not applicable

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch as appropriate. The recovery results were within the laboratory and SOP specified acceptance criteria.

3.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for TDS, using sample HGWC-9 and HGWC-16. The RPD results were within the laboratory and SOP specified acceptance criteria, with the following exception.

The RPD of TDS in the laboratory duplicate using sample HGWC-16 was high and outside the laboratory specified acceptance criteria. Since the RPD was within the SOP specified acceptance criteria, no qualifications were applied to the data, based on professional and technical judgment.

Nine batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.7 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. The wet chemistry parameters were not detected in the equipment blanks above the MDLs, with the following exceptions.

Chloride and TDS were detected in EB-01 at estimated concentrations greater than the MDLs and less than the RLs. Since the chloride concentration was U qualified as not detected due to method blank contamination and the TDS concentration was U qualified due to field blank contamination in EB-02, no additional qualifications were applied to the data, based on professional and technical judgment.

Chloride was detected in EB-02 at an estimated concentration greater than the MDL and less than the RL. Since the chloride concentration in EB-02 was U qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

3.8 Field Blank

Five field blanks were collected with the sample sets, FB-01, FB-02, FB-03, FB-04 and FB-05. FB-04 and FB-05 were reported in laboratory reports 2610161 and 2610209, respectively. The wet chemistry parameters were not detected in the field blanks above the MDLs, with the following exceptions.

Chloride was detected in FB-01, FB-02, FB-03 and FB-04 at estimated concentrations greater than the MDL and less than the RL. Since the chloride concentration in FB-01, FB-02, FB-03 and FB-04 were U qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

TDS was detected in FB-02 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated TDS concentration in the associated sample was U qualified as not detected at the RL.

TDS, chloride and sulfate were detected in FB-03 at estimated concentrations greater than the MDLs and less than the RLs. Since the chloride concentration in FB-3 was U qualified as not detected due to method blank contamination and TDS and sulfate were detected in the associated samples at concentrations greater than five times the field blank concentrations, no qualifications were applied to the data, based on professional and technical judgment.

Chloride was detected at an estimated concentration greater than the MDL and less than the RL and TDS (31.0 mg/L) was detected above the RL in FB-05. Since chloride and TDS were detected at concentrations greater than five times the field blank concentrations, no qualifications were applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
EB-01	TDS	12.0	J	12.0	U	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

3.9 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision ($RPD \leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicates and the original samples HGWC-8 and HGWC-18, respectively.

3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

3.11 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags D6, M1 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues

were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ⊗ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the radium-228 data (batches 315901, 315903, 316253 and 316709). Four method blanks were reported for the radium-226 data (batches 315900, 315902, 316252 and 317135). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exception.

Radium-228 was detected above the MDC in the method blank in batch 315903. Since radium-228 concentrations in the associated samples were less than the MDC, no qualifications were applied to the data.

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs and three LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Four LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of radium-226 in the LCSD in batch 315900 and LCS in batch 317135 were low and outside the laboratory and SOP specified acceptance criteria. Therefore, the nondetect radium-226 results were UJ qualified as estimated less than the MDC and the radium-226 concentrations were J qualified as estimated in the associated samples.

The recoveries of radium-228 in the LCS/LCSD pair in batch 316253 and the LCS in batch 316709 were low and outside the laboratory and SOP specified acceptance criteria. Therefore, the nondetect radium-228 results in the associated samples were UJ qualified as estimated less than the MDC and the radium-228 concentrations were J qualified as estimated in the associated samples.

The total radium results were qualified as follows. The total radium results that were less than the MDC with one or both of the qualified radium-226 or radium-228 components were UJ qualified as estimated less than the MDC and the total radium results that were greater than the

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5 December 2018

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MDC with one or both the qualified radium-226 or radium-228 components were J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
FB-01	Radium-226	0.148	U	0.148	UJ	L-
FB-01	Combined Radium 226 + 228	0.570	U	0.570	UJ	L-
HGWA-2	Radium-226	0.386	NA	0.386	J	L-
HGWA-2	Combined Radium 226 + 228	0.434	U	0.434	UJ	L-
HGWA-3	Radium-226	0.185	U	0.185	UJ	L-
HGWA-3	Combined Radium 226 + 228	0.781	U	0.781	UJ	L-
HGWA-1	Radium-226	-0.0333	U	-0.0333	UJ	L-
HGWA-1	Combined Radium 226 + 228	0.132	U	0.132	UJ	L-
HGWA-4	Radium-226	0.132	U	0.132	UJ	L-
HGWA-4	Combined Radium 226 + 228	0.132	U	0.132	UJ	L-
HGWA-5	Radium-226	0.193	U	0.193	UJ	L-
HGWA-5	Combined Radium 226 + 228	0.489	U	0.489	UJ	L-
HGWC-8	Radium-226	0.320	U	0.320	UJ	L-
HGWC-8	Combined Radium 226 + 228	1.21	NA	1.21	J	L-
FD-01	Radium-226	0.323	NA	0.323	J	L-
FD-01	Combined Radium 226 + 228	0.681	U	0.681	UJ	L-
HGWC-7	Radium-226	0.307	NA	0.307	J	L-
HGWC-7	Combined Radium 226 + 228	0.837	U	0.837	UJ	L-
HGWC-9	Radium-226	0.237	U	0.237	UJ	L-
HGWC-9	Combined Radium 226 + 228	0.610	U	0.610	UJ	L-
HGWA-6	Radium-226	0.149	U	0.149	UJ	L-
HGWA-6	Combined Radium 226 + 228	0.643	U	0.643	UJ	L-
HGWC-10	Radium-228	0.704	NA	0.704	J	L-
HGWC-10	Combined Radium 226 + 228	0.948	NA	0.948	J	L-
HGWC-11	Radium-228	1.23	NA	1.23	J	L-
HGWC-11	Combined Radium 226 + 228	1.48	NA	1.48	J	L-
HGWC-12	Radium-228	0.394	U	0.394	UJ	L-
HGWC-12	Combined Radium 226 + 228	0.570	U	0.570	UJ	L-
HGWC-18	Radium-228	1.11	NA	1.11	J	L-
HGWC-18	Combined Radium 226 + 228	2.22	NA	2.22	J	L-
FD-02	Radium-228	1.01	NA	1.01	J	L-
FD-02	Combined Radium 226 + 228	1.85	NA	1.85	J	L-
FB-03	Radium-228	0.355	U	0.355	UJ	L-
FB-03	Combined Radium 226 + 228	0.420	U	0.420	UJ	L-
EB-02	Radium-228	0.0225	U	0.0225	UJ	L-
EB-02	Combined Radium 226 + 228	0.0548	U	0.0548	UJ	L-
HGWC-16	Radium-228	0.909	U	0.909	UJ	L-

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-16	Combined Radium 226 + 228	1.03	U	1.03	UJ	L-
HGWC-17	Radium-228	0.739	U	0.739	UJ	L-
HGWC-17	Combined Radium 226 + 228	1.08	U	1.08	UJ	L-
HGWC-15	Radium-228	0.628	U	0.628	UJ	L-
HGWC-15	Combined Radium 226 + 228	0.858	U	0.858	UJ	L-
HGWC-14	Radium-228	1.11	NA	1.11	J	L-
HGWC-14	Combined Radium 226 + 228	1.48	NA	1.48	J	L-
HGWC-13	Radium-226	0.251	U	0.251	UJ	L-
HGWC-13	Radium-228	0.307	U	0.307	UJ	L-
HGWC-13	Combined Radium 226 + 228	0.558	U	0.558	UJ	L-

pCi/L- picocuries per liter

U- not detected at or above the MDC

NA-not applicable

4.6 **Laboratory Duplicate**

Three sample set specific laboratory duplicates were reported for radium-226 using samples HGWA-2, FB-02 and HGWC-10. The RER (2σ) results were within the laboratory and SOP specified acceptance criteria.

One batch laboratory duplicate was also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 **Tracers and Carriers**

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

4.8 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Radium-226 and Radium-228 were not detected in the equipment blanks above the MDCs.

4.9 **Field Blank**

Three field blanks were collected with the sample sets and reported for the radiochemistry parameters, FB-01, FB-02 and FB-03. Radium-226 and Radium-228 were not detected in the field blanks above the MDCs.

4.10 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision ($RER (2\sigma) < 3$) was demonstrated between the field duplicates and the original samples HGWC-8 and HGWC-18, respectively.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team per the SOP

DATA QUALIFIER DEFINITIONS

- U* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BL	Laboratory blank contamination. The result should be considered "not-detected."
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

APPENDIX A2
Field Data Sheets

Product Name: Low-Flow System

Date: 2018-02-21 12:38:23

Project Information:

Operator Name W.Law
Company Name Geosyntec consultants
Project Name MW7 Arsenic sample
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .170 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW7
Well diameter 2 in
Well Total Depth 26.7 ft
Screen Length 10 ft
Depth to Water 8 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 0 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		+/- 0.2	+/- 10
Last 5	12:14:35	600.02	20.23	5.84	208.60	0.10	7.92	5.13	35.18
Last 5	12:19:35	900.02	20.09	5.89	209.60	0.15	7.95	5.27	33.66
Last 5	12:24:35	1200.01	20.93	5.93	210.62	0.22	7.95	5.16	29.85
Last 5	12:29:35	1500.01	21.22	5.93	211.95	0.42	7.95	5.14	30.99
Last 5	12:34:35	1800.00	21.16	5.94	213.59	0.06	7.95	5.13	32.29
Variance 0			0.84	0.04	1.02			-0.11	-3.82
Variance 1			0.29	0.00	1.32			-0.02	1.14
Variance 2			-0.06	0.01	1.64			-0.01	1.31

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2018-04-02 18:58:08

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 27.6 ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth 32.60 ft
Screen Length 10 ft
Depth to Water 10.29 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	18:44:30	300.12	17.86	7.10	598.20	0.45	10.89	0.80	68.71
Last 5	18:49:30	600.02	17.89	7.10	597.51	0.56	10.89	0.71	64.75
Last 5	18:54:30	900.02	17.74	7.10	591.44	0.41	10.92	0.65	61.35
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.03	-0.00	-0.69			-0.09	-3.96
Variance 2			-0.15	-0.00	-6.07			-0.06	-3.40

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)

Grab Samples

HGWA-1
4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-02 19:42:41

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 22.90 ft

Well Information:

Well ID HGWA-2
Well diameter 2 in
Well Total Depth 27.90 ft
Screen Length 10 ft
Depth to Water 5.46 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	19:05:14	1800.03	17.33	5.45	204.48	6.85	5.56	1.08	69.76
Last 5	19:10:14	2100.03	17.25	5.44	203.18	5.15	5.55	0.94	68.49
Last 5	19:15:14	2400.03	17.20	5.42	201.75	4.97	5.56	0.98	67.40
Last 5	19:20:14	2700.02	17.18	5.41	200.08	4.19	5.56	0.81	66.48
Last 5	19:25:14	3000.02	17.14	5.40	199.41	3.89	5.56	0.76	65.56
Variance 0			-0.05	-0.02	-1.43			0.04	-1.09
Variance 1			-0.01	-0.01	-1.67			-0.17	-0.92
Variance 2			-0.04	-0.01	-0.67			-0.05	-0.91

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).

Grab Samples



Product Name: Low-Flow System

Date: 2018-04-03 09:39:54

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft
Pump placement from TOC 39.60 ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth 44.60 ft
Screen Length 10 ft
Depth to Water 5.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	09:26:44	300.14	16.73	7.38	456.45	0.13	5.26	0.19	-58.77
Last 5	09:31:44	600.02	16.82	7.38	455.78	0.15	5.25	0.14	-64.14
Last 5	09:36:44	900.02	16.82	7.38	454.49	0.11	5.25	0.14	-66.60
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.09	0.00	-0.67			-0.05	-5.37
Variance 2			-0.00	0.00	-1.29			-0.01	-2.46

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)

Grab Samples

HGWA-3
4 bottles App IV

Product Name: Low-Flow System

Date: 2018-04-02 17:41:11

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 20.70 ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 11 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	17:12:09	2100.03	17.42	6.14	201.36	1.44	5.32	0.95	68.90
Last 5	17:17:09	2400.02	17.40	6.16	208.32	1.36	5.33	0.89	66.20
Last 5	17:22:09	2700.02	17.63	6.19	215.33	1.19	5.33	0.84	63.58
Last 5	17:27:09	3000.02	17.80	6.22	222.90	1.01	5.32	0.80	62.56
Last 5	17:32:09	3300.02	18.08	6.23	225.87	0.99	5.32	0.75	62.86
Variance 0			0.23	0.03	7.01			-0.06	-2.62
Variance 1			0.17	0.02	7.57			-0.04	-1.02
Variance 2			0.27	0.02	2.97			-0.04	0.30

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for Appendix IV Metals (EPA 6020B/7470A).

Grab Samples

HGWA-4
4- bottles App IV

Product Name: Low-Flow System

Date: 2018-04-03 10:10:33

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 22.40 ft

Well Information:

Well ID HGWA-5
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 4.53 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	09:34:58	600.03	16.87	6.68	264.06	11.04	5.23	0.60	-3.07
Last 5	09:39:58	900.03	16.91	6.65	257.39	6.89	5.27	0.48	-1.02
Last 5	09:44:58	1200.03	16.94	6.62	251.90	4.66	5.34	0.42	0.82
Last 5	09:49:58	1500.02	16.96	6.62	250.67	4.73	5.35	0.36	1.29
Last 5	09:54:58	1800.02	17.01	6.59	244.02	3.78	5.34	0.31	3.60
Variance 0			0.03	-0.02	-5.49			-0.07	1.84
Variance 1			0.02	-0.01	-1.23			-0.05	0.48
Variance 2			0.04	-0.03	-6.65			-0.05	2.30

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).

Grab Samples



Product Name: Low-Flow System

Date: 2018-04-03 11:22:28

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 45 ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 3.83 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	10:41:45	300.04	17.63	7.53	373.73	8.60	5.00	0.62	-62.66
Last 5	10:46:45	600.03	17.54	7.52	374.26	2.38	5.18	0.87	-46.72
Last 5	10:51:45	900.03	17.59	7.52	374.23	1.57	5.29	0.74	-46.25
Last 5	10:56:45	1200.03	17.64	7.53	374.49	1.65	5.29	0.50	-51.70
Last 5									
Variance 0			-0.09	-0.01	0.53			0.25	15.94
Variance 1			0.04	0.00	-0.03			-0.13	0.47
Variance 2			0.05	0.01	0.25			-0.24	-5.45

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).
Total Depth 50.37

Grab Samples



Product Name: Low-Flow System

Date: 2018-04-03 11:35:57

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-7
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 4.23 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	11:00:02	300.03	18.22	7.14	694.66	0.27	4.30	0.23	16.08
Last 5	11:05:02	600.02	18.30	7.14	695.25	0.16	4.30	0.21	16.75
Last 5	11:10:02	900.02	18.30	7.14	693.69	0.11	4.31	0.20	17.69
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.08	0.00	0.59			-0.03	0.67
Variance 2			0.00	-0.00	-1.56			-0.01	0.94

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)
Total depth 30.50 ft

Grab Samples
HGWC-7
4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-03 12:39:28

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-8
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 3.22 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	12:07:18	300.02	18.47	6.87	976.68	0.07	3.21	0.16	31.64
Last 5	12:12:18	600.02	18.47	6.87	973.62	0.09	3.22	0.13	30.84
Last 5	12:17:18	900.02	18.72	6.87	972.28	0.12	3.29	0.13	30.70
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.00	-0.00	-3.06			-0.03	-0.80
Variance 2			0.25	-0.00	-1.33			0.00	-0.14

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)
Total depth 25.05 ft

Grab Samples
HGWC-8
4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-03 14:29:51

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-9
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.87 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	13:58:52	300.02	19.23	6.99	1160.24	0.37	12.90	0.22	23.24
Last 5	14:03:52	600.02	19.05	7.00	1161.34	0.35	12.91	0.18	23.20
Last 5	14:08:52	900.02	19.41	6.99	1159.92	0.39	12.91	0.16	23.63
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.18	0.00	1.11			-0.04	-0.04
Variance 2			0.36	-0.01	-1.43			-0.02	0.43

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)
Sulfur-like odor. Total depth 47.66 ft.

Grab Samples

HGWC-9

4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-04 09:32:58

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length 17.73 ft

Pump placement from TOC 17.73 ft

Well Information:

Well ID HGWC-10
Well diameter 2 in
Well Total Depth 22.73 ft
Screen Length 10 ft
Depth to Water 12.66 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2611429 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	09:19:26	300.15	16.46	6.62	949.73	0.20	12.70	0.36	37.56
Last 5	09:24:26	600.02	16.56	6.61	949.32	0.49	12.70	0.32	34.59
Last 5	09:29:26	900.02	16.65	6.61	952.20	0.28	12.70	0.31	33.02
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.10	-0.00	-0.41			-0.04	-2.97
Variance 2			0.09	-0.00	2.88			-0.01	-1.57

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)

Grab Samples

HGWC-10
App IV parameters

Product Name: Low-Flow System

Date: 2018-04-04 13:03:38

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft
Pump placement from TOC 21.00 ft

Well Information:

Well ID HGWC-11
Well diameter 2 in
Well Total Depth 26.00 ft
Screen Length 10 ft
Depth to Water 14.11 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	12:41:33	300.03	17.14	5.66	865.18	10.98	14.22	3.83	61.87
Last 5	12:46:33	600.02	17.18	5.71	851.87	7.33	14.22	3.59	58.27
Last 5	12:51:33	900.02	17.14	5.77	841.87	4.39	14.22	3.35	55.39
Last 5	12:56:34	1201.02	17.27	5.79	831.55	2.77	14.22	3.19	53.39
Last 5	13:01:34	1500.92	17.23	5.86	813.34	2.37	14.22	3.05	50.44
Variance 0			-0.04	0.05	-10.01			-0.24	-2.88
Variance 1			0.13	0.03	-10.31			-0.17	-2.00
Variance 2			-0.04	0.07	-18.22			-0.14	-2.95

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)

Grab Samples

HGWC-11
4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-04 12:13:36

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft
Pump placement from TOC ft

Well Information:

Well ID HGWC-12
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 14.21 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	11:39:26	300.05	17.90	7.13	864.78	3.16	14.20	0.87	25.68
Last 5	11:44:26	600.02	18.17	7.11	866.15	2.40	14.21	0.49	25.09
Last 5	11:49:26	900.02	18.22	7.12	863.76	3.23	14.20	0.53	25.10
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.27	-0.01	1.37			-0.38	-0.59
Variance 2			0.05	0.01	-2.38			0.04	0.01

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)
Bladder pump was not producing enough rate for Low-flow. Pete Robinson authorized to use peristaltic pump by lowering tubing past the bladder pump to middle of screen. Rotten egg odor. Total depth 34.98 ft.

Grab Samples
HGWC-12
4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-04 11:43:58

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 39.6 ft

Well Information:

Well ID HGWC-13
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.84 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	10:41:25	300.04	18.43	7.25	623.53	7.65	17.91	1.34	-33.11
Last 5	10:46:25	600.03	18.70	7.26	626.72	2.89	17.91	1.08	-28.82
Last 5	10:51:25	900.02	18.72	7.27	641.51	3.85	17.91	0.68	-30.95
Last 5	10:56:25	1200.03	18.82	7.27	645.13	3.67	17.90	0.51	-31.52
Last 5									
Variance 0			0.26	0.01	3.19			-0.26	4.30
Variance 1			0.02	0.01	14.79			-0.40	-2.13
Variance 2			0.10	0.00	3.62			-0.17	-0.57

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).

Total Depth 45.56

Grab Samples



Product Name: Low-Flow System

Date: 2018-04-04 09:59:32

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 38 ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 24.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	09:10:54	300.09	18.52	4.43	3179.22	16.10	24.30	2.24	335.06
Last 5	09:15:54	600.02	18.88	4.46	3143.32	6.07	24.30	1.43	358.01
Last 5	09:20:54	900.02	18.90	4.48	3138.41	3.40	24.31	1.04	368.83
Last 5	09:25:54	1200.02	18.93	4.49	3132.70	1.77	24.29	0.86	363.31
Last 5	09:30:54	1500.01	18.89	4.50	3124.21	1.26	24.29	0.75	342.39
Variance 0			0.02	0.02	-4.91			-0.39	10.82
Variance 1			0.02	0.01	-5.71			-0.18	-5.52
Variance 2			-0.04	0.01	-8.49			-0.11	-20.92

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).

Total Depth 43.13

Grab Samples
HGWC-14
4 bottles App IV

Product Name: Low-Flow System

Date: 2018-04-03 16:27:15

Project Information:

Operator Name Aaron Reeder/Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.36 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	15:47:35	300.02	19.49	5.98	1672.97	0.15	16.21	1.36	367.91
Last 5	15:52:35	600.02	19.66	6.00	1676.70	0.13	16.22	1.06	349.12
Last 5	15:57:35	900.02	19.72	5.98	1684.32	0.17	16.22	0.73	311.48
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.17	0.02	3.73			-0.31	-18.80
Variance 2			0.06	-0.02	7.62			-0.33	-37.64

Notes

4 samples: two 1-L plastic bottles w/HNO3 for Radium (EPA 9315/9320); one 125-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle w/HNO3 for App IV metals (EPA 6020B/7470A)
Total depth 38.15 ft

Grab Samples

HGWC-15

4 bottles App IV parameters

FD-01

4 bottles App IV parameters

Product Name: Low-Flow System

Date: 2018-04-03 16:55:59

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 28 ft

Well Information:

Well ID HGWC-16
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.60 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 14 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	16:07:15	2999.98	19.68	7.07	929.07	7.75	11.57	0.10	-18.30
Last 5	16:12:15	3299.98	19.69	7.07	928.09	5.80	11.58	0.10	-14.25
Last 5	16:17:15	3599.98	19.54	7.07	930.78	4.91	11.58	0.10	-14.42
Last 5	16:22:15	3899.96	19.59	7.07	928.79	4.87	11.58	0.10	-15.19
Last 5	16:27:15	4199.96	19.54	7.07	930.81	4.83	11.59	0.10	-20.15
Variance 0			-0.15	-0.00	2.70			0.00	-0.17
Variance 1			0.05	-0.00	-2.00			-0.00	-0.77
Variance 2			-0.05	0.00	2.03			0.01	-4.96

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).
Total Depth 33.45

Grab Samples



Product Name: Low-Flow System

Date: 2018-04-03 14:29:27

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 22.80 ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.54 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	13:50:34	300.03	18.85	6.25	1602.81	1.29	16.89	1.88	76.67
Last 5	13:55:34	600.03	19.03	6.22	1625.62	2.92	16.88	1.01	60.36
Last 5	14:00:34	900.03	18.85	6.22	1626.77	2.08	16.88	0.83	54.30
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.17	-0.03	22.81			-0.86	-16.32
Variance 2			-0.17	-0.00	1.15			-0.18	-6.05

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).

Total Depth 27.83

Grab Samples



Product Name: Low-Flow System

Date: 2018-04-03 13:18:20

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Hammond
Site Name Plant Hammond AP-1 and 2
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type Polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 22.70 ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.67 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	12:33:44	300.04	16.98	4.50	2295.81	0.78	16.80	0.92	264.79
Last 5	12:41:23	300.04	16.69	4.53	2246.58	1.13	16.83	0.64	254.14
Last 5	12:46:23	600.04	16.69	4.53	2256.43	1.01	16.84	0.58	247.19
Last 5	12:51:23	900.03	16.69	4.54	2270.96	0.96	16.83	0.51	246.90
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.00	0.01	9.85			-0.06	-6.95
Variance 2			-0.00	0.00	14.53			-0.07	-0.28

Notes

4 samples: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); and one 250-mL plastic bottle with HNO3 for appendix IV Metals (EPA6020B/7470A).
Total Depth 27.70

Grab Samples



Product Name: Low-Flow System

Date: 2018-06-04 19:03:44

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.43 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 10.75 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	18:06:43	1500.00	17.97	7.05	718.51	1.61	17.02	0.78	73.28
Last 5	18:11:44	1801.00	17.98	7.05	710.52	1.42	17.01	0.67	71.98
Last 5	18:16:44	2100.99	17.98	7.05	703.64	1.36	17.02	0.56	71.28
Last 5	18:21:44	2400.98	17.97	7.05	696.67	1.20	17.02	0.52	70.52
Last 5	18:26:44	2700.96	17.85	7.06	686.38	1.19	17.02	0.47	69.21
Variance 0			0.00	-0.00	-6.88			-0.11	-0.70
Variance 1			-0.02	-0.00	-6.97			-0.04	-0.76
Variance 2			-0.12	0.01	-10.29			-0.05	-1.31

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 32.35 ft.

Grab Samples

HGWA-1
Grab

Product Name: Low-Flow System

Date: 2018-06-04 16:41:15

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-2
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.42 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 12.25 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	15:48:05	300.12	19.52	5.31	195.24	7.33	6.48	0.16	68.50
Last 5	15:53:05	600.02	19.49	5.30	194.88	6.41	6.48	0.16	68.61
Last 5	15:58:05	900.01	19.39	5.29	194.37	5.65	6.48	0.15	68.59
Last 5	16:03:05	1200.01	19.11	5.28	193.24	4.36	6.48	0.12	68.37
Last 5	16:08:06	1501.00	18.87	5.27	192.56	4.07	6.49	0.12	68.27
Variance 0			-0.11	-0.01	-0.51			-0.01	-0.03
Variance 1			-0.28	-0.01	-1.13			-0.03	-0.21
Variance 2			-0.23	-0.01	-0.68			-0.00	-0.10

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 28.45 ft.

Grab Samples

HGWA-2
Grab

Product Name: Low-Flow System

Date: 2018-06-04 16:02:58

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	15:37:23	900.02	19.08	7.37	426.62	2.56	6.25	0.73	-33.47
Last 5	15:42:23	1200.02	18.95	7.37	426.99	1.95	6.25	0.62	-37.51
Last 5	15:47:23	1500.02	18.90	7.37	429.05	1.78	6.25	0.57	-44.92
Last 5	15:52:23	1800.02	18.93	7.37	428.47	1.58	6.25	0.47	-53.32
Last 5	15:57:23	2100.03	18.94	7.38	428.38	1.94	6.25	0.40	-62.35
Variance 0			-0.05	0.00	2.06			-0.05	-7.41
Variance 1			0.03	0.00	-0.59			-0.10	-8.39
Variance 2			0.00	0.01	-0.09			-0.07	-9.04

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 45.4 ft.

Grab Samples

HGWA-3
Grab

Product Name: Low-Flow System

Date: 2018-06-04 18:43:10

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 8 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	17:40:26	600.42	18.94	6.82	487.37	10.65	6.80	0.38	21.65
Last 5	17:45:26	900.41	18.90	6.82	486.39	8.14	6.83	0.34	22.82
Last 5	17:50:26	1200.41	18.85	6.82	486.13	6.37	6.84	0.29	23.66
Last 5	17:55:26	1500.41	18.73	6.82	483.82	4.87	6.84	0.26	24.50
Last 5	18:00:26	1800.41	18.77	6.82	481.73	3.95	6.84	0.24	24.99
Variance 0			-0.05	-0.00	-0.26			-0.06	0.84
Variance 1			-0.13	0.00	-2.31			-0.03	0.83
Variance 2			0.04	-0.01	-2.08			-0.02	0.49

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 24.85 ft.

Grab Samples

HGWA-4
Grab

Product Name: Low-Flow System

Date: 2018-06-05 11:04:42

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-5
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.10 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 0 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	10:12:23	1800.00	19.88	6.42	246.91	6.19	6.73	0.12	53.88
Last 5	10:17:23	2099.99	20.11	6.42	247.82	5.89	6.72	0.11	51.61
Last 5	10:22:23	2399.99	20.12	6.43	248.71	5.07	6.70	0.11	49.65
Last 5	10:27:23	2699.98	19.76	6.44	248.56	4.77	6.72	0.12	48.07
Last 5	10:32:23	2999.97	19.62	6.44	246.58	4.58	6.73	0.13	46.21
Variance 0			0.01	0.01	0.89			-0.00	-1.95
Variance 1			-0.36	0.01	-0.15			0.01	-1.58
Variance 2			-0.13	0.00	-1.98			0.01	-1.86

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 27.55 ft

Grab Samples

HGWA-5
Grab

Product Name: Low-Flow System

Date: 2018-06-05 12:36:30

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 5.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	11:43:06	300.09	19.90	7.32	382.85	4.31	6.98	0.16	52.78
Last 5	11:48:06	600.03	20.12	7.35	383.21	3.71	6.95	0.13	50.23
Last 5	11:53:06	900.01	20.38	7.35	381.61	3.09	6.94	0.11	48.07
Last 5	11:58:06	1200.01	20.16	7.37	379.65	2.99	6.94	0.10	46.39
Last 5									
Variance 0			0.22	0.02	0.37			-0.02	-2.55
Variance 1			0.26	0.01	-1.60			-0.02	-2.17
Variance 2			-0.23	0.01	-1.96			-0.01	-1.67

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 50.39 ft

Grab Samples

HGWA-6
Grab

Product Name: Low-Flow System

Date: 2018-06-05 18:40:54

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-7
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 4.33 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	17:44:59	1200.02	20.81	7.13	716.92	11.77	4.41	0.17	20.74
Last 5	17:49:59	1500.02	21.24	7.13	712.74	9.77	4.41	0.18	20.22
Last 5	17:54:59	1800.02	21.26	7.13	713.14	6.10	4.41	0.19	21.24
Last 5	17:59:59	2100.02	21.19	7.13	714.11	4.94	4.41	1.45	21.29
Last 5	18:04:59	2400.02	21.16	7.13	715.88	4.56	4.41	0.20	20.55
Variance 0			0.02	-0.00	0.40			0.00	1.02
Variance 1			-0.07	0.00	0.96			1.27	0.04
Variance 2			-0.03	0.00	1.77			-1.26	-0.74

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 30.5 ft

Grab Samples

HGWC-7
Grab

Product Name: Low-Flow System

Date: 2018-06-06 10:37:12

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-8
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 3.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	09:38:36	300.12	20.57	6.86	936.96	1.35	3.30	0.24	56.55
Last 5	09:43:36	600.02	20.53	6.88	941.50	0.85	3.30	0.21	55.41
Last 5	09:48:36	900.02	20.77	6.89	937.09	0.63	3.30	0.16	54.72
Last 5	09:53:36	1200.02	20.72	6.90	941.77	0.57	3.30	0.17	54.20
Last 5									
Variance 0			-0.04	0.02	4.54			-0.03	-1.14
Variance 1			0.24	0.01	-4.41			-0.05	-0.69
Variance 2			-0.04	0.01	4.68			0.01	-0.52

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 25.05 ft

Grab Samples

HGWC-8
Grab

Product Name: Low-Flow System

Date: 2018-06-06 12:13:47

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-9
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	11:13:37	300.03	20.28	7.00	1144.46	0.75	12.10	0.56	29.44
Last 5	11:18:37	600.02	20.14	7.01	1196.39	1.98	12.10	0.39	24.29
Last 5	11:23:37	900.02	20.24	7.01	1194.32	2.34	12.10	0.28	17.73
Last 5	11:28:37	1200.02	20.15	7.02	1195.77	2.99	12.10	0.25	17.93
Last 5									
Variance 0			-0.14	0.01	51.93			-0.17	-5.14
Variance 1			0.09	0.00	-2.06			-0.11	-6.56
Variance 2			-0.08	0.00	1.45			-0.03	0.20

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 47.67 ft

Grab Samples

HGWC-9
Grab

Product Name: Low-Flow System

Date: 2018-06-05 15:23:21

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-10
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.92 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 0 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	14:39:52	300.09	19.32	6.66	997.26	0.84	10.96	0.15	69.68
Last 5	14:44:52	600.02	19.23	6.66	1000.56	0.83	10.96	0.10	69.42
Last 5	14:49:51	900.02	19.23	6.65	998.80	0.79	10.96	0.11	69.42
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.09	-0.01	3.30			-0.05	-0.25
Variance 2			-0.00	-0.00	-1.76			0.00	-0.01

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 22.72 ft

Grab Samples

HGWC-10
Grab

Product Name: Low-Flow System

Date: 2018-06-05 17:37:14

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-11
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.18 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4.75 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	16:57:29	300.09	19.59	6.26	735.53	1.32	12.31	0.41	90.00
Last 5	17:02:29	600.02	19.70	6.27	729.26	1.05	12.32	0.38	90.53
Last 5	17:07:29	900.02	19.66	6.27	740.94	1.00	12.32	0.40	91.17
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.11	0.00	-6.28			-0.03	0.53
Variance 2			-0.04	0.00	11.69			0.02	0.64

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 26 ft

Grab Samples

HGWC-11
Grab

Product Name: Low-Flow System

Date: 2018-06-06 14:32:05

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-12
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.02 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 7 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	13:26:21	600.02	20.48	7.12	925.79	0.68	13.03	0.23	25.54
Last 5	13:31:21	900.02	20.41	7.12	926.63	0.42	13.03	0.25	25.09
Last 5	13:36:21	1200.02	20.41	7.12	877.05	0.44	13.03	0.16	25.16
Last 5	13:41:21	1500.02	20.34	7.12	903.08	0.31	13.03	0.16	24.96
Last 5	13:46:21	1800.08	20.42	7.12	906.26	0.15	13.03	0.17	24.90
Variance 0			-0.00	-0.00	-49.58			-0.09	0.07
Variance 1			-0.07	0.00	26.02			0.00	-0.20
Variance 2			0.08	-0.00	3.18			0.01	-0.05

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 35 ft

Grab Samples

HGWC-12
Grab

Product Name: Low-Flow System

Date: 2018-06-05 16:02:08

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-13
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.82 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 3.925233 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	15:03:04	900.02	20.49	7.21	795.63	11.38	16.92	0.51	1.04
Last 5	15:08:04	1200.02	20.66	7.21	800.76	7.43	16.91	0.31	-4.09
Last 5	15:13:05	1500.92	20.83	7.21	800.71	4.90	16.91	0.24	-9.63
Last 5	15:18:05	1800.92	21.02	7.21	800.63	3.80	16.91	0.22	-13.83
Last 5	15:23:05	2100.92	21.02	7.20	798.78	3.54	16.92	0.19	-19.62
Variance 0			0.18	-0.00	-0.05			-0.06	-5.53
Variance 1			0.18	-0.01	-0.08			-0.03	-4.20
Variance 2			0.00	-0.01	-1.84			-0.03	-5.80

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 45.56 ft

Grab Samples

HGWC-13
Grab

Product Name: Low-Flow System

Date: 2018-06-06 16:20:28

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 24.18 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	15:22:23	300.06	22.60	4.46	3193.36	8.27	24.26	0.71	244.23
Last 5	15:27:23	600.02	22.55	4.47	3196.56	3.09	24.26	0.47	250.00
Last 5	15:32:23	900.02	22.45	4.48	3196.50	2.69	24.26	0.37	258.32
Last 5	15:37:23	1200.10	22.51	4.49	3193.52	2.03	24.26	0.37	263.72
Last 5									
Variance 0			-0.04	0.01	3.20			-0.24	5.77
Variance 1			-0.10	0.01	-0.06			-0.11	8.32
Variance 2			0.05	0.01	-2.98			0.00	5.40

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 43.15 ft

Grab Samples

HGWC-14
Grab

Product Name: Low-Flow System

Date: 2018-06-06 16:09:24

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 8.5 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	14:57:19	300.09	20.70	6.24	1684.02	0.93	15.89	0.80	96.72
Last 5	15:02:19	600.02	20.76	6.23	1688.43	0.95	15.89	0.66	98.41
Last 5	15:07:19	900.02	20.79	6.20	1687.94	0.71	15.89	0.58	100.35
Last 5	15:12:19	1200.01	20.75	6.17	1682.30	1.03	15.89	0.50	102.12
Last 5	15:17:19	1500.01	20.88	6.12	1675.11	0.84	15.89	0.43	104.32
Variance 0			0.02	-0.02	-0.48			-0.07	1.94
Variance 1			-0.04	-0.03	-5.64			-0.08	1.77
Variance 2			0.13	-0.04	-7.19			-0.07	2.20

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 38.1 ft

Grab Samples

HGWC-15
Grab

Product Name: Low-Flow System

Date: 2018-06-06 18:58:47

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-16
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.37 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 20.75 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	18:11:46	3899.98	19.36	6.99	977.49	7.68	11.62	0.08	27.62
Last 5	18:16:46	4199.98	19.40	6.99	983.92	8.98	11.63	0.08	25.68
Last 5	18:21:46	4499.97	19.36	6.99	979.21	6.37	11.67	0.08	23.70
Last 5	18:26:46	4799.96	19.32	7.00	981.71	5.11	11.67	0.08	21.93
Last 5	18:31:46	5099.95	19.31	7.00	980.30	4.50	11.73	0.07	19.99
Variance 0			-0.04	0.00	-4.71			-0.00	-1.98
Variance 1			-0.05	0.00	2.50			0.00	-1.77
Variance 2			-0.00	0.00	-1.41			-0.00	-1.94

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 33.5 ft

Grab Samples

HGWC-16
Grab

Product Name: Low-Flow System

Date: 2018-06-06 18:02:10

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.07 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	17:13:05	300.02	20.63	6.22	1784.48	27.20	17.40	0.38	75.52
Last 5	17:18:05	600.02	20.33	6.22	1782.33	15.90	17.40	0.32	72.83
Last 5	17:23:06	900.84	20.18	6.22	1784.64	12.08	17.40	0.38	70.91
Last 5	17:28:06	1200.84	20.03	6.22	1773.61	6.98	17.45	0.30	70.54
Last 5	17:33:06	1500.84	19.92	6.22	1768.28	4.93	17.45	0.27	68.45
Variance 0			-0.14	-0.00	2.31			0.06	-1.91
Variance 1			-0.15	0.01	-11.03			-0.08	-0.37
Variance 2			-0.11	-0.00	-5.34			-0.03	-2.10

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 27.85 ft

Grab Samples

HGWC-17
Grab

Product Name: Low-Flow System

Date: 2018-06-05 17:59:59

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50 Bladder
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.96 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5863197 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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		+/- 10%	+/- 10
Last 5	17:18:03	2399.91	19.15	4.60	2321.18	0.93	17.09	0.76	186.40
Last 5	17:23:03	2699.90	19.26	4.59	2323.26	1.06	17.09	0.66	190.12
Last 5	17:28:03	2999.90	19.30	4.58	2326.91	0.76	17.09	0.58	194.18
Last 5	17:33:03	3299.91	19.24	4.58	2323.57	0.68	17.08	0.51	199.11
Last 5	17:38:03	3599.90	18.88	4.57	2330.26	0.71	17.09	0.45	202.83
Variance 0			0.05	-0.01	3.65			-0.08	4.06
Variance 1			-0.07	-0.00	-3.34			-0.07	4.92
Variance 2			-0.36	-0.00	6.69			-0.05	3.73

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 27.69 ft

Grab Samples

HGWC-18
Grab

Product Name: Low-Flow System

Date: 2018-10-01 15:16:50

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.5 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 7 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	14:39:12	600.10	19.47	7.09	514.84	1.06	16.10	0.24	-3.71
Last 5	14:44:12	900.02	19.33	7.08	524.42	1.02	16.10	0.26	-5.63
Last 5	14:49:12	1200.01	19.23	7.09	526.88	0.81	16.10	0.23	-7.02
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.14	-0.00	9.58			0.02	-1.93
Variance 2			-0.10	0.00	2.46			-0.03	-1.39

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 32.30 ft.

Grab Samples

HGWA-1
Grab

Product Name: Low-Flow System

Date: 2018-10-01 15:50:17

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-2
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 7.43 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	14:41:17	1801.99	22.12	5.34	196.14	7.57	7.50	0.15	51.07
Last 5	14:46:17	2101.98	22.25	5.33	194.78	6.08	7.50	0.15	50.96
Last 5	14:51:17	2401.97	22.25	5.32	193.97	5.74	7.50	0.17	50.55
Last 5	14:56:17	2701.97	22.30	5.32	192.51	5.06	7.50	0.16	50.55
Last 5	15:01:17	3001.95	21.98	5.31	192.00	4.77	7.50	0.16	50.63
Variance 0			0.00	-0.01	-0.81			0.02	-0.41
Variance 1			0.05	-0.01	-1.47			-0.01	-0.01
Variance 2			-0.32	-0.01	-0.51			-0.00	0.08

Notes

4 plastic bottles: two 1-L bottles with HNO₃ for Ra (EPA 9315/9320); one 250-mL bottle with HNO₃ for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 28.25 ft

Grab Samples

HGWA-2
Grab

Product Name: Low-Flow System

Date: 2018-10-01 17:32:36

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 7.22 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	16:37:28	2699.97	20.66	7.09	458.11	10.35	7.25	0.27	-22.46
Last 5	16:42:28	2999.96	20.62	7.11	456.62	7.08	7.25	0.28	-26.51
Last 5	16:47:28	3299.95	20.55	7.12	456.10	5.53	7.25	0.28	-30.22
Last 5	16:52:28	3599.94	20.66	7.13	455.55	4.15	7.25	0.28	-34.00
Last 5	16:57:28	3899.93	20.62	7.14	454.66	--	--	0.29	-37.04
Variance 0			-0.07	0.01	-0.52			-0.01	-3.71
Variance 1			0.12	0.01	-0.55			0.00	-3.79
Variance 2			-0.04	0.01	-0.90			0.01	-3.04

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 45.21 ft.

Grab Samples

HGWA-3
Grab

Product Name: Low-Flow System

Date: 2018-10-01 17:14:39

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.20 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 13.75 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	16:34:05	1200.00	21.96	5.61	104.49	1.14	6.42	1.12	139.70
Last 5	16:39:05	1500.00	21.89	5.62	109.68	1.10	6.42	1.11	139.38
Last 5	16:44:05	1799.99	21.92	5.67	115.17	1.16	6.42	1.06	136.59
Last 5	16:49:05	2099.99	22.02	5.71	120.40	1.11	6.42	1.03	128.63
Last 5	16:54:05	2399.98	21.78	5.73	125.30	1.05	6.42	1.00	125.73
Variance 0			0.03	0.05	5.49			-0.04	-2.80
Variance 1			0.11	0.04	5.23			-0.04	-7.95
Variance 2			-0.25	0.02	4.90			-0.03	-2.90

Notes

4 plastic bottles: two 1-L bottles with HNO₃ for Ra (EPA 9315/9320); one 250-mL bottle with HNO₃ for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 24.81 ft.

Grab Samples

HGWA-4
Grab

Product Name: Low-Flow System

Date: 2018-10-02 10:33:05

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-5
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.50 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5.5 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	09:48:53	300.10	20.49	6.16	182.98	3.14	7.20	0.30	77.20
Last 5	09:53:53	600.03	20.60	6.25	203.80	2.03	7.22	0.22	64.52
Last 5	09:58:53	900.02	20.86	6.33	210.33	2.19	7.26	0.19	57.77
Last 5	10:03:53	1200.02	20.88	6.35	214.52	2.49	7.28	0.18	54.57
Last 5									
Variance 0			0.12	0.10	20.82			-0.08	-12.68
Variance 1			0.25	0.07	6.53			-0.03	-6.75
Variance 2			0.03	0.02	4.19			-0.01	-3.20

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 27.57 ft.

Grab Samples

HGWA-5
Grab

Product Name: Low-Flow System

Date: 2018-10-02 10:34:33

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 45.52 ft

Pump placement from TOC 45.52 ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.22 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.688175 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	09:43:02	300.05	19.79	7.11	370.21	9.18	7.38	0.28	-80.33
Last 5	09:48:02	600.02	19.75	7.23	370.26	2.10	7.45	0.21	-77.66
Last 5	09:53:02	900.02	19.61	7.30	370.39	1.94	7.46	0.16	-77.67
Last 5	09:58:02	1200.02	19.64	7.34	370.48	1.73	7.48	0.12	-78.07
Last 5	10:03:02	1500.02	19.62	7.36	369.99	1.62	7.48	0.11	-78.19
Variance 0			-0.15	0.07	0.13			-0.04	-0.01
Variance 1			0.03	0.04	0.09			-0.04	-0.40
Variance 2			-0.02	0.03	-0.49			-0.01	-0.12

Notes

4 plastic bottles: two 1-L bottles with HNO₃ for Ra (EPA 9315/9320); one 250-mL bottle with HNO₃ for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0).TD=50.44 ft.

Grab Samples

HGWA-6
Grab

Product Name: Low-Flow System

Date: 2018-10-02 15:40:07

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-7
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 4.13 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6.75 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	14:58:41	300.10	22.61	7.11	689.47	5.70	4.25	0.00	60.20
Last 5	15:03:41	600.03	22.52	7.12	693.51	5.31	4.25	0.00	71.34
Last 5	15:08:41	900.02	22.27	7.12	694.02	4.72	4.26	0.00	79.60
Last 5	15:13:41	1200.01	21.82	7.12	693.44	3.82	4.26	0.33	92.61
Last 5									
Variance 0			-0.09	0.01	4.04			0.00	11.14
Variance 1			-0.25	-0.00	0.51			0.00	8.26
Variance 2			-0.45	0.00	-0.57			0.33	13.01

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 30.50 ft.

Grab Samples

HGWC-7
Grab

Product Name: Low-Flow System

Date: 2018-10-02 13:06:02

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-8
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 3.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 11 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	12:02:44	1803.00	25.06	6.84	44.95	0.72	3.28	0.82	73.64
Last 5	12:07:44	2102.99	24.79	6.87	0.14	0.75	3.28	0.98	62.84
Last 5	12:12:44	2402.99	22.46	6.87	857.28	0.85	3.28	0.41	88.31
Last 5	12:17:44	2702.99	21.95	6.89	864.82	0.68	3.28	0.25	87.48
Last 5	12:22:44	3002.98	21.93	6.90	865.07	0.63	3.28	0.13	86.67
Variance 0			-2.33	0.00	857.14			-0.57	25.47
Variance 1			-0.50	0.02	7.54			-0.16	-0.83
Variance 2			-0.03	0.01	0.25			-0.12	-0.81

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 25.08 ft.

Grab Samples

HGWC-8
Grab
FD-01
Duplicate

Product Name: Low-Flow System

Date: 2018-10-02 17:12:47

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-9
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.06 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 0 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	16:33:04	300.10	20.53	7.05	1116.90	2.69	13.50	0.47	86.98
Last 5	16:38:04	600.03	20.31	7.05	1121.53	4.37	13.50	0.39	85.72
Last 5	16:43:04	900.02	20.43	7.05	1120.32	4.47	13.50	0.36	83.63
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.22	0.00	4.63			-0.08	-1.26
Variance 2			0.12	-0.00	-1.21			-0.03	-2.08

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 47.68 ft.

Grab Samples

HGWC-9
Grab

Product Name: Low-Flow System

Date: 2018-10-02 17:59:50

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-10
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.76 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	17:15:26	1500.01	21.51	6.53	794.89	1.31	12.81	2.14	183.65
Last 5	17:20:26	1800.01	21.39	6.54	803.57	2.12	12.81	1.95	169.86
Last 5	17:25:26	2100.00	21.33	6.55	816.23	1.30	12.81	1.80	158.89
Last 5	17:30:26	2400.00	21.28	6.53	817.06	1.10	12.81	1.76	149.06
Last 5	17:35:26	2700.00	21.24	6.55	825.97	0.97	12.81	1.68	141.39
Variance 0			-0.06	0.01	12.65			-0.15	-10.97
Variance 1			-0.05	-0.02	0.84			-0.05	-9.83
Variance 2			-0.04	0.02	8.91			-0.08	-7.67

Notes

4 plastic bottles: two 1-L bottles with HNO₃ for Ra (EPA 9315/9320); one 250-mL bottle with HNO₃ for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 22.53 ft

Grab Samples

HGWC-10
Grab

Product Name: Low-Flow System

Date: 2018-10-03 10:23:12

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 20 ft

Pump placement from TOC 20 ft

Well Information:

Well ID HGWC-11
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.01 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1792685 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	09:45:28	2401.02	22.16	5.87	661.14	1.47	15.09	1.65	110.88
Last 5	09:50:28	2701.02	22.18	5.90	656.94	2.14	15.09	1.52	110.16
Last 5	09:55:28	3001.01	22.18	5.93	651.48	1.73	15.09	1.31	109.41
Last 5	10:00:28	3301.01	22.21	5.96	653.61	1.34	15.09	1.42	108.12
Last 5	10:05:28	3601.01	22.18	5.97	644.08	1.38	15.09	1.37	108.34
Variance 0			0.00	0.04	-5.46			-0.21	-0.74
Variance 1			0.03	0.02	2.13			0.11	-1.29
Variance 2			-0.03	0.01	-9.53			-0.05	0.22

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 25.79 ft.

Grab Samples

HGWC-11
Grab

Product Name: Low-Flow System

Date: 2018-10-03 11:32:15

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 39.68 ft

Well Information:

Well ID HGWC-12
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.15 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	10:51:16	300.10	22.04	7.09	869.45	3.06	15.16	1.26	76.32
Last 5	10:56:16	600.04	22.09	7.08	874.08	2.75	15.16	0.20	82.75
Last 5	11:01:16	900.05	21.10	7.08	881.18	2.97	15.16	0.27	84.48
Last 5	11:06:16	1200.04	21.05	7.08	883.88	2.08	15.15	0.15	84.69
Last 5	11:11:16	1500.02	21.06	7.08	883.10	1.69	15.15	0.13	84.46
Variance 0			-0.99	0.00	7.09			0.07	1.73
Variance 1			-0.05	-0.00	2.70			-0.12	0.21
Variance 2			0.01	0.00	-0.78			-0.03	-0.23

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 35.80 ft.

Grab Samples

HGWC-12
Grab

Product Name: Low-Flow System

Date: 2018-10-05 12:11:26

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-13
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.35 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 0 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	11:30:01	300.05	22.33	7.21	520.02	3.92	17.40	0.34	32.18
Last 5	11:35:01	600.04	22.48	7.23	513.90	3.62	17.41	0.21	36.44
Last 5	11:40:01	900.02	22.62	7.24	509.26	3.50	17.41	0.17	38.02
Last 5	11:45:01	1200.02	22.86	7.24	507.59	2.30	17.42	0.14	38.73
Last 5									
Variance 0			0.15	0.02	-6.12			-0.13	4.26
Variance 1			0.14	0.01	-4.64			-0.04	1.59
Variance 2			0.23	0.00	-1.67			-0.03	0.71

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 45.38 ft.

Grab Samples

HGWC-13
Grab

Product Name: Low-Flow System

Date: 2018-10-03 16:04:19

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 24.71 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 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	14:57:51	600.02	22.63	4.66	2986.91	0.89	24.80	0.84	238.34
Last 5	15:02:51	900.02	22.54	4.66	2983.65	0.92	24.80	0.74	245.05
Last 5	15:07:51	1200.01	22.46	4.66	2985.26	0.93	24.80	0.66	240.40
Last 5	15:12:51	1500.01	22.45	4.66	2987.58	0.90	24.80	0.58	239.11
Last 5	15:22:51	2099.99	22.98	4.67	2989.04	0.96	24.80	0.47	242.40
Variance 0			-0.08	0.00	1.61			-0.08	-4.65
Variance 1			-0.02	0.00	2.31			-0.08	-1.29
Variance 2			0.54	0.01	1.47			-0.12	3.29

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 43.15 ft.

Grab Samples

HGWC-14
Grab

Product Name: Low-Flow System

Date: 2018-10-03 14:11:18

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 7 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	13:17:07	300.08	21.00	5.96	1593.48	0.81	16.36	0.88	173.53
Last 5	13:22:07	600.02	20.93	5.94	1593.67	0.83	16.36	0.74	178.56
Last 5	13:27:07	900.01	20.93	5.92	1592.88	0.84	16.36	0.60	182.04
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.06	-0.03	0.19			-0.14	5.03
Variance 2			-0.01	-0.02	-0.79			-0.14	3.48

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 38.15 ft.

Grab Samples

HGWC-15
Grab

Product Name: Low-Flow System

Date: 2018-10-03 10:24:12

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-16
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.73 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 11 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	09:36:55	300.10	20.29	6.90	970.00	5.96	11.65	0.13	-37.24
Last 5	09:41:55	600.03	20.17	6.92	973.12	5.60	11.65	0.12	-48.31
Last 5	09:46:55	900.03	20.26	6.94	975.18	4.25	11.65	0.11	-53.98
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.12	0.02	3.12			-0.01	-11.07
Variance 2			0.09	0.01	2.06			-0.01	-5.67

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 33.48 ft.

Grab Samples

HGWC-16
Grab

Product Name: Low-Flow System

Date: 2018-10-03 11:52:16

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.47 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 8 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	11:04:52	300.09	21.87	6.26	1725.07	8.66	17.51	0.00	52.65
Last 5	11:09:52	600.03	21.89	6.24	1719.48	7.97	17.51	0.00	59.37
Last 5	11:14:52	900.02	21.92	6.24	1727.42	6.07	17.51	0.00	67.29
Last 5	11:19:52	1200.01	22.07	6.23	1723.29	5.50	17.51	0.00	87.32
Last 5	11:24:52	1500.00	22.00	6.23	1719.79	4.08	17.51	0.00	126.09
Variance 0			0.03	-0.01	7.94			0.00	7.92
Variance 1			0.14	-0.01	-4.12			0.00	20.03
Variance 2			-0.07	0.00	-3.50			0.00	38.77

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 27.86 ft.

Grab Samples

HGWC-17
Grab

GROUNDWATER SAMPLING LOG SHEET

Client: GA POWER
 Site: Plant Hammond
 Well ID: HGWC-18
 Total Depth (ft): 27.52
 Depth to Water (ft): 17.66
 Well Diameter (in): 2
 Well Volume (gal) = 0.041d²h: 1.62^(NM)
 Well Volume (L) = gal * 3.785: 6.12^(NM)

Project No.: GW6581
 Location: AP-2
 Pump Type/Model: Bladder
 Tubing Material: Poly
 Pump Intake Depth (ft): 22.80
 Start/Stop Purge Time: 1248/1347
 Purge Rate (mL/min): 200
 Total Purge Volume (L): 9.5
 Purge Method: Low-Flow Well Volume Other: —
 Sampling Method: Pump Discharge Other: —

Sampling Date: 10/3/2018
 Sampler's Name: R. MURRAY
 Sample Collection Time: 1347
 Sample Purge Rate (mL/min): 200
 Sample ID: HGWC-18
 Laboratory Analyses: See COC
 QA/QC Collected? YES
 QA/QC I.D. FD-02

d = well diameter (inches); h = length of water column (feet)

Well Type: Flush Stick Up
 Well Lock: Yes No
 Well Cap Condition: Good Replace
 Well Tag Present: Yes No

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1254	4.43	2403.70	200.50	1.27	24.67	5.73	17.80	200	1	Clear, no odors
1259	4.44	2434.30	209.60	0.00	24.01	5.12	17.80	200		
1304										PAD Overheated, continue purging
1317	4.42	2440.50	224.90	0.00	23.98	4.89	17.80	200	4.5	
1322	4.42	2439.10	227.60	0.00	23.97	4.81	17.80	200	5.5	SAA
1327	4.42	2440.20	231.60	0.00	24.02	4.25	17.80	200	6.5	SAA
1332	4.41	2451.50	234.80	0.00	23.39	2.95	17.80	200	7.5	SAA
1337	4.41	2425.30	237.60	0.00	24.26	2.85	17.80	200	8.5	SAA
1342	4.41	2432.50	238.20	0.00	23.97	2.52	17.80	200	9.5	SAA
1347				COLLECT	SAMPLE					

R.D. M. 10/3/2018

Stabilizing Criteria	+/- 0.1 SU	+/- 5%	0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)	< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L
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• PAD overheated during sample collection, deleting electronic copy of purge log.

APPENDIX B
Statistical Analyses

Detection Monitoring Program Statistical
Analysis Package

Plant Hammond Ash Ponds 1 and 2

(AP-1 and AP-2)

June and October 2018 events

(AM 01 and AM 02)

Table B-1
Detection Monitoring Prediction Limit Comparison
Plant Hammond, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Jun 4-7, 2018	Oct 1-5, 2018
Boron (mg/L)	HGWC-7	0.059	-	0.86	0.98
Boron (mg/L)	HGWC-8	0.059	-	2.6	2.7
Boron (mg/L)	HGWC-9	0.059	-	2.3	2.5
Boron (mg/L)	HGWC-10	0.059	-	1.2	0.62
Boron (mg/L)	HGWC-11	0.059	-	1.3	0.91
Boron (mg/L)	HGWC-12	0.059	-	2.5	2.3
Boron (mg/L)	HGWC-13	0.059	-	1.3	1.6
Boron (mg/L)	HGWC-14	0.078	-	16.7	ND (16.4 J)
Boron (mg/L)	HGWC-15	0.078	-	2.4	ND (2.4 J)
Boron (mg/L)	HGWC-16	0.078	-	1.9	ND (1.7 J)
Boron (mg/L)	HGWC-17	0.078	-	6.3	ND (6.9 J)
Boron (mg/L)	HGWC-18	0.078	-	8.4	9.3
Calcium (mg/L)	HGWC-7	138	-	99.8	108
Calcium (mg/L)	HGWC-8	138	-	127	118
Calcium (mg/L)	HGWC-9	138	-	184	173
Calcium (mg/L)	HGWC-10	138	-	167	144
Calcium (mg/L)	HGWC-11	138	-	113	89.0
Calcium (mg/L)	HGWC-12	138	-	136	125
Calcium (mg/L)	HGWC-13	138	-	110	73.6
Calcium (mg/L)	HGWC-14	112	-	606	558
Calcium (mg/L)	HGWC-15	112	-	250	234
Calcium (mg/L)	HGWC-16	112	-	177	160
Calcium (mg/L)	HGWC-17	112	-	299	286
Calcium (mg/L)	HGWC-18	112	-	425	421
Chloride (mg/L)	HGWC-7	9.94	-	52.3	52.6
Chloride (mg/L)	HGWC-8	9.94	-	44.8	89.4
Chloride (mg/L)	HGWC-9	9.94	-	138	142
Chloride (mg/L)	HGWC-10	9.94	-	66.6	48.3
Chloride (mg/L)	HGWC-11	9.94	-	56.1	24.8
Chloride (mg/L)	HGWC-12	9.94	-	46.4	88.4
Chloride (mg/L)	HGWC-13	9.94	-	72.3	32.3
Chloride (mg/L)	HGWC-14	9.94	-	357	368
Chloride (mg/L)	HGWC-15	9.94	-	196	200
Chloride (mg/L)	HGWC-16	9.94	-	50.6	49.9
Chloride (mg/L)	HGWC-17	9.94	-	166	193
Chloride (mg/L)	HGWC-18	9.94	-	261	302
Fluoride (mg/L)	HGWC-7	0.372	-	ND (0.099 J)	ND
Fluoride (mg/L)	HGWC-8	0.372	-	0.46	0.51
Fluoride (mg/L)	HGWC-9	0.372	-	ND (0.12 J)	ND (0.031 J)
Fluoride (mg/L)	HGWC-10	0.372	-	ND	ND (0.17 J)
Fluoride (mg/L)	HGWC-11	0.372	-	ND (0.24 J)	0.31
Fluoride (mg/L)	HGWC-12	0.372	-	ND (0.21 J)	ND (0.15 J)
Fluoride (mg/L)	HGWC-13	0.372	-	0.47	0.77
Fluoride (mg/L)	HGWC-14	0.182	-	ND (0.25 J)	ND (0.21 J)
Fluoride (mg/L)	HGWC-15	0.182	-	ND (0.17 J)	ND
Fluoride (mg/L)	HGWC-16	0.182	-	ND	ND
Fluoride (mg/L)	HGWC-17	0.182	-	ND (0.23 J)	ND
Fluoride (mg/L)	HGWC-18	0.182	-	0.66	0.32

Table B-1
 Detection Monitoring Prediction Limit Comparison
 Plant Hammond, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Jun 4-7, 2018	Oct 1-5, 2018
pH (s.u.)	HGWC-7	7.5	4.9	7.1	7.1
pH (s.u.)	HGWC-8	7.5	4.9	6.9	6.9
pH (s.u.)	HGWC-9	7.5	4.9	7.0	7.1
pH (s.u.)	HGWC-10	7.5	4.9	6.7	6.6
pH (s.u.)	HGWC-11	7.5	4.9	6.3	6.0
pH (s.u.)	HGWC-12	7.5	4.9	7.1	7.1
pH (s.u.)	HGWC-13	7.5	4.9	7.2	7.2
pH (s.u.)	HGWC-14	7.9	5.3	4.5	4.7
pH (s.u.)	HGWC-15	7.9	5.3	6.1	5.9
pH (s.u.)	HGWC-16	7.9	5.3	7.0	6.9
pH (s.u.)	HGWC-17	7.9	5.3	6.2	6.2
pH (s.u.)	HGWC-18	7.9	5.3	4.6	4.4
Sulfate (mg/L)	HGWC-7	77.0	-	117	120
Sulfate (mg/L)	HGWC-8	77.0	-	ND (190 J)	193
Sulfate (mg/L)	HGWC-9	77.0	-	ND (214 J)	218
Sulfate (mg/L)	HGWC-10	77.0	-	205	178
Sulfate (mg/L)	HGWC-11	77.0	-	204	233
Sulfate (mg/L)	HGWC-12	77.0	-	162	191
Sulfate (mg/L)	HGWC-13	77.0	-	187	78.3
Sulfate (mg/L)	HGWC-14	77.0	-	ND (1520 J)	1550
Sulfate (mg/L)	HGWC-15	77.0	-	ND (469 J)	600
Sulfate (mg/L)	HGWC-16	77.0	-	233	215
Sulfate (mg/L)	HGWC-17	77.0	-	ND (520 J)	651
Sulfate (mg/L)	HGWC-18	77.0	-	962	1170
TDS (mg/L)	HGWC-7	464	-	459	426
TDS (mg/L)	HGWC-8	464	-	611	597
TDS (mg/L)	HGWC-9	464	-	810	693
TDS (mg/L)	HGWC-10	464	-	679	572
TDS (mg/L)	HGWC-11	464	-	489	449
TDS (mg/L)	HGWC-12	464	-	535	607
TDS (mg/L)	HGWC-13	464	-	528	322
TDS (mg/L)	HGWC-14	395	-	2620	2430
TDS (mg/L)	HGWC-15	395	-	1120	1140
TDS (mg/L)	HGWC-16	395	-	678	700
TDS (mg/L)	HGWC-17	395	-	1180	1250
TDS (mg/L)	HGWC-18	395	-	1880	2180

Notes:

- = Not applicable

J = Indicates that analyte was estimated and detected between the laboratory Method Detection Limit (MDL) and Reporting Limit (RL).

mg/L = milligrams per liter

ND = Indicates the parameter was not detected above the laboratory MDL.

PL = Prediction Limit

s.u. = standard unit

TDS = Total Dissolved Solids

(1) Shaded values indicate an exceedance of the statistically derived PL.

(2) The pH value presented was recorded at the time of sample collection in the field. This is the only parameter in which the field result is compared to both the upper and lower PL.

(3) Due to the uncertainty associated with estimated values, J qualified results are not considered when evaluating PL exceedances.

Assessment Monitoring Program
Statistical Analysis Package
Plant Hammond Ash Ponds 1 and 2
(AP-1 and AP-2)

June 2018 event (AM 01)

AP-1

EPD Based Groundwater Protection
Standards Statistical Analysis Package

AM 01

Table B-2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia
AM 01

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.131	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	N/A	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.2589	4
Lead ²	7439-92-1	mg/L	N/A	0.005	0.005
Lithium ²	7439-93-2	mg/L	N/A	0.05	0.05
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.4	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Constituent without established EPA MCL.

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:09 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	27	96.3	n/a	0.2503	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	30	66.67	n/a	0.2146	NP Inter(NDs)
Barium (mg/L)	n/a	0.131	n/a	n/a	n/a	30	0	n/a	0.2146	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	27	77.78	n/a	0.2503	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	30	86.67	n/a	0.2146	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	27	92.59	n/a	0.2503	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	30	63.33	n/a	0.2146	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2589	n/a	n/a	n/a	33	27.27	sqrt(x)	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	27	85.19	n/a	0.2503	NP Inter(NDs)
Lithium (mg/L)	n/a	0.05	n/a	n/a	n/a	30	53.33	n/a	0.2146	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	27	100	n/a	0.2503	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	30	100	n/a	0.2146	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	30	100	n/a	0.2146	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	30	96.67	n/a	0.2146	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.4	n/a	n/a	n/a	30	96.67	n/a	0.2146	NP Inter(NDs)

Summary of Confidence Intervals - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:18 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	HGWC-13	0.4263	0.3197	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-11	0.03087	0.01625	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.05112	0.0445	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03974	0.02892	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03557	0.02905	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5103	0.4519	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-9	0.027	0.0187	0.01	Yes	10	0	No	0.011	NP (normality)

Summary of Confidence Intervals - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:18 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-10	0.0025	0.0025	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0025	0.0012	0.01	No	10	70	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004911	0.002646	0.01	No	10	20	No	0.01	Param.
Arsenic (mg/L)	HGWC-13	0.4263	0.3197	0.01	Yes	10	0	No	0.01	Param.
Arsenic (mg/L)	HGWC-7	0.0025	0.0025	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.0025	0.0025	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.0025	0.0008	0.01	No	10	90	No	0.011	NP (NDs)
Barium (mg/L)	HGWC-10	0.104	0.07744	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.07516	0.03548	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1343	0.1005	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.1001	0.06525	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07619	0.07101	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08455	0.07222	2	No	10	0	x^3	0.01	Param.
Barium (mg/L)	HGWC-9	0.1345	0.1028	2	No	10	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-10	0.3866	0.1237	4	No	11	27.27	No	0.01	Param.
Fluoride (mg/L)	HGWC-11	0.5595	0.2756	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.5218	0.1915	4	No	11	18.18	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.7999	0.4308	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.3255	0.1021	4	No	11	9.091	No	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.8305	0.4693	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.4297	0.1462	4	No	11	18.18	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.025	0.025	0.05	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-11	0.025	0.025	0.05	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-12	0.0126	0.009077	0.05	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.04249	0.03215	0.05	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.0026	0.0021	0.05	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0023	0.05	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-9	0.005	0.0027	0.05	No	10	10	No	0.011	NP (normality)
Molybdenum (mg/L)	HGWC-10	0.005	0.0013	0.01	No	10	70	No	0.011	NP (NDs)
Molybdenum (mg/L)	HGWC-11	0.03087	0.01625	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.05112	0.0445	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03974	0.02892	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03557	0.02905	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5103	0.4519	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-9	0.027	0.0187	0.01	Yes	10	0	No	0.011	NP (normality)
Selenium (mg/L)	HGWC-10	0.005	0.0041	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01628	0.00154	0.05	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.005	0.0011	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-13	0.005	0.005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-7	0.005	0.005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-8	0.005	0.0024	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-9	0.005	0.0037	0.05	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-11	0.0005	0.00008	0.002	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-12	0.0005	0.00009	0.002	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004536	0.000336	0.002	No	10	10	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-8	0.0005	0.00008	0.002	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-10	0.745	0.745	5	No	10	100	No	0.011	NP (NDs)

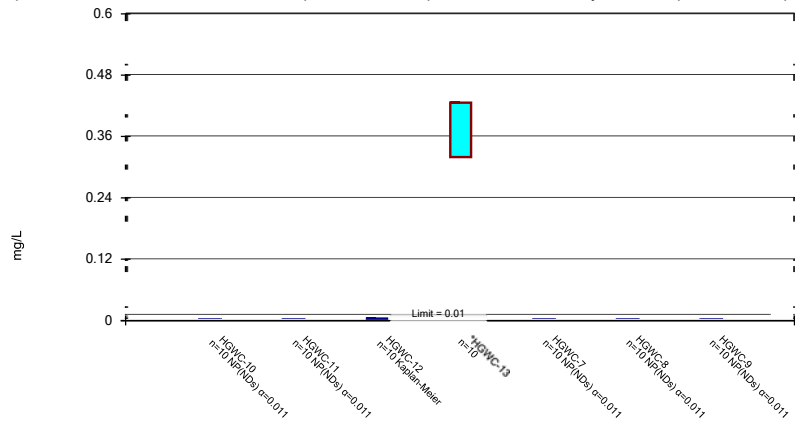
Summary of Confidence Intervals - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:18 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Radium (pCi/L)	HGWC-11	0.745	0.745	5	No	10	90	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-12	1.01	0.745	5	No	10	80	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-13	0.745	0.745	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-7	0.745	0.745	5	No	10	90	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-8	0.745	0.745	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-9	0.745	0.745	5	No	10	90	No	0.011	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

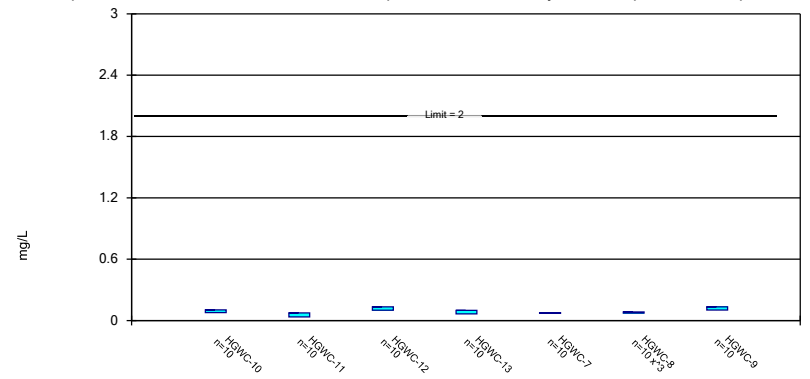
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

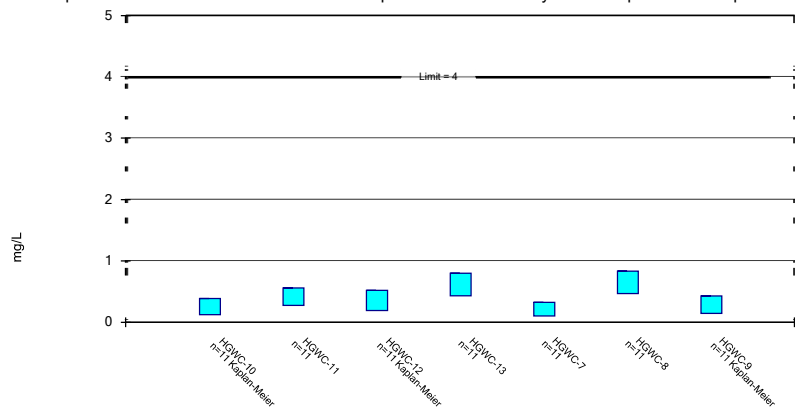
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

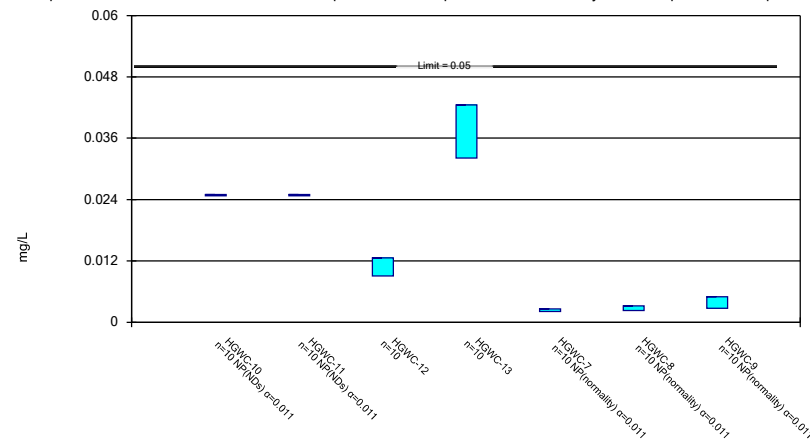
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 10/15/2018 8:18 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
Mean	0.0025	0.00255	0.00373	0.373	0.0025	0.0025	0.00233
Std. Dev.	0	0.00108	0.001277	0.05972	0	0	0.0005376
Upper Lim.	0.0025	0.0025	0.004911	0.4263	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0012	0.002646	0.3197	0.0025	0.0025	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 10/15/2018 8:18 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811 (J)	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722 (J)	0.0791 (J)	
3/22/2017	0.0962 (J)	0.0346 (J)	0.112 (J)	0.0755 (J)			0.122 (J)
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075 (J)	0.065 (J)	0.1 (J)
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
Mean	0.09073	0.05532	0.1174	0.08266	0.0736	0.0782	0.1187
Std. Dev.	0.0149	0.02224	0.01897	0.01951	0.002908	0.007797	0.01778
Upper Lim.	0.104	0.07516	0.1343	0.1001	0.07619	0.08455	0.1345
Lower Lim.	0.07744	0.03548	0.1005	0.06525	0.07101	0.07222	0.1028

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 10/15/2018 8:18 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5 (J)	0.67 (J)	0.62 (J)	0.74 (J)	0.51 (J)	0.94 (J)	0.46 (J)
10/20/2016					0.4 (J)	0.56 (J)	0.56 (J)
10/24/2016	<0.3 (*)	0.26 (J)	<0.3 (*)	0.31 (J)			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44 (J)	0.55 (J)	0.73 (J)	1 (J)			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68 (J)			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
Mean	0.2545	0.4175	0.3511	0.6153	0.2138	0.6499	0.2813
Std. Dev.	0.1584	0.1704	0.2125	0.2214	0.134	0.2168	0.1765
Upper Lim.	0.3866	0.5595	0.5218	0.7999	0.3255	0.8305	0.4297
Lower Lim.	0.1237	0.2756	0.1915	0.4308	0.1021	0.4693	0.1462

Confidence Interval

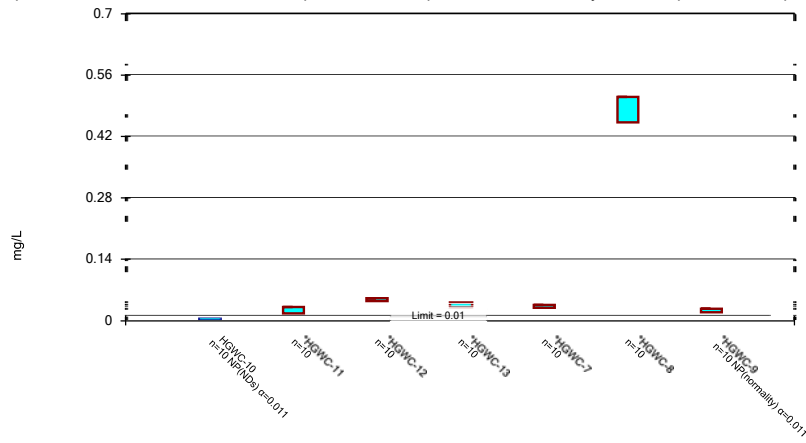
Constituent: Lithium (mg/L) Analysis Run 10/15/2018 8:18 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.05	<0.05	
5/23/2016	<0.05	<0.05	0.0107 (J)	0.0422 (J)			<0.05
7/12/2016	<0.05	<0.05	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.05	<0.05	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.05	<0.05	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.05	<0.05	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.05	<0.05	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.05	<0.05	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.05	<0.05	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.05	<0.05	0.008 (J)	0.031 (J)			
6/5/2018	<0.05	<0.05		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
Mean	0.025	0.025	0.01084	0.03732	0.00464	0.00493	0.0063
Std. Dev.	0	0	0.001976	0.0058	0.007157	0.007058	0.006599
Upper Lim.	0.025	0.025	0.0126	0.04249	0.0026	0.0032	0.005
Lower Lim.	0.025	0.025	0.009077	0.03215	0.0021	0.0023	0.0027

Parametric and Non-Parametric (NP) Confidence Interval

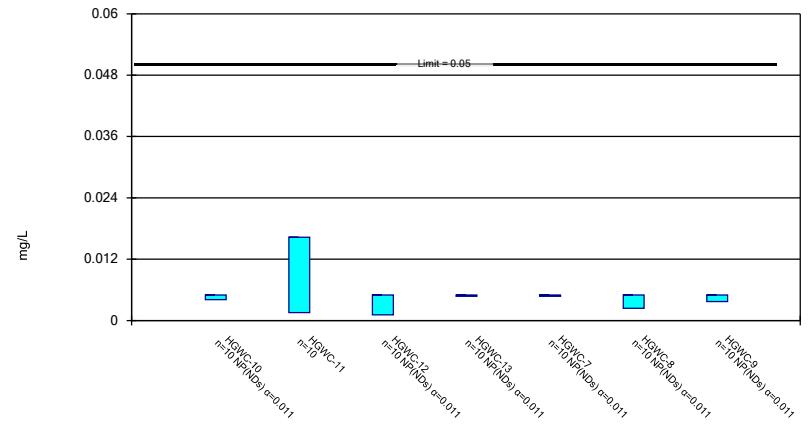
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

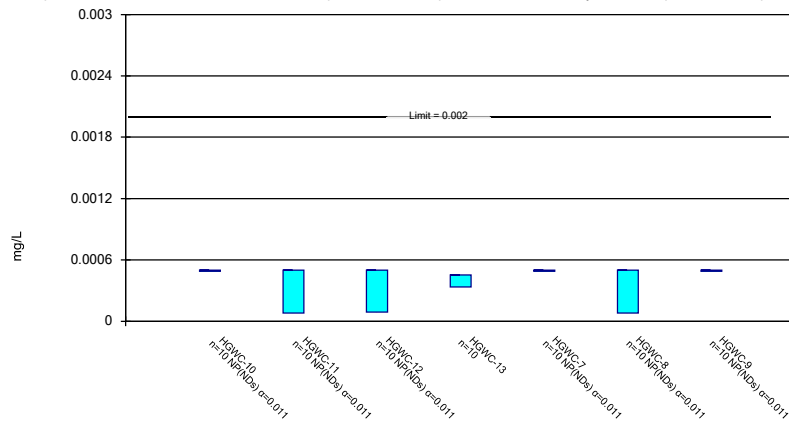
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

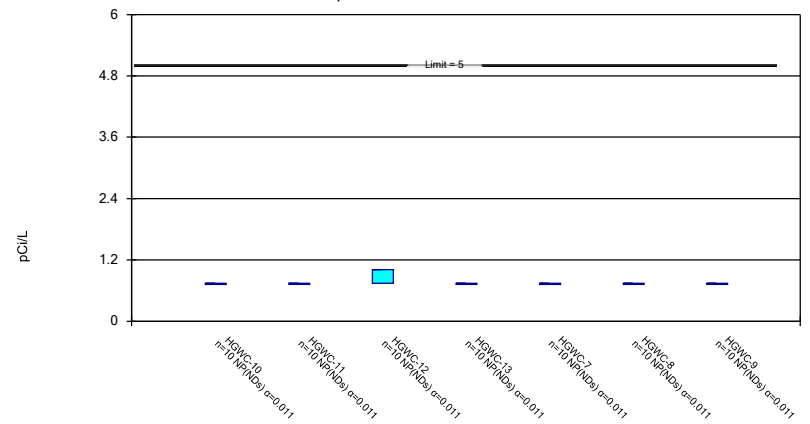
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Total Radium Analysis Run 10/15/2018 8:17 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 10/15/2018 8:18 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472 (J)	0.477
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
Mean	0.0039	0.02356	0.04781	0.03433	0.03231	0.4811	0.06876
Std. Dev.	0.001771	0.008192	0.003715	0.006062	0.003651	0.03271	0.1435
Upper Lim.	0.005	0.03087	0.05112	0.03974	0.03557	0.5103	0.027
Lower Lim.	0.0013	0.01625	0.0445	0.02892	0.02905	0.4519	0.0187

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 10/15/2018 8:18 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
Mean	0.00491	0.00891	0.00461	0.005	0.005	0.00474	0.00487
Std. Dev.	0.0002846	0.008261	0.001233	0	0	0.0008222	0.0004111
Upper Lim.	0.005	0.01628	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0041	0.00154	0.0011	0.005	0.005	0.0024	0.0037

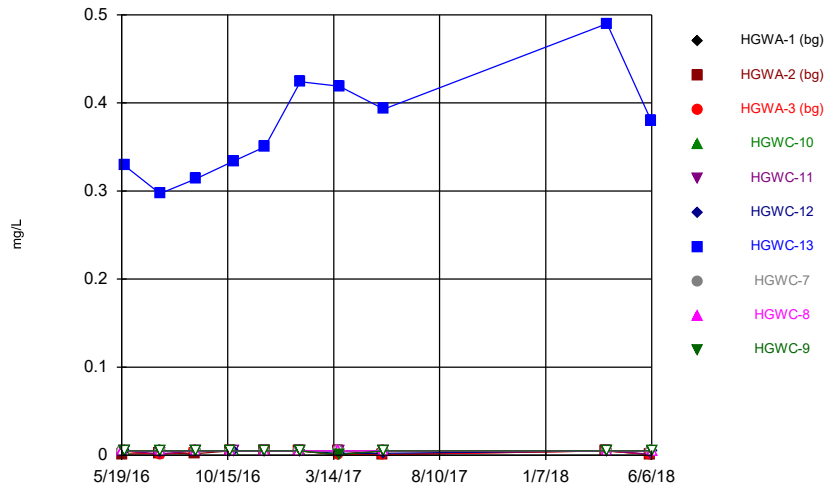
Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 10/15/2018 8:18 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

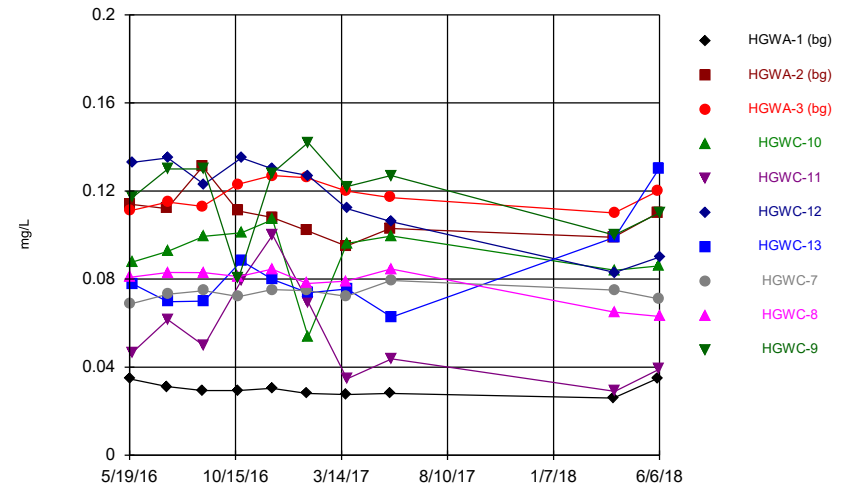
	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	<0.001 (*)	<0.001 (*)	<0.001 (*)	<0.001	<0.001 (*)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
Mean	0.0005	0.000458	0.000419	0.0003948	0.0005	0.000417	0.0005
Std. Dev.	0	0.0001328	0.0001708	6.592E-05	0	0.000175	0
Upper Lim.	0.0005	0.0005	0.0005	0.0004536	0.0005	0.0005	0.0005
Lower Lim.	0.0005	8E-05	9E-05	0.000336	0.0005	8E-05	0.0005

Time Series



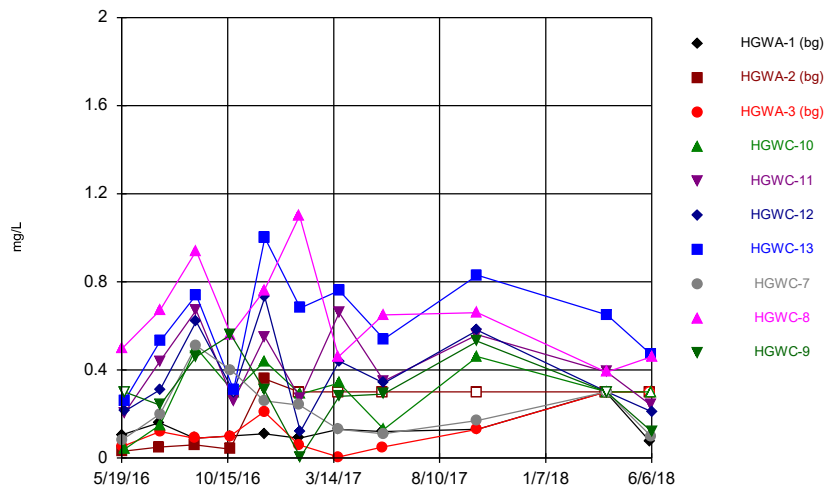
Constituent: Arsenic Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



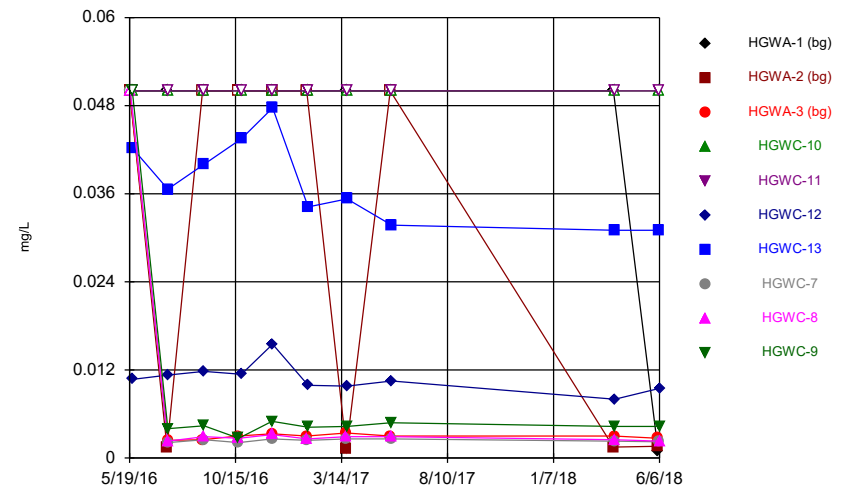
Constituent: Barium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



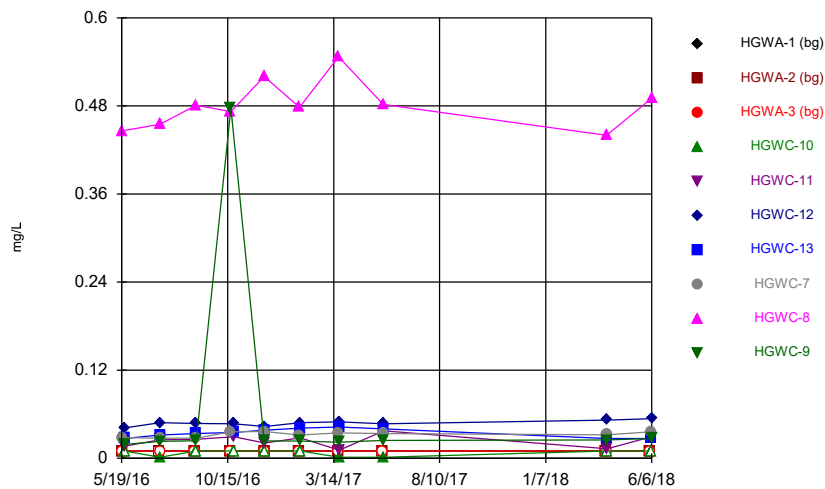
Constituent: Fluoride Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



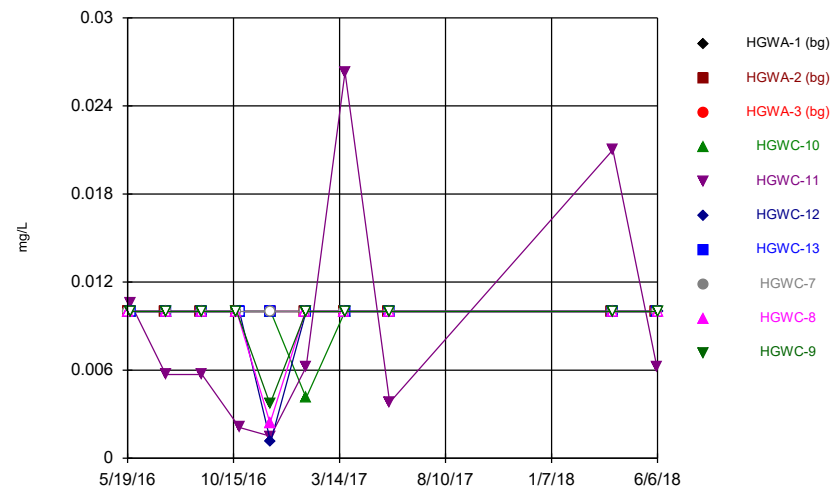
Constituent: Lithium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



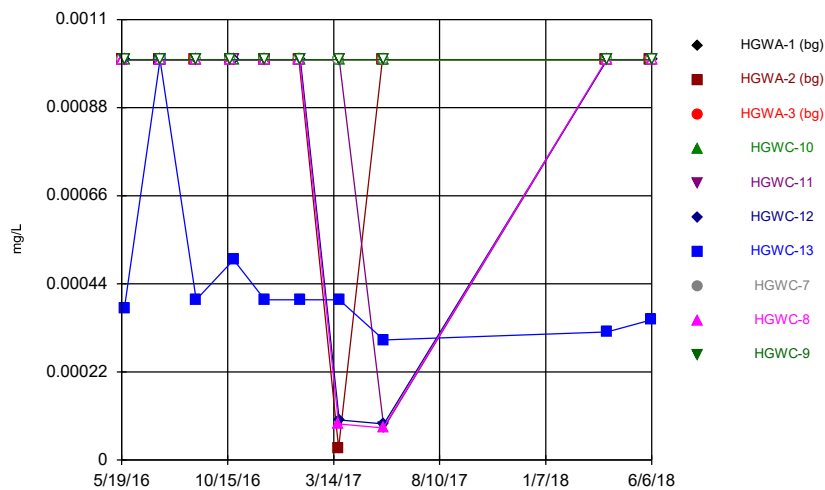
Constituent: Molybdenum Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



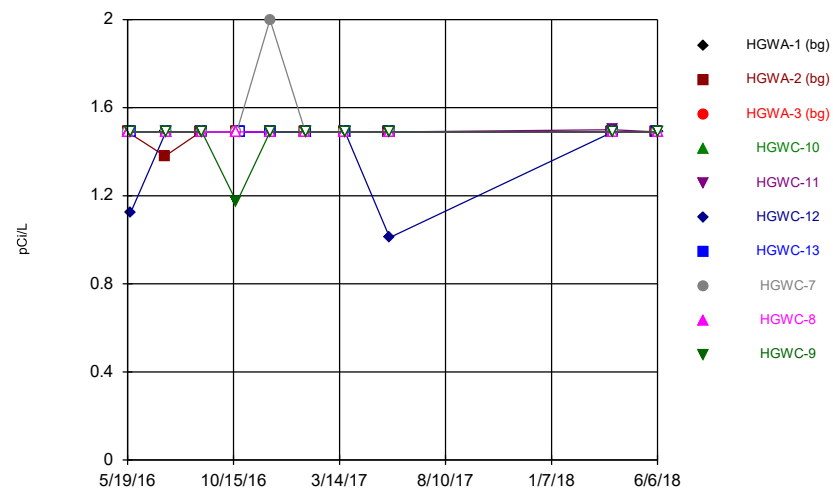
Constituent: Selenium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



Constituent: Thallium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



Constituent: Total Radium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

USEPA Based Groundwater Protection
Standards Statistical Analysis Package

AM 01

Table B-2
USEPA Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia
AM 01

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS ¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.131	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	0.006	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.2589	4
Lead ³	7439-92-1	mg/L	0.015	0.005	0.015
Lithium ²	7439-93-2	mg/L	0.04	0.025	0.04
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.4	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Regional Screening Level applied for constituent per CCR Rule Amendment, July 30, 2018.

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

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:29 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	27	96.3	n/a	0.2503	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	30	66.67	n/a	0.2146	NP Inter(NDs)
Barium (mg/L)	n/a	0.131	n/a	n/a	n/a	30	0	n/a	0.2146	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	27	77.78	n/a	0.2503	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	30	86.67	n/a	0.2146	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	27	92.59	n/a	0.2503	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	30	63.33	n/a	0.2146	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2589	n/a	n/a	n/a	33	27.27	sqrt(x)	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	27	85.19	n/a	0.2503	NP Inter(NDs)
Lithium (mg/L)	n/a	0.025	n/a	n/a	n/a	30	53.33	n/a	0.2146	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	27	100	n/a	0.2503	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	30	100	n/a	0.2146	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	30	100	n/a	0.2146	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	30	96.67	n/a	0.2146	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.4	n/a	n/a	n/a	30	96.67	n/a	0.2146	NP Inter(NDs)

Summary of Confidence Intervals - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:33 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	HGWC-13	0.4263	0.3197	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5103	0.4519	0.1	Yes	10	0	No	0.01	Param.

Summary of Confidence Intervals - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:33 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-10	0.0025	0.0025	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0025	0.0012	0.01	No	10	70	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004911	0.002646	0.01	No	10	20	No	0.01	Param.
Arsenic (mg/L)	HGWC-13	0.4263	0.3197	0.01	Yes	10	0	No	0.01	Param.
Arsenic (mg/L)	HGWC-7	0.0025	0.0025	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.0025	0.0025	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.0025	0.0008	0.01	No	10	90	No	0.011	NP (NDs)
Barium (mg/L)	HGWC-10	0.104	0.07744	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.07516	0.03548	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1343	0.1005	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.1001	0.06525	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07619	0.07101	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08455	0.07222	2	No	10	0	x^3	0.01	Param.
Barium (mg/L)	HGWC-9	0.1345	0.1028	2	No	10	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-10	0.3866	0.1237	4	No	11	27.27	No	0.01	Param.
Fluoride (mg/L)	HGWC-11	0.5595	0.2756	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.5218	0.1915	4	No	11	18.18	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.7999	0.4308	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.3255	0.1021	4	No	11	9.091	No	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.8305	0.4693	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.4297	0.1462	4	No	11	18.18	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.0125	0.0125	0.04	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-11	0.0125	0.0125	0.04	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-12	0.0126	0.009077	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.04249	0.03215	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.0026	0.0021	0.04	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0023	0.04	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-9	0.005	0.0027	0.04	No	10	10	No	0.011	NP (normality)
Molybdenum (mg/L)	HGWC-10	0.005	0.0013	0.1	No	10	70	No	0.011	NP (NDs)
Molybdenum (mg/L)	HGWC-11	0.03087	0.01625	0.1	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.05112	0.0445	0.1	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03974	0.02892	0.1	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03557	0.02905	0.1	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5103	0.4519	0.1	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-9	0.027	0.0187	0.1	No	10	0	No	0.011	NP (normality)
Selenium (mg/L)	HGWC-10	0.005	0.0041	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01628	0.00154	0.05	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.005	0.0011	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-13	0.005	0.005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-7	0.005	0.005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-8	0.005	0.0024	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-9	0.005	0.0037	0.05	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-11	0.0005	0.00008	0.002	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-12	0.0005	0.00009	0.002	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004536	0.000336	0.002	No	10	10	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-8	0.0005	0.00008	0.002	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-10	0.745	0.745	5	No	10	100	No	0.011	NP (NDs)

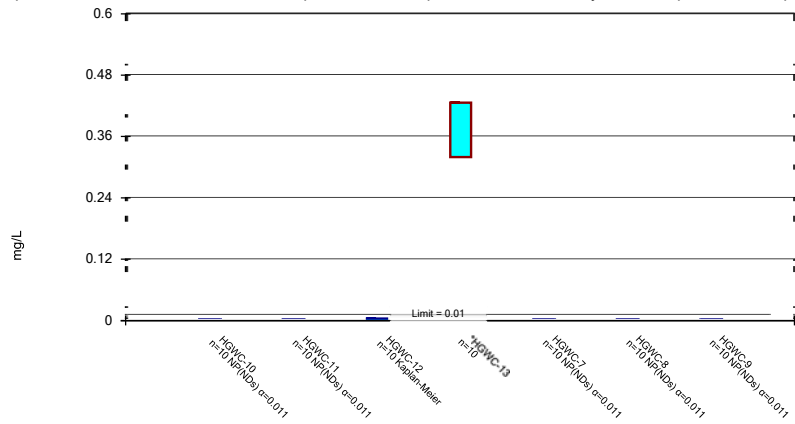
Summary of Confidence Intervals - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 10/15/2018, 8:33 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Radium (pCi/L)	HGWC-11	0.745	0.745	5	No	10	90	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-12	1.01	0.745	5	No	10	80	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-13	0.745	0.745	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-7	0.745	0.745	5	No	10	90	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-8	0.745	0.745	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-9	0.745	0.745	5	No	10	90	No	0.011	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

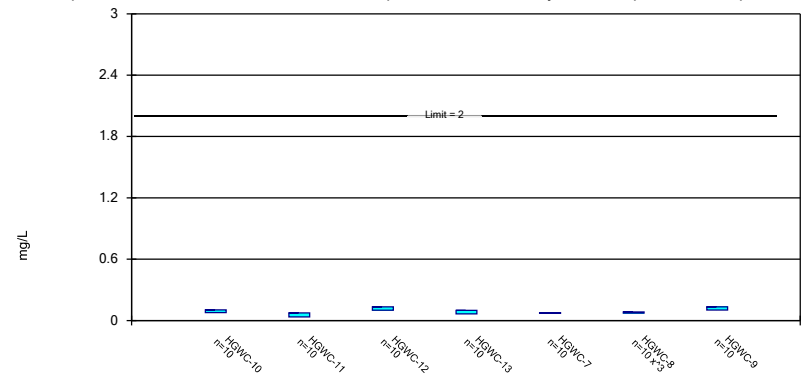
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

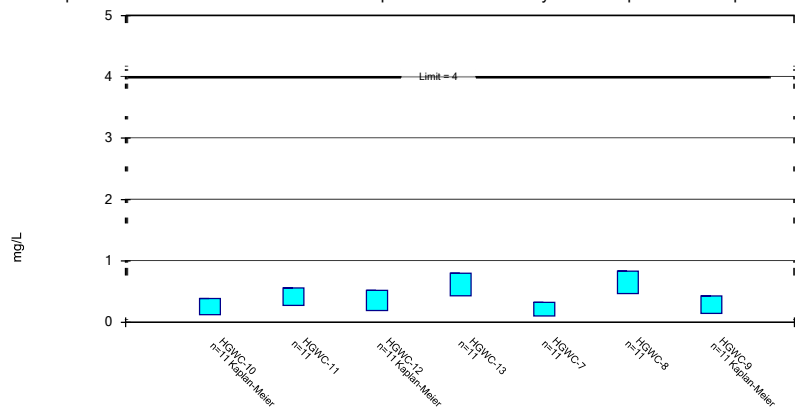
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

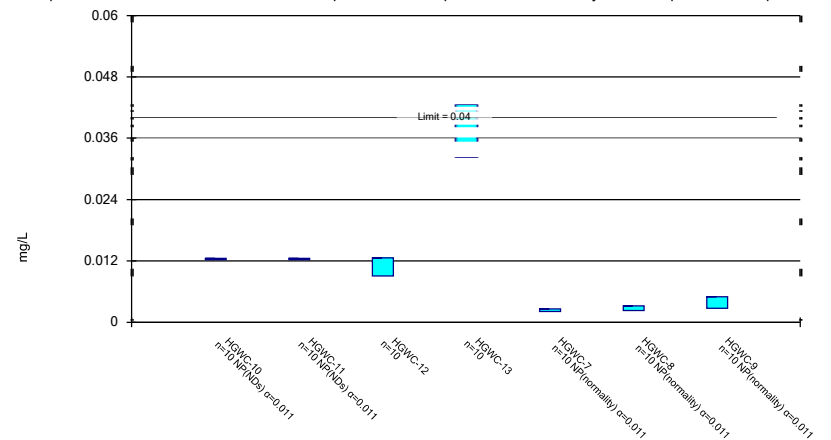
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 10/15/2018 8:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
Mean	0.0025	0.00255	0.00373	0.373	0.0025	0.0025	0.00233
Std. Dev.	0	0.00108	0.001277	0.05972	0	0	0.0005376
Upper Lim.	0.0025	0.0025	0.004911	0.4263	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0012	0.002646	0.3197	0.0025	0.0025	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 10/15/2018 8:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811 (J)	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722 (J)	0.0791 (J)	
3/22/2017	0.0962 (J)	0.0346 (J)	0.112 (J)	0.0755 (J)			0.122 (J)
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075 (J)	0.065 (J)	0.1 (J)
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
Mean	0.09073	0.05532	0.1174	0.08266	0.0736	0.0782	0.1187
Std. Dev.	0.0149	0.02224	0.01897	0.01951	0.002908	0.007797	0.01778
Upper Lim.	0.104	0.07516	0.1343	0.1001	0.07619	0.08455	0.1345
Lower Lim.	0.07744	0.03548	0.1005	0.06525	0.07101	0.07222	0.1028

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 10/15/2018 8:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5 (J)	0.67 (J)	0.62 (J)	0.74 (J)	0.51 (J)	0.94 (J)	0.46 (J)
10/20/2016					0.4 (J)	0.56 (J)	0.56 (J)
10/24/2016	<0.3 (*)	0.26 (J)	<0.3 (*)	0.31 (J)			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44 (J)	0.55 (J)	0.73 (J)	1 (J)			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68 (J)			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
Mean	0.2545	0.4175	0.3511	0.6153	0.2138	0.6499	0.2813
Std. Dev.	0.1584	0.1704	0.2125	0.2214	0.134	0.2168	0.1765
Upper Lim.	0.3866	0.5595	0.5218	0.7999	0.3255	0.8305	0.4297
Lower Lim.	0.1237	0.2756	0.1915	0.4308	0.1021	0.4693	0.1462

Confidence Interval

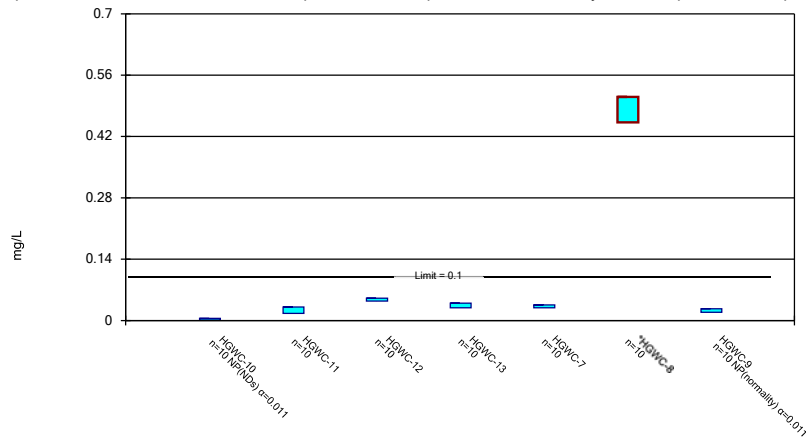
Constituent: Lithium (mg/L) Analysis Run 10/15/2018 8:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.025	<0.025	
5/23/2016	<0.025	<0.025	0.0107 (J)	0.0422 (J)			<0.025
7/12/2016	<0.025	<0.025	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.025	<0.025	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.025	<0.025	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.025	<0.025	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.025	<0.025	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.025	<0.025	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.025	<0.025	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.025	<0.025	0.008 (J)	0.031 (J)			
6/5/2018	<0.025	<0.025		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
Mean	0.0125	0.0125	0.01084	0.03732	0.00339	0.00368	0.00505
Std. Dev.	0	0	0.001976	0.0058	0.003207	0.003112	0.002688
Upper Lim.	0.0125	0.0125	0.0126	0.04249	0.0026	0.0032	0.005
Lower Lim.	0.0125	0.0125	0.009077	0.03215	0.0021	0.0023	0.0027

Parametric and Non-Parametric (NP) Confidence Interval

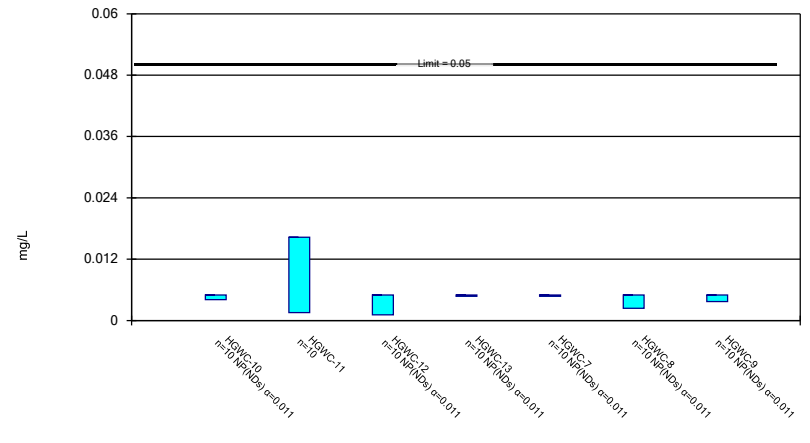
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

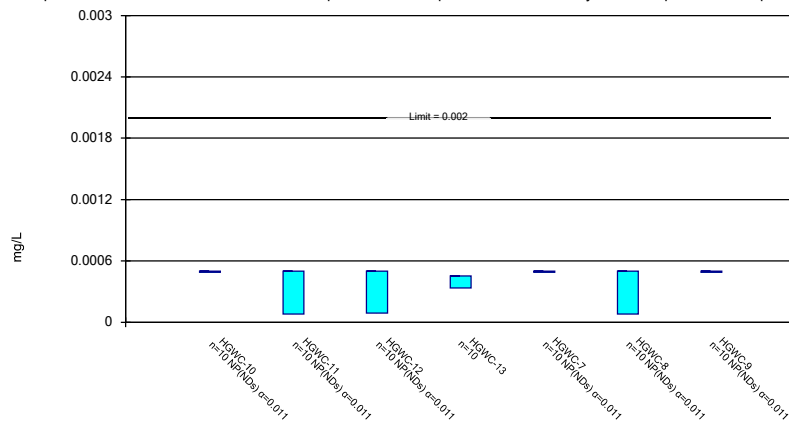
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

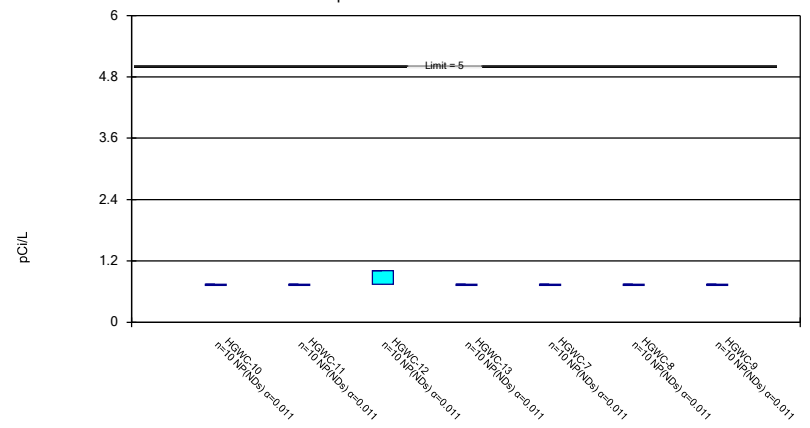
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Total Radium Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 10/15/2018 8:33 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472 (J)	0.477
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
Mean	0.0039	0.02356	0.04781	0.03433	0.03231	0.4811	0.06876
Std. Dev.	0.001771	0.008192	0.003715	0.006062	0.003651	0.03271	0.1435
Upper Lim.	0.005	0.03087	0.05112	0.03974	0.03557	0.5103	0.027
Lower Lim.	0.0013	0.01625	0.0445	0.02892	0.02905	0.4519	0.0187

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 10/15/2018 8:33 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
Mean	0.00491	0.00891	0.00461	0.005	0.005	0.00474	0.00487
Std. Dev.	0.0002846	0.008261	0.001233	0	0	0.0008222	0.0004111
Upper Lim.	0.005	0.01628	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0041	0.00154	0.0011	0.005	0.005	0.0024	0.0037

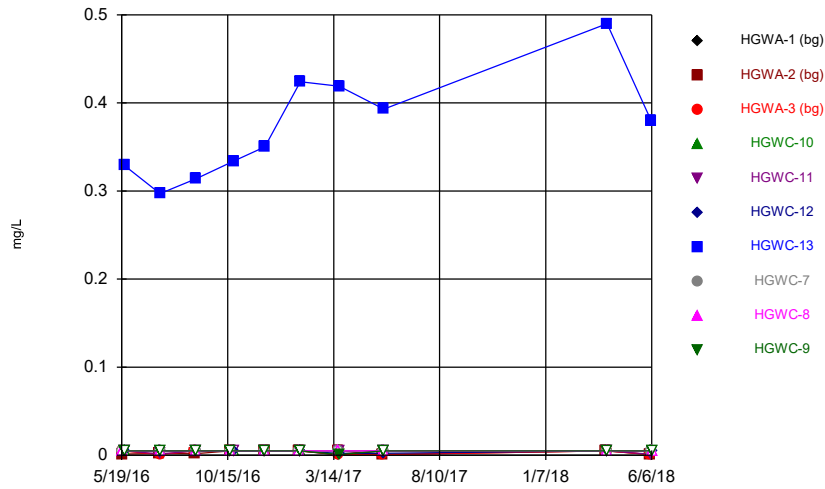
Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 10/15/2018 8:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

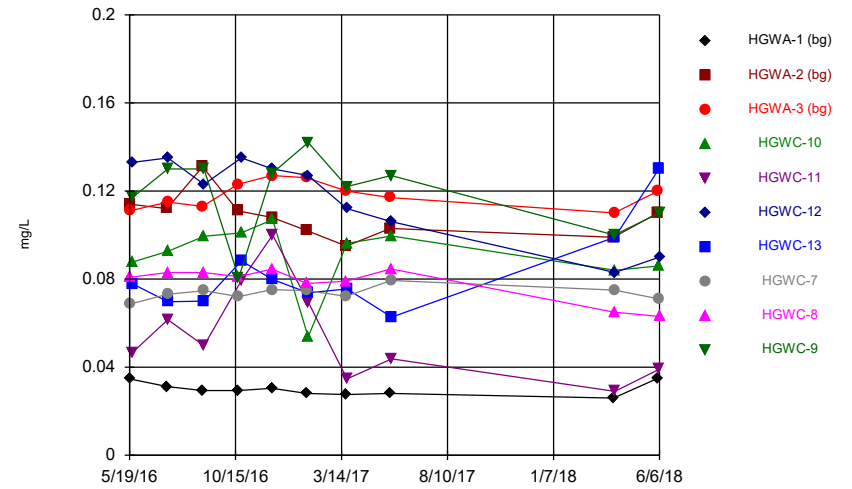
	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	<0.001 (*)	<0.001 (*)	<0.001 (*)	<0.001	<0.001 (*)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
Mean	0.0005	0.000458	0.000419	0.0003948	0.0005	0.000417	0.0005
Std. Dev.	0	0.0001328	0.0001708	6.592E-05	0	0.000175	0
Upper Lim.	0.0005	0.0005	0.0005	0.0004536	0.0005	0.0005	0.0005
Lower Lim.	0.0005	8E-05	9E-05	0.000336	0.0005	8E-05	0.0005

Time Series



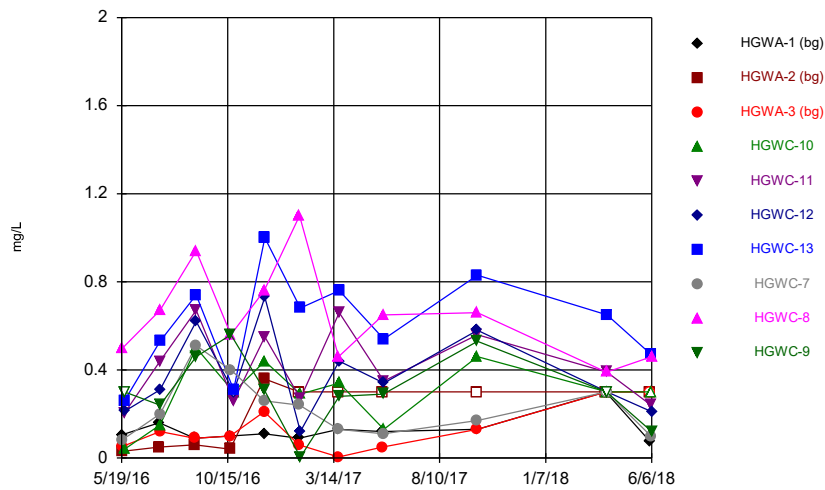
Constituent: Arsenic Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



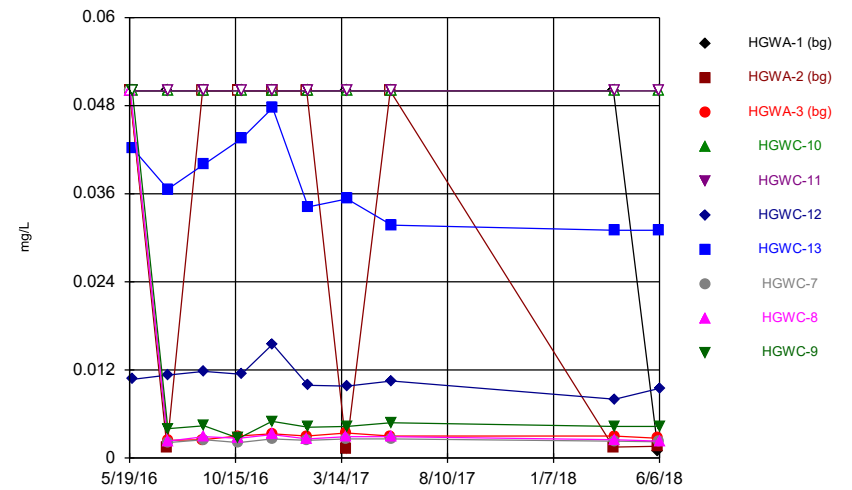
Constituent: Barium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



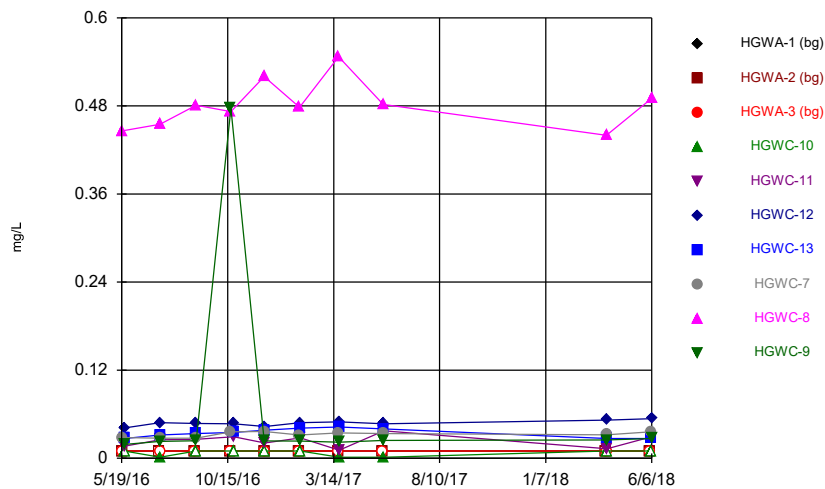
Constituent: Fluoride Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series

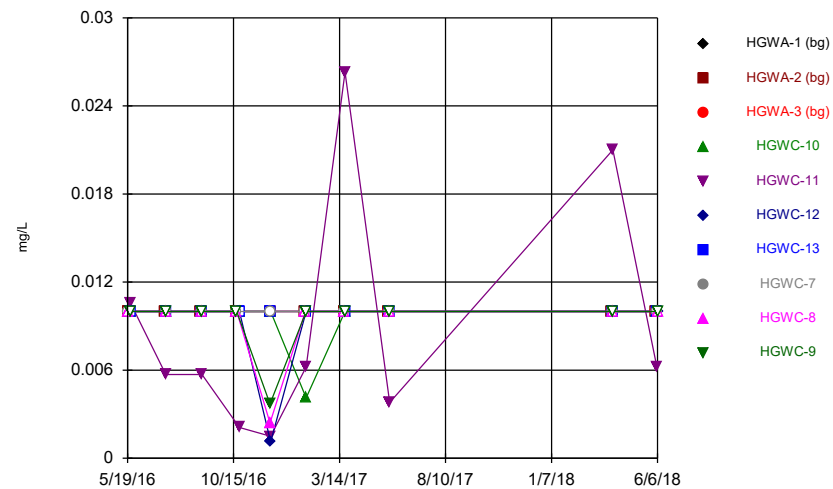


Constituent: Lithium Analysis Run 10/15/2018 8:21 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

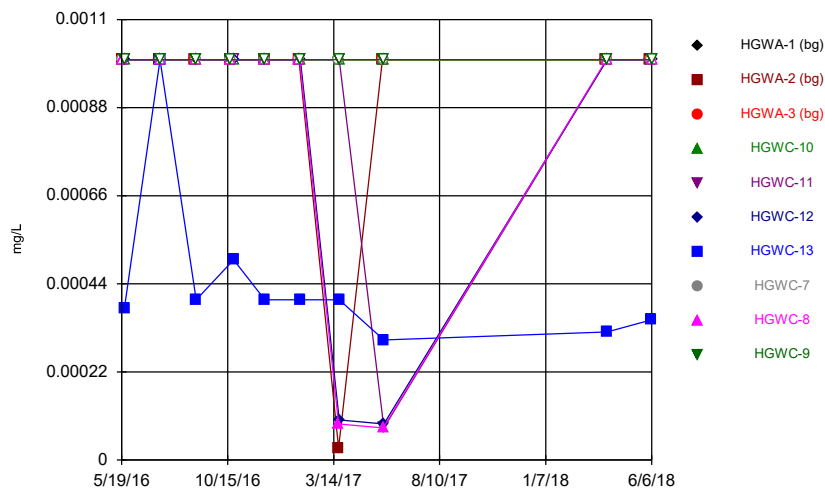
Time Series



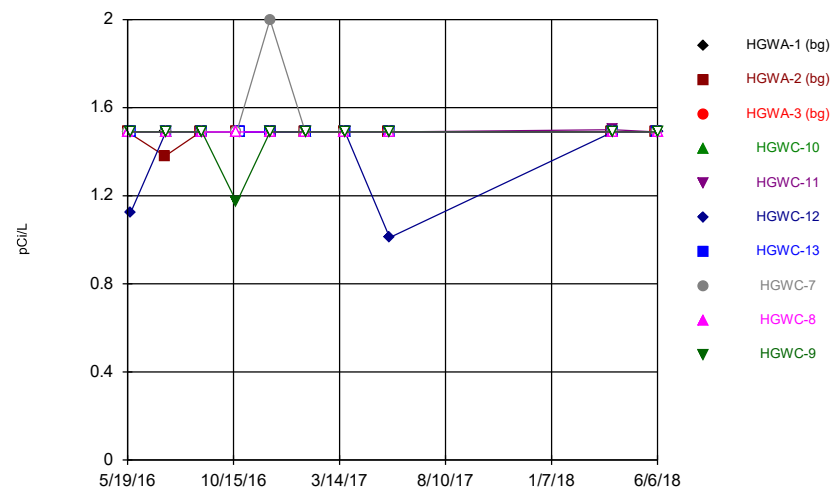
Time Series



Time Series



Time Series



AP-2

EPD Based Groundwater Protection
Standards Statistical Analysis Package

AM 01

Table B-2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 2
Floyd County, Georgia
AM 01

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS ¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.212	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	N/A	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead ²	7439-92-1	mg/L	N/A	0.005	0.005
Lithium ²	7439-93-2	mg/L	N/A	0.05	0.05
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	2.42	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Constituent without established EPA MCL.

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 10/15/2018, 8:46 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	54	96.3	n/a	0.06267	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	60	83.33	n/a	0.04607	NP Inter(NDs)
Barium (mg/L)	n/a	0.212	n/a	n/a	n/a	60	0	n/a	0.04607	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	54	88.89	n/a	0.06267	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	60	93.33	n/a	0.04607	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	54	92.59	n/a	0.06267	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	60	70	n/a	0.04607	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	66	27.27	n/a	0.03387	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	54	85.19	n/a	0.06267	NP Inter(NDs)
Lithium (mg/L)	n/a	0.05	n/a	n/a	n/a	60	38.33	n/a	0.04607	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	54	94.44	n/a	0.06267	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	57	96.49	n/a	0.05373	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	60	98.33	n/a	0.04607	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	60	98.33	n/a	0.04607	NP Inter(NDs)
Total Radium (pCi/L)	n/a	2.42	n/a	n/a	n/a	60	91.67	n/a	0.04607	NP Inter(NDs)

Summary of Confidence Intervals - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 10/15/2018, 8:52 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-15	0.0579	0.03622	0.0293	Yes	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2073	0.1765	0.0293	Yes	10	0	No	0.01	Param.

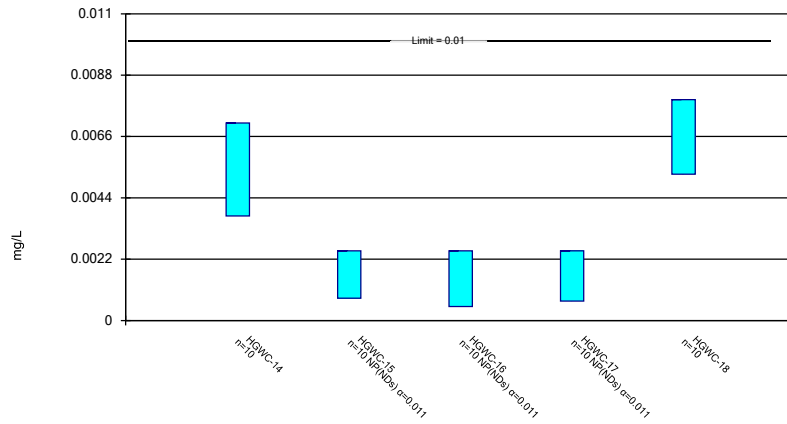
Summary of Confidence Intervals - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 10/15/2018, 8:52 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	HGWC-14	0.007085	0.003751	0.01	No	10	10	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.0025	0.0008	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.0025	0.0005	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.0025	0.0007	0.01	No	10	70	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.007918	0.00525	0.01	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0244	0.0208	2	No	10	10	No	0.011	NP (normality)
Barium (mg/L)	HGWC-15	0.03502	0.02472	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1074	0.09182	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.02556	0.02212	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-18	0.0349	0.028	2	No	10	10	No	0.011	NP (normality)
Cadmium (mg/L)	HGWC-14	0.0001512	0.00009637	0.005	No	10	30	x^(1/3)	0.01	Param.
Cadmium (mg/L)	HGWC-15	0.002851	0.001471	0.005	No	10	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0005	0.0005	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0005	0.00007	0.005	No	10	90	No	0.011	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002558	0.001959	0.005	No	10	10	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-14	0.02962	0.02059	0.0293	No	10	10	x^2	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.0579	0.03622	0.0293	Yes	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.005	0.0293	No	10	100	No	0.011	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01677	0.01453	0.0293	No	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2073	0.1765	0.0293	Yes	10	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3222	0.1169	4	No	11	27.27	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.3097	0.1173	4	No	11	36.36	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-16	0.3428	0.09471	4	No	11	36.36	No	0.01	Param.
Fluoride (mg/L)	HGWC-17	0.4064	0.05382	4	No	11	36.36	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-18	0.7292	0.389	4	No	11	9.091	No	0.01	Param.
Lithium (mg/L)	HGWC-14	0.025	0.025	0.05	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-15	0.025	0.0013	0.05	No	10	50	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-16	0.0037	0.0025	0.05	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-17	0.025	0.0011	0.05	No	10	90	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-18	0.01543	0.01349	0.05	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-14	0.01743	0.01081	0.05	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.005	0.0012	0.05	No	10	70	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-16	0.005	0.005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-17	0.005	0.0014	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-18	0.04068	0.02074	0.05	No	10	10	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.0004	0.00028	0.002	No	10	10	No	0.011	NP (normality)
Thallium (mg/L)	HGWC-15	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-16	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-17	0.0005	0.0001	0.002	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-18	0.0005	0.00014	0.002	No	10	60	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-14	1.713	1.116	5	No	10	50	No	0.01	Param.
Total Radium (pCi/L)	HGWC-15	0.62	0.62	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-16	0.62	0.62	5	No	10	90	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-17	0.62	0.62	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-18	2.425	1.373	5	No	10	10	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

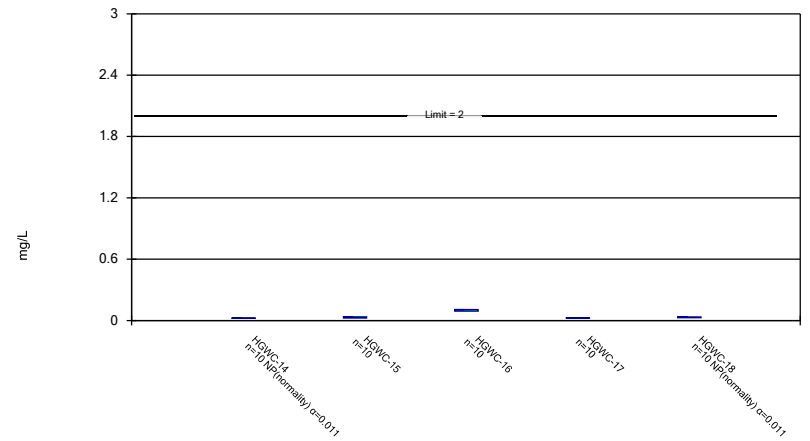
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

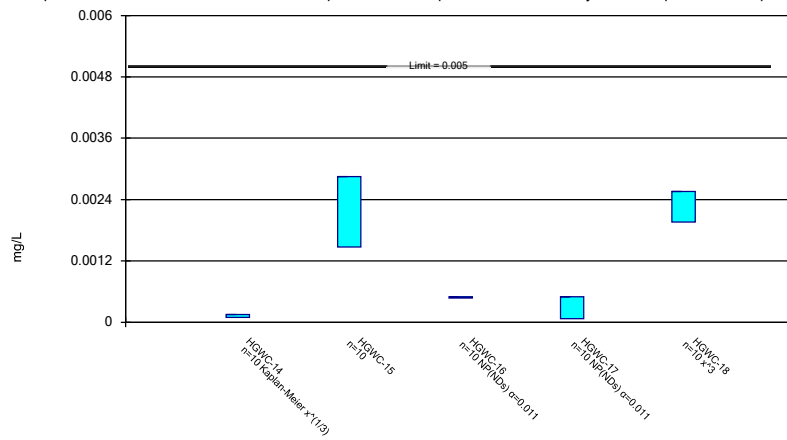
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

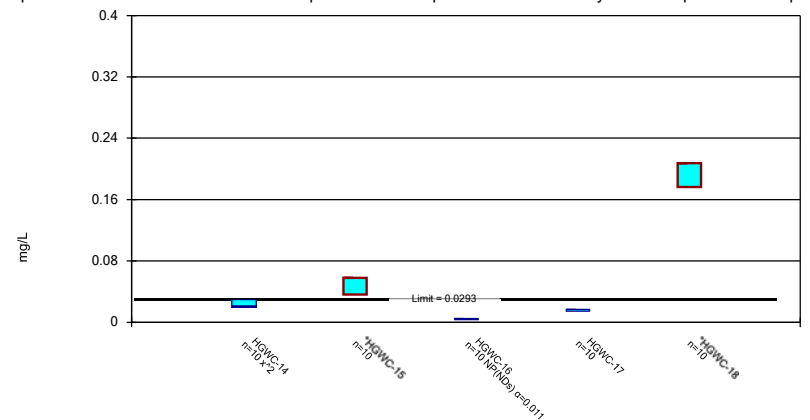
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 10/15/2018 8:52 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.00268 (J)	<0.005	<0.005	<0.005	
5/24/2016					0.00294 (J)
7/12/2016	0.0059	<0.005	<0.005	<0.005	0.0074
9/1/2016	0.0056	<0.005	<0.005	<0.005	0.0073
10/24/2016	0.0058	<0.005			
10/25/2016			<0.005	<0.005	0.006
12/7/2016	<0.005	<0.005	<0.005	<0.005	
12/8/2016					0.007
1/26/2017	0.0089	<0.005	<0.005	<0.005	0.0068
3/22/2017			0.0005 (J)	0.0007 (J)	
3/23/2017	0.0069	0.0008 (J)			0.0082
5/24/2017	0.0048 (J)	<0.005	<0.005		
5/25/2017				0.0007 (J)	0.006
4/3/2018		<0.005	<0.005	<0.005	0.0062
4/4/2018	0.0052				
6/5/2018					0.008
6/6/2018	0.0059	<0.005	<0.005	0.00097 (J)	
Mean	0.005418	0.00233	0.0023	0.001987	0.006584
Std. Dev.	0.001868	0.0005376	0.0006325	0.0008293	0.001495
Upper Lim.	0.007085	0.0025	0.0025	0.0025	0.007918
Lower Lim.	0.003751	0.0008	0.0005	0.0007	0.00525

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 10/15/2018 8:52 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.2	0.0315 (J)	0.0841	0.0222 (J)	
5/24/2016					<0.2
7/12/2016	0.0214	0.0372	0.0886	0.0221	0.0346
9/1/2016	0.0208	0.0364	0.0934	0.0227	0.0336
10/24/2016	0.0208	0.0326			
10/25/2016			0.0991	0.0225	0.0349
12/7/2016	0.022	0.0301	0.101	0.0227	
12/8/2016					0.0339
1/26/2017	0.0238	0.0287	0.105	0.0229	0.0293
3/22/2017			0.11 (J)	0.0248 (J)	
3/23/2017	0.0244	0.0329			0.0313
5/24/2017	0.0228	0.0283	0.106		
5/25/2017				0.0255	0.0336
4/3/2018		0.019 (J)	0.099 (J)	0.025 (J)	0.028 (J)
4/4/2018	0.021				
6/5/2018					0.03
6/6/2018	0.022	0.022	0.11	0.028	
Mean	0.0299	0.02987	0.09962	0.02384	0.03892
Std. Dev.	0.02466	0.00577	0.008748	0.001924	0.02159
Upper Lim.	0.0244	0.03502	0.1074	0.02556	0.0349
Lower Lim.	0.0208	0.02472	0.09182	0.02212	0.028

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 10/15/2018 8:52 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000139 (J)	0.00271 (J)	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001	0.0019	<0.001	<0.001	0.0022
9/1/2016	0.0001 (J)	0.0017	<0.001	<0.001	0.0024
10/24/2016	0.0002 (J)	0.0018			
10/25/2016			<0.001	<0.001	0.0022
12/7/2016	0.0001 (J)	0.0018	<0.001	<0.001	
12/8/2016					0.0024
1/26/2017	<0.001 (*)	0.0013	<0.001	<0.001	0.0025
3/22/2017			<0.001	7E-05 (J)	
3/23/2017	0.0002 (J)	0.002			0.0025
5/24/2017	0.0001 (J)	0.0041	<0.001		
5/25/2017				<0.001	0.0027
4/3/2018		0.0022	<0.001	<0.001	0.0022
4/4/2018	<0.001				
6/5/2018					0.0022
6/6/2018	0.00012 (J)	0.0021	<0.001	<0.001	
Mean	0.0002459	0.002161	0.0005	0.000457	0.00218
Std. Dev.	0.0001792	0.0007728	0	0.000136	0.0006143
Upper Lim.	0.0001512	0.002851	0.0005	0.0005	0.002558
Lower Lim.	9.637E-05	0.001471	0.0005	7E-05	0.001959

Confidence Interval

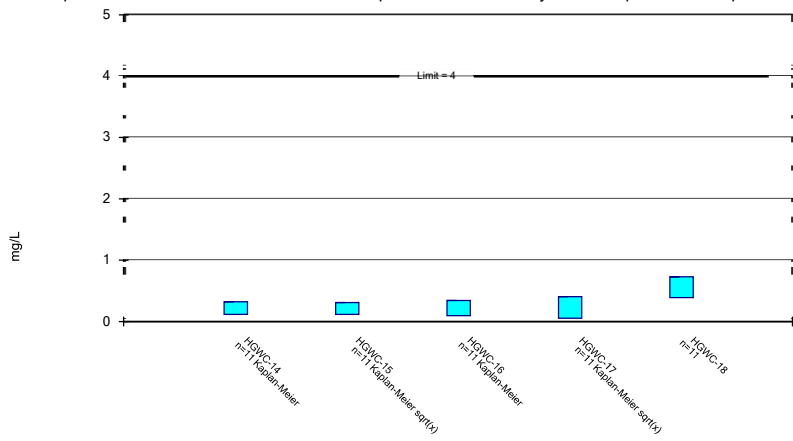
Constituent: Cobalt (mg/L) Analysis Run 10/15/2018 8:52 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.01	0.0419 (J)	<0.01	0.0167	
5/24/2016					0.17 (J)
7/12/2016	0.0232	0.0393	<0.01	0.0148	0.168
9/1/2016	0.0248	0.045	<0.01	0.0151	0.18
10/24/2016	0.0253	0.0557			
10/25/2016			<0.01	0.0141	0.188
12/7/2016	0.0269	0.0536	<0.01	0.0141	
12/8/2016					0.206
1/26/2017	0.0294	0.055	<0.01	0.0154	0.195
3/22/2017			<0.01	0.0169	
3/23/2017	0.0311	0.0715			0.223
5/24/2017	0.0279	0.0446	<0.01		
5/25/2017				0.0154	0.209
4/3/2018		0.032	<0.01	0.016	0.19
4/4/2018	0.025				
6/5/2018					0.19
6/6/2018	0.027	0.032	<0.01	0.018	
Mean	0.02456	0.04706	0.005	0.01565	0.1919
Std. Dev.	0.007257	0.01215	0	0.001259	0.01727
Upper Lim.	0.02962	0.0579	0.005	0.01677	0.2073
Lower Lim.	0.02059	0.03622	0.005	0.01453	0.1765

Parametric Confidence Interval

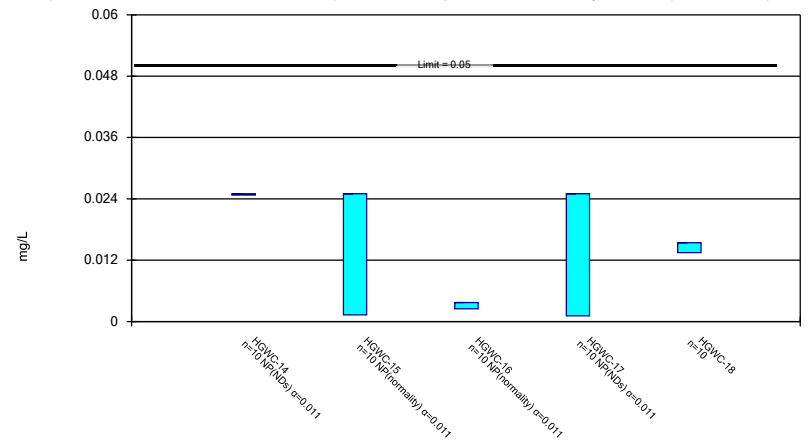
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

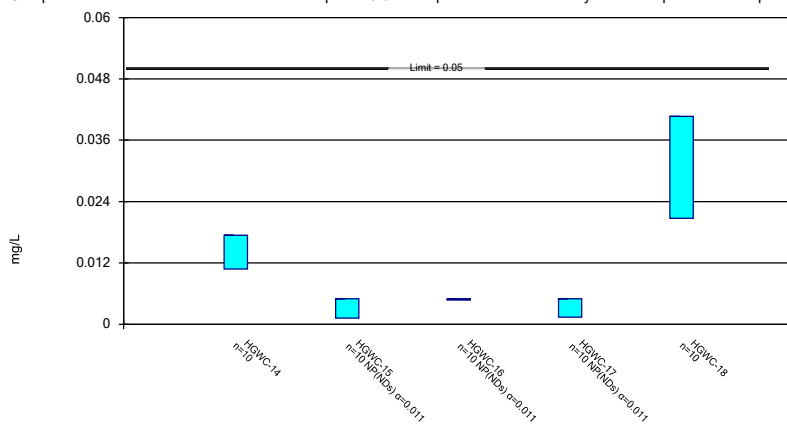
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Constituent: Lithium Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

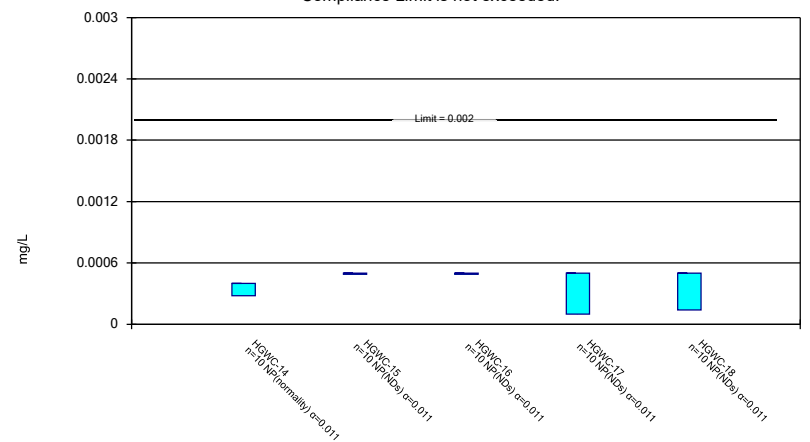
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 10/15/2018 8:50 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 10/15/2018 8:52 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.3	<0.3	0.038 (J)	<0.3	
5/24/2016					<0.3
7/12/2016	0.2 (J)	0.09 (J)	0.26 (J)	0.09 (J)	0.54
9/1/2016	0.08 (J)	0.22 (J)	0.42 (J)	0.03 (J)	0.49 (J)
10/24/2016	<0.3 (*)	<0.3 (*)			
10/25/2016			<0.3 (*)	<0.3 (*)	0.58
12/7/2016	0.11 (J)	0.23 (J)	0.23 (J)	0.54 (J)	
12/8/2016					0.63 (J)
1/26/2017	0.13 (J)	<0.3	0.02 (J)	<0.3	0.71 (J)
3/22/2017			0.3	0.07 (J)	
3/23/2017	0.28 (J)	0.12 (J)			0.57
5/24/2017	0.32	0.31	0.46		
5/25/2017				0.42	0.54
10/4/2017	0.52	0.6	<0.3	0.93	0.95
4/3/2018		<0.3	<0.3	<0.3	0.33
4/4/2018	<0.3				
6/5/2018					0.66
6/6/2018	0.25 (J)	0.17 (J)	<0.3	0.23 (J)	
Mean	0.2127	0.2127	0.2116	0.2645	0.5591
Std. Dev.	0.126	0.1418	0.1406	0.2683	0.2041
Upper Lim.	0.3222	0.3097	0.3428	0.4064	0.7292
Lower Lim.	0.1169	0.1173	0.09471	0.05382	0.389

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 10/15/2018 8:52 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.05	<0.05	<0.05	<0.05	
5/24/2016					0.0142 (J)
7/12/2016	<0.05	<0.05	0.0037 (J)	<0.05	0.0141 (J)
9/1/2016	<0.05	0.0021 (J)	0.0033 (J)	<0.05	0.0158 (J)
10/24/2016	<0.05	<0.05			
10/25/2016			0.0029 (J)	<0.05	0.016 (J)
12/7/2016	<0.05	<0.05	0.0029 (J)	<0.05	
12/8/2016					0.0144 (J)
1/26/2017	<0.05	<0.05	0.0028 (J)	<0.05	0.0136 (J)
3/22/2017			0.0025 (J)	<0.05	
3/23/2017	<0.05	0.0016 (J)			0.0151 (J)
5/24/2017	<0.05	0.0029 (J)	0.0029 (J)		
5/25/2017				0.0011 (J)	0.0154 (J)
4/3/2018		0.0026 (J)	0.0028 (J)	<0.05	0.013 (J)
4/4/2018	<0.05				
6/5/2018					0.013 (J)
6/6/2018	<0.05	0.0013 (J)	0.0031 (J)	<0.05	
Mean	0.025	0.01355	0.00519	0.02261	0.01446
Std. Dev.	0	0.01208	0.006968	0.007558	0.001089
Upper Lim.	0.025	0.025	0.0037	0.025	0.01543
Lower Lim.	0.025	0.0013	0.0025	0.0011	0.01349

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 10/15/2018 8:52 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.017	<0.01	<0.01	<0.01	
5/24/2016					<0.01
7/12/2016	0.0146	<0.01	<0.01	<0.01	0.036
9/1/2016	0.0137	<0.01	<0.01	0.0014 (J)	0.0347
10/24/2016	0.0135	0.0012 (J)			
10/25/2016			<0.01	<0.01	0.0282
12/7/2016	0.01 (J)	0.0041 (J)	<0.01	0.0023 (J)	
12/8/2016					0.0373
1/26/2017	0.0214	<0.01	<0.01	<0.01	0.0385
3/22/2017			<0.01	<0.01	
3/23/2017	0.0167	0.0016 (J)			0.0414
5/24/2017	0.0083 (J)	<0.01	<0.01		
5/25/2017				<0.01	0.019
4/3/2018		<0.01	<0.01	<0.01	0.029
4/4/2018	0.012				
6/5/2018					0.038
6/6/2018	0.014	<0.01	<0.01	<0.01	
Mean	0.01412	0.00419	0.005	0.00437	0.03071
Std. Dev.	0.003713	0.0015	0	0.001345	0.01117
Upper Lim.	0.01743	0.005	0.005	0.005	0.04068
Lower Lim.	0.01081	0.0012	0.005	0.0014	0.02074

Confidence Interval

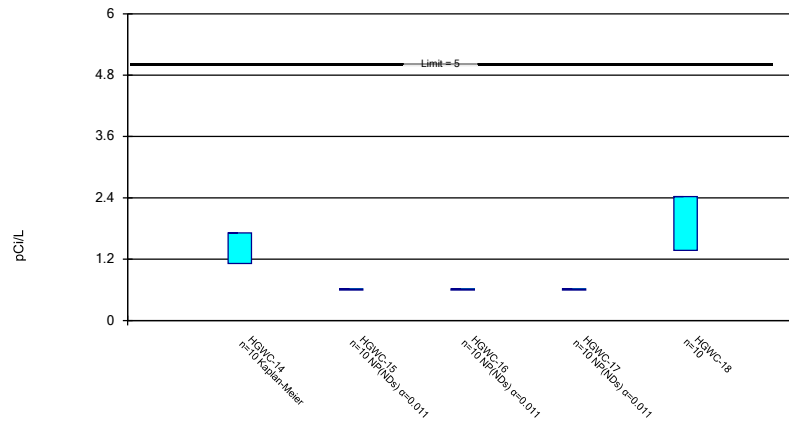
Constituent: Thallium (mg/L) Analysis Run 10/15/2018 8:52 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000306 (J)	<0.001	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001 (*)	<0.001	<0.001	<0.001 (*)	<0.001 (*)
9/1/2016	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
10/24/2016	0.0004 (J)	<0.001			
10/25/2016			<0.001	<0.001	<0.001
12/7/2016	0.0003 (J)	<0.001	<0.001	<0.001	
12/8/2016					<0.001
1/26/2017	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
3/22/2017			<0.001	0.0001 (J)	
3/23/2017	0.0003 (J)	<0.001			0.0002 (J)
5/24/2017	0.0003 (J)	<0.001	<0.001		
5/25/2017				0.0001 (J)	0.0002 (J)
4/3/2018		<0.001	<0.001	<0.001	0.00014 (J)
4/4/2018	0.00028 (J)				
6/5/2018					0.00016 (J)
6/6/2018	0.00029 (J)	<0.001	<0.001	<0.001	
Mean	0.0003276	0.0005	0.0005	0.00042	0.00037
Std. Dev.	6.906E-05	0	0	0.0001687	0.0001687
Upper Lim.	0.0004	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.00028	0.0005	0.0005	0.0001	0.00014

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



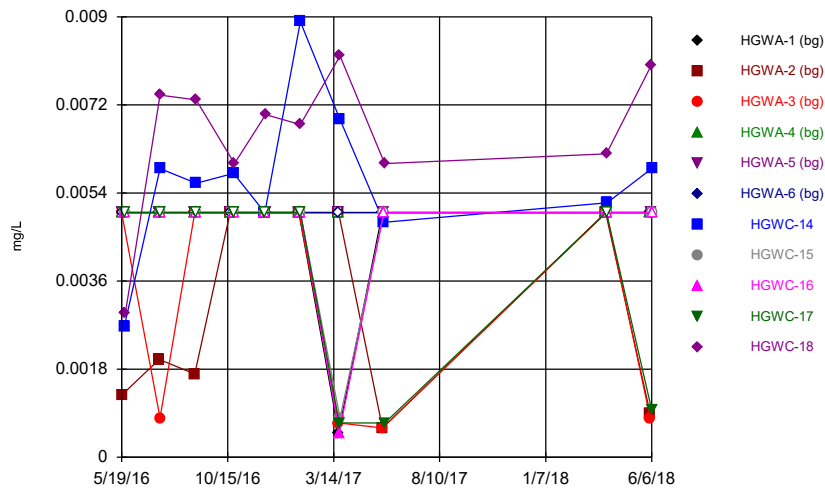
Constituent: Total Radium Analysis Run 10/15/2018 8:50 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 10/15/2018 8:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

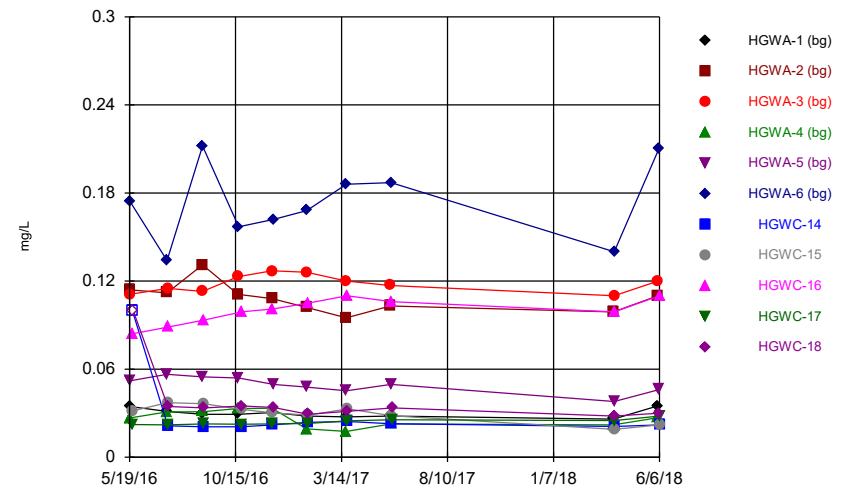
	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<1.24	<1.24		<1.24	
5/24/2016					1.82
7/1/2016			<1.24		
7/12/2016	<1.24 (*)	<1.24	<1.24	<1.24 (*)	<1.24 (*)
9/1/2016	<1.24 (*)	<1.24	<1.24 (*)	<1.24	1.51
10/24/2016	1.88 (J)	<1.24 (*)			
10/25/2016			<1.24	<1.24	2.69 (J)
12/7/2016	1.35	<1.24	<1.24	<1.24	
12/8/2016					2.21
1/26/2017	2.1 (J)	<1.24	<1.24	<1.24	2.26 (J)
3/22/2017			<1.24	<1.24	
3/23/2017	1.17 (J)	<1.24			1.81 (J)
5/24/2017	<1.24	<1.24	1.05		
5/25/2017				<1.24	1.63 (J)
4/3/2018		<1.24	<1.24	<1.24	2.53 (J)
4/4/2018	1.72 (J)				
6/5/2018					1.91
6/6/2018	<1.24	<1.24	<1.24	<1.24	
Mean	1.132	0.62	0.663	0.62	1.899
Std. Dev.	0.5965	0	0.136	0	0.5892
Upper Lim.	1.713	0.62	0.62	0.62	2.425
Lower Lim.	1.116	0.62	0.62	0.62	1.373

Time Series



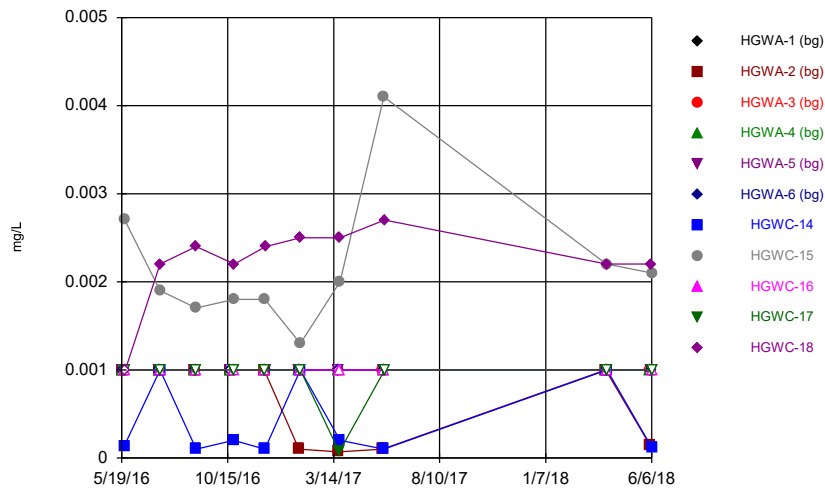
Constituent: Arsenic Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



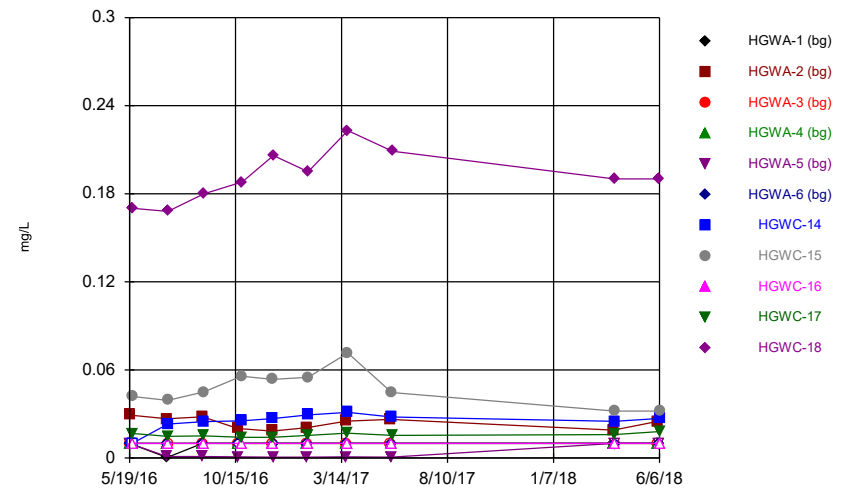
Constituent: Barium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



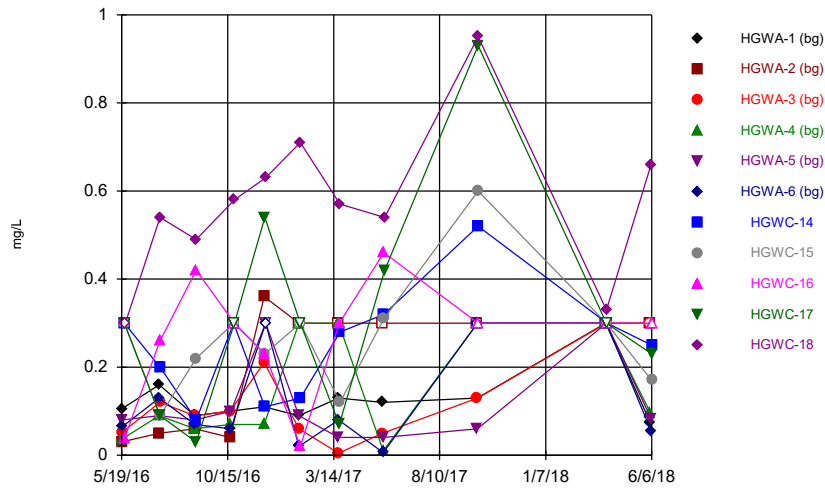
Constituent: Cadmium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



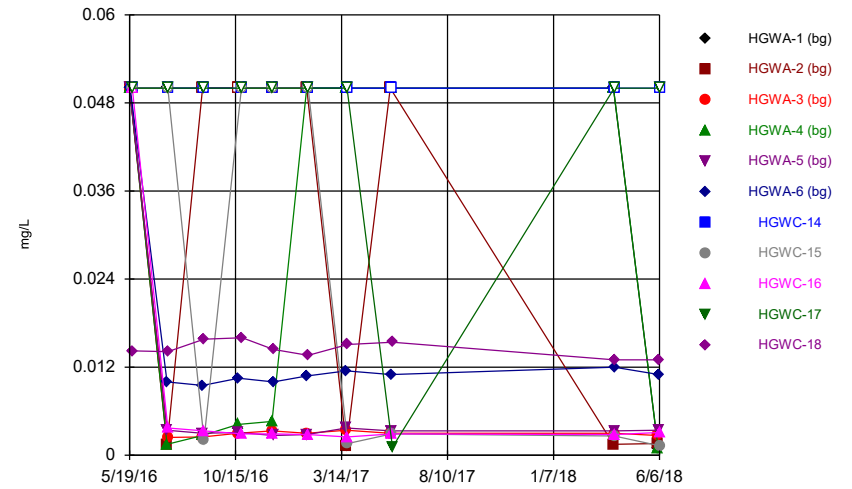
Constituent: Cobalt Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



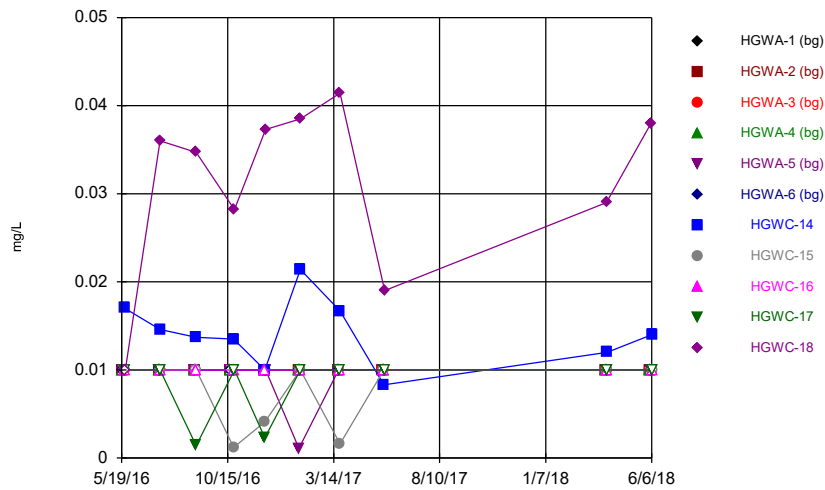
Constituent: Fluoride Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



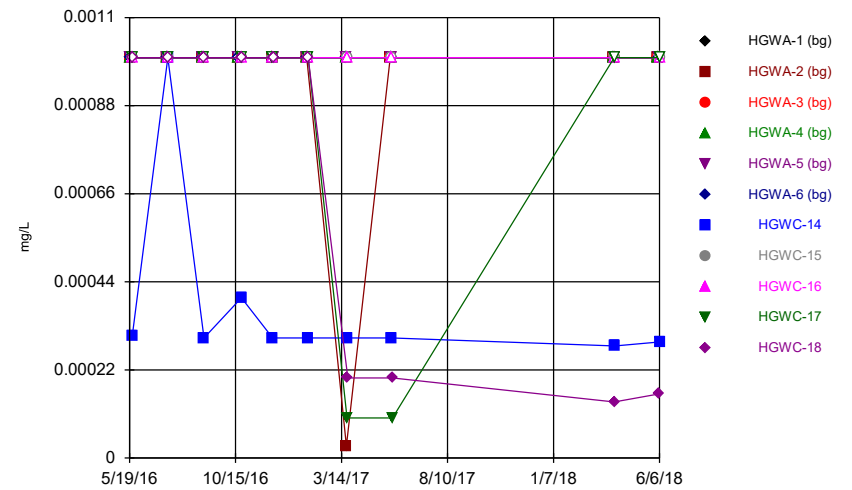
Constituent: Lithium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



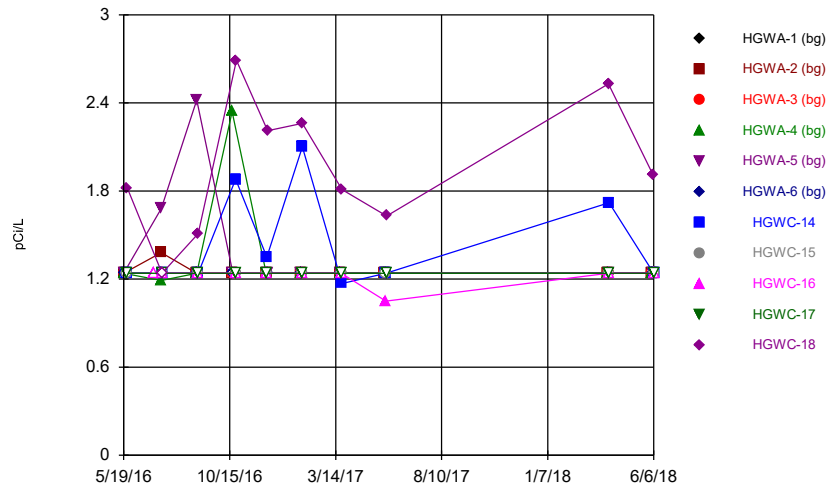
Constituent: Selenium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



Constituent: Thallium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



Constituent: Total Radium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

USEPA Based Groundwater Protection
Standards Statistical Analysis Package

AM 01

Table B-2
USEPA Based Groundwater Protection Standards
Plant Hammond - Ash Pond 2
Floyd County, Georgia
AM 01

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS ¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.212	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	0.006	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead ³	7439-92-1	mg/L	0.015	0.005	0.015
Lithium ²	7439-93-2	mg/L	0.04	0.025	0.04
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	2.42	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Regional Screening Level applied for constituent per CCR Rule Amendment, July 30, 2018.

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

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 10/15/2018, 8:56 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	54	96.3	n/a	0.06267	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	60	83.33	n/a	0.04607	NP Inter(NDs)
Barium (mg/L)	n/a	0.212	n/a	n/a	n/a	60	0	n/a	0.04607	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	54	88.89	n/a	0.06267	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	60	93.33	n/a	0.04607	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	54	92.59	n/a	0.06267	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	60	70	n/a	0.04607	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	66	27.27	n/a	0.03387	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	54	85.19	n/a	0.06267	NP Inter(NDs)
Lithium (mg/L)	n/a	0.025	n/a	n/a	n/a	60	38.33	n/a	0.04607	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	54	94.44	n/a	0.06267	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	57	96.49	n/a	0.05373	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	60	98.33	n/a	0.04607	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	60	98.33	n/a	0.04607	NP Inter(NDs)
Total Radium (pCi/L)	n/a	2.42	n/a	n/a	n/a	60	91.67	n/a	0.04607	NP Inter(NDs)

Summary of Confidence Intervals - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 10/15/2018, 9:00 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-15	0.0579	0.03622	0.0293	Yes	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2073	0.1765	0.0293	Yes	10	0	No	0.01	Param.

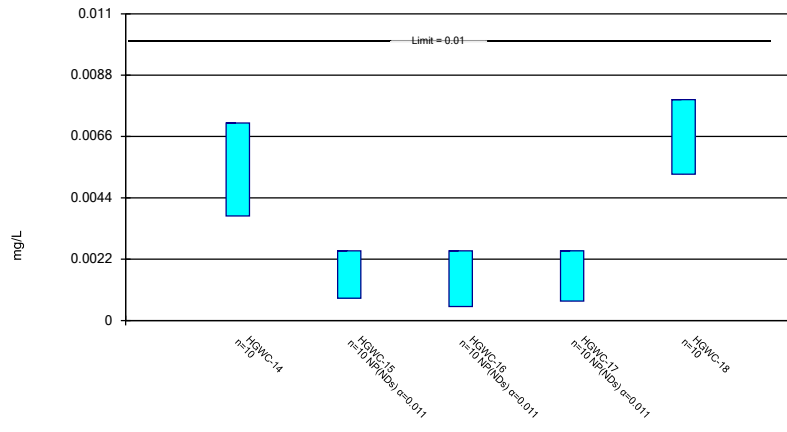
Summary of Confidence Intervals - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 10/15/2018, 9:00 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	HGWC-14	0.007085	0.003751	0.01	No	10	10	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.0025	0.0008	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.0025	0.0005	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.0025	0.0007	0.01	No	10	70	No	0.011	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.007918	0.00525	0.01	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0244	0.0208	2	No	10	10	No	0.011	NP (normality)
Barium (mg/L)	HGWC-15	0.03502	0.02472	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1074	0.09182	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.02556	0.02212	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-18	0.0349	0.028	2	No	10	10	No	0.011	NP (normality)
Cadmium (mg/L)	HGWC-14	0.0001512	0.00009637	0.005	No	10	30	x^(1/3)	0.01	Param.
Cadmium (mg/L)	HGWC-15	0.002851	0.001471	0.005	No	10	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0005	0.0005	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0005	0.00007	0.005	No	10	90	No	0.011	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002558	0.001959	0.005	No	10	10	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-14	0.02962	0.02059	0.0293	No	10	10	x^2	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.0579	0.03622	0.0293	Yes	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.005	0.0293	No	10	100	No	0.011	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01677	0.01453	0.0293	No	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2073	0.1765	0.0293	Yes	10	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3222	0.1169	4	No	11	27.27	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.3097	0.1173	4	No	11	36.36	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-16	0.3428	0.09471	4	No	11	36.36	No	0.01	Param.
Fluoride (mg/L)	HGWC-17	0.4064	0.05382	4	No	11	36.36	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-18	0.7292	0.389	4	No	11	9.091	No	0.01	Param.
Lithium (mg/L)	HGWC-14	0.0125	0.0125	0.04	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-15	0.0125	0.0013	0.04	No	10	50	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-16	0.0037	0.0025	0.04	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	HGWC-17	0.0125	0.0011	0.04	No	10	90	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-18	0.01543	0.01349	0.04	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-14	0.01743	0.01081	0.05	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.005	0.0012	0.05	No	10	70	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-16	0.005	0.005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-17	0.005	0.0014	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	HGWC-18	0.04068	0.02074	0.05	No	10	10	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.0004	0.00028	0.002	No	10	10	No	0.011	NP (normality)
Thallium (mg/L)	HGWC-15	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-16	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-17	0.0005	0.0001	0.002	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	HGWC-18	0.0005	0.00014	0.002	No	10	60	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-14	1.713	1.116	5	No	10	50	No	0.01	Param.
Total Radium (pCi/L)	HGWC-15	0.62	0.62	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-16	0.62	0.62	5	No	10	90	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-17	0.62	0.62	5	No	10	100	No	0.011	NP (NDs)
Total Radium (pCi/L)	HGWC-18	2.425	1.373	5	No	10	10	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

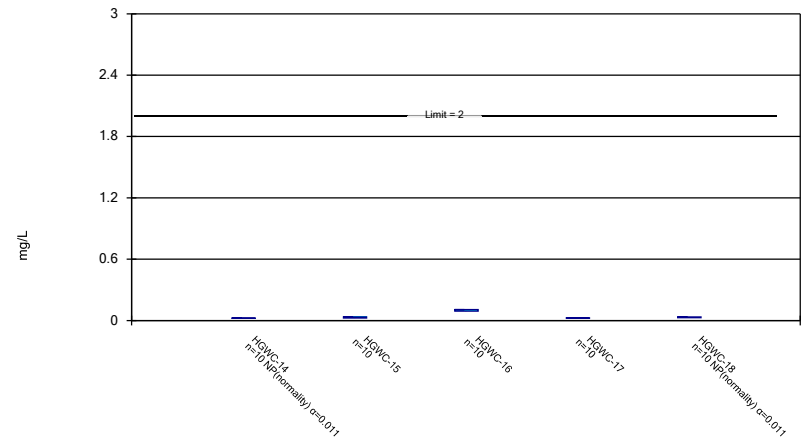
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

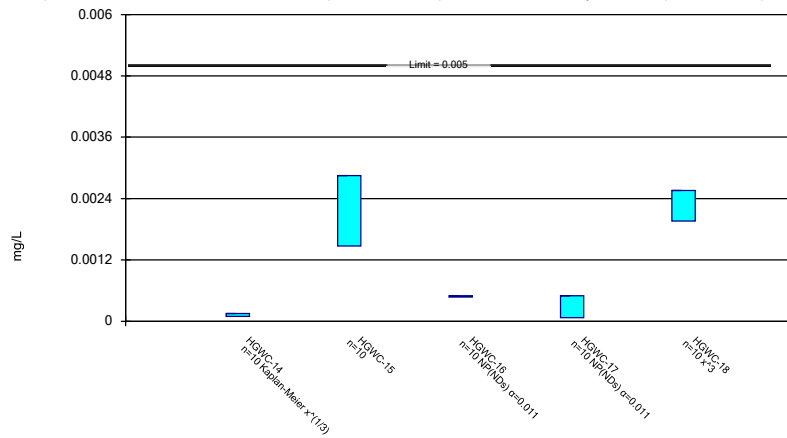
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

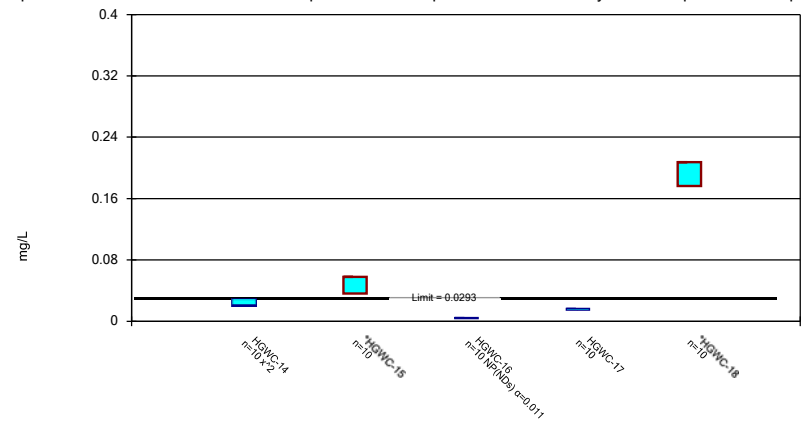
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 10/15/2018 9:00 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.00268 (J)	<0.005	<0.005	<0.005	
5/24/2016					0.00294 (J)
7/12/2016	0.0059	<0.005	<0.005	<0.005	0.0074
9/1/2016	0.0056	<0.005	<0.005	<0.005	0.0073
10/24/2016	0.0058	<0.005			
10/25/2016			<0.005	<0.005	0.006
12/7/2016	<0.005	<0.005	<0.005	<0.005	
12/8/2016					0.007
1/26/2017	0.0089	<0.005	<0.005	<0.005	0.0068
3/22/2017			0.0005 (J)	0.0007 (J)	
3/23/2017	0.0069	0.0008 (J)			0.0082
5/24/2017	0.0048 (J)	<0.005	<0.005		
5/25/2017				0.0007 (J)	0.006
4/3/2018		<0.005	<0.005	<0.005	0.0062
4/4/2018	0.0052				
6/5/2018					0.008
6/6/2018	0.0059	<0.005	<0.005	0.00097 (J)	
Mean	0.005418	0.00233	0.0023	0.001987	0.006584
Std. Dev.	0.001868	0.0005376	0.0006325	0.0008293	0.001495
Upper Lim.	0.007085	0.0025	0.0025	0.0025	0.007918
Lower Lim.	0.003751	0.0008	0.0005	0.0007	0.00525

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 10/15/2018 9:00 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.2	0.0315 (J)	0.0841	0.0222 (J)	
5/24/2016					<0.2
7/12/2016	0.0214	0.0372	0.0886	0.0221	0.0346
9/1/2016	0.0208	0.0364	0.0934	0.0227	0.0336
10/24/2016	0.0208	0.0326			
10/25/2016			0.0991	0.0225	0.0349
12/7/2016	0.022	0.0301	0.101	0.0227	
12/8/2016					0.0339
1/26/2017	0.0238	0.0287	0.105	0.0229	0.0293
3/22/2017			0.11 (J)	0.0248 (J)	
3/23/2017	0.0244	0.0329			0.0313
5/24/2017	0.0228	0.0283	0.106		
5/25/2017				0.0255	0.0336
4/3/2018		0.019 (J)	0.099 (J)	0.025 (J)	0.028 (J)
4/4/2018	0.021				
6/5/2018					0.03
6/6/2018	0.022	0.022	0.11	0.028	
Mean	0.0299	0.02987	0.09962	0.02384	0.03892
Std. Dev.	0.02466	0.00577	0.008748	0.001924	0.02159
Upper Lim.	0.0244	0.03502	0.1074	0.02556	0.0349
Lower Lim.	0.0208	0.02472	0.09182	0.02212	0.028

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 10/15/2018 9:00 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000139 (J)	0.00271 (J)	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001	0.0019	<0.001	<0.001	0.0022
9/1/2016	0.0001 (J)	0.0017	<0.001	<0.001	0.0024
10/24/2016	0.0002 (J)	0.0018			
10/25/2016			<0.001	<0.001	0.0022
12/7/2016	0.0001 (J)	0.0018	<0.001	<0.001	
12/8/2016					0.0024
1/26/2017	<0.001 (*)	0.0013	<0.001	<0.001	0.0025
3/22/2017			<0.001	7E-05 (J)	
3/23/2017	0.0002 (J)	0.002			0.0025
5/24/2017	0.0001 (J)	0.0041	<0.001		
5/25/2017				<0.001	0.0027
4/3/2018		0.0022	<0.001	<0.001	0.0022
4/4/2018	<0.001				
6/5/2018					0.0022
6/6/2018	0.00012 (J)	0.0021	<0.001	<0.001	
Mean	0.0002459	0.002161	0.0005	0.000457	0.00218
Std. Dev.	0.0001792	0.0007728	0	0.000136	0.0006143
Upper Lim.	0.0001512	0.002851	0.0005	0.0005	0.002558
Lower Lim.	9.637E-05	0.001471	0.0005	7E-05	0.001959

Confidence Interval

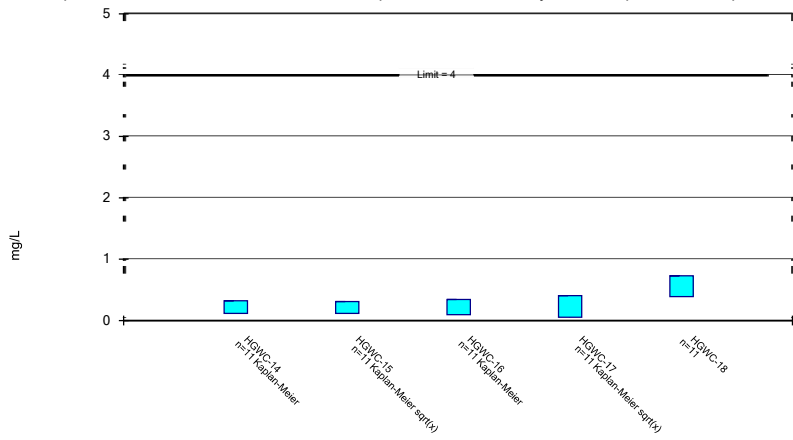
Constituent: Cobalt (mg/L) Analysis Run 10/15/2018 9:00 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.01	0.0419 (J)	<0.01	0.0167	
5/24/2016					0.17 (J)
7/12/2016	0.0232	0.0393	<0.01	0.0148	0.168
9/1/2016	0.0248	0.045	<0.01	0.0151	0.18
10/24/2016	0.0253	0.0557			
10/25/2016			<0.01	0.0141	0.188
12/7/2016	0.0269	0.0536	<0.01	0.0141	
12/8/2016					0.206
1/26/2017	0.0294	0.055	<0.01	0.0154	0.195
3/22/2017			<0.01	0.0169	
3/23/2017	0.0311	0.0715			0.223
5/24/2017	0.0279	0.0446	<0.01		
5/25/2017				0.0154	0.209
4/3/2018		0.032	<0.01	0.016	0.19
4/4/2018	0.025				
6/5/2018					0.19
6/6/2018	0.027	0.032	<0.01	0.018	
Mean	0.02456	0.04706	0.005	0.01565	0.1919
Std. Dev.	0.007257	0.01215	0	0.001259	0.01727
Upper Lim.	0.02962	0.0579	0.005	0.01677	0.2073
Lower Lim.	0.02059	0.03622	0.005	0.01453	0.1765

Parametric Confidence Interval

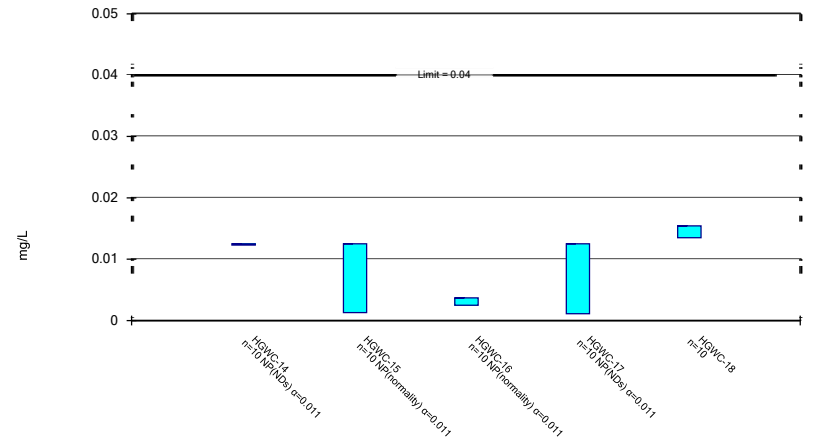
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

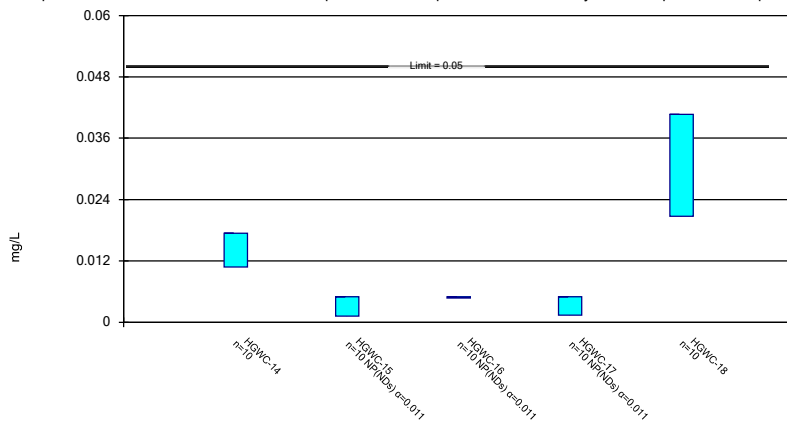
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

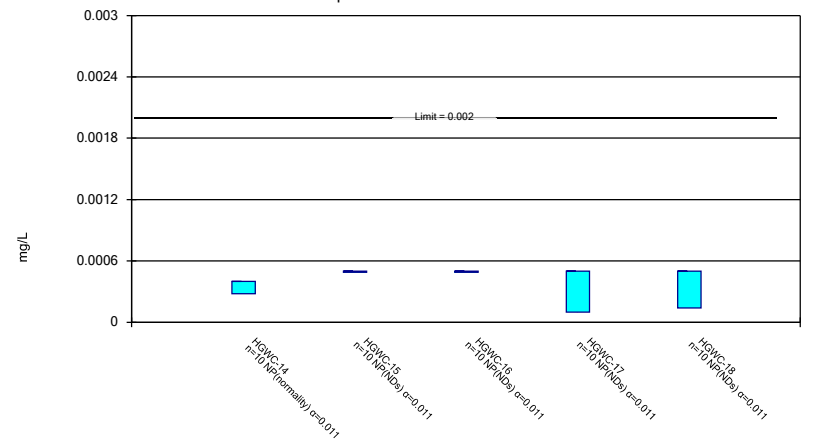
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 10/15/2018 8:59 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 10/15/2018 9:00 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.3	<0.3	0.038 (J)	<0.3	
5/24/2016					<0.3
7/12/2016	0.2 (J)	0.09 (J)	0.26 (J)	0.09 (J)	0.54
9/1/2016	0.08 (J)	0.22 (J)	0.42 (J)	0.03 (J)	0.49 (J)
10/24/2016	<0.3 (*)	<0.3 (*)			
10/25/2016			<0.3 (*)	<0.3 (*)	0.58
12/7/2016	0.11 (J)	0.23 (J)	0.23 (J)	0.54 (J)	
12/8/2016					0.63 (J)
1/26/2017	0.13 (J)	<0.3	0.02 (J)	<0.3	0.71 (J)
3/22/2017			0.3	0.07 (J)	
3/23/2017	0.28 (J)	0.12 (J)			0.57
5/24/2017	0.32	0.31	0.46		
5/25/2017				0.42	0.54
10/4/2017	0.52	0.6	<0.3	0.93	0.95
4/3/2018		<0.3	<0.3	<0.3	0.33
4/4/2018	<0.3				
6/5/2018					0.66
6/6/2018	0.25 (J)	0.17 (J)	<0.3	0.23 (J)	
Mean	0.2127	0.2127	0.2116	0.2645	0.5591
Std. Dev.	0.126	0.1418	0.1406	0.2683	0.2041
Upper Lim.	0.3222	0.3097	0.3428	0.4064	0.7292
Lower Lim.	0.1169	0.1173	0.09471	0.05382	0.389

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 10/15/2018 9:00 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.025	<0.025	<0.025	<0.025	
5/24/2016					0.0142 (J)
7/12/2016	<0.025	<0.025	0.0037 (J)	<0.025	0.0141 (J)
9/1/2016	<0.025	0.0021 (J)	0.0033 (J)	<0.025	0.0158 (J)
10/24/2016	<0.025	<0.025			
10/25/2016			0.0029 (J)	<0.025	0.016 (J)
12/7/2016	<0.025	<0.025	0.0029 (J)	<0.025	
12/8/2016					0.0144 (J)
1/26/2017	<0.025	<0.025	0.0028 (J)	<0.025	0.0136 (J)
3/22/2017			0.0025 (J)	<0.025	
3/23/2017	<0.025	0.0016 (J)			0.0151 (J)
5/24/2017	<0.025	0.0029 (J)	0.0029 (J)		
5/25/2017				0.0011 (J)	0.0154 (J)
4/3/2018		0.0026 (J)	0.0028 (J)	<0.025	0.013 (J)
4/4/2018	<0.025				
6/5/2018					0.013 (J)
6/6/2018	<0.025	0.0013 (J)	0.0031 (J)	<0.025	
Mean	0.0125	0.0073	0.00394	0.01136	0.01446
Std. Dev.	0	0.005499	0.003025	0.003605	0.001089
Upper Lim.	0.0125	0.0125	0.0037	0.0125	0.01543
Lower Lim.	0.0125	0.0013	0.0025	0.0011	0.01349

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 10/15/2018 9:00 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.017	<0.01	<0.01	<0.01	
5/24/2016					<0.01
7/12/2016	0.0146	<0.01	<0.01	<0.01	0.036
9/1/2016	0.0137	<0.01	<0.01	0.0014 (J)	0.0347
10/24/2016	0.0135	0.0012 (J)			
10/25/2016			<0.01	<0.01	0.0282
12/7/2016	0.01 (J)	0.0041 (J)	<0.01	0.0023 (J)	
12/8/2016					0.0373
1/26/2017	0.0214	<0.01	<0.01	<0.01	0.0385
3/22/2017			<0.01	<0.01	
3/23/2017	0.0167	0.0016 (J)			0.0414
5/24/2017	0.0083 (J)	<0.01	<0.01		
5/25/2017				<0.01	0.019
4/3/2018		<0.01	<0.01	<0.01	0.029
4/4/2018	0.012				
6/5/2018					0.038
6/6/2018	0.014	<0.01	<0.01	<0.01	
Mean	0.01412	0.00419	0.005	0.00437	0.03071
Std. Dev.	0.003713	0.0015	0	0.001345	0.01117
Upper Lim.	0.01743	0.005	0.005	0.005	0.04068
Lower Lim.	0.01081	0.0012	0.005	0.0014	0.02074

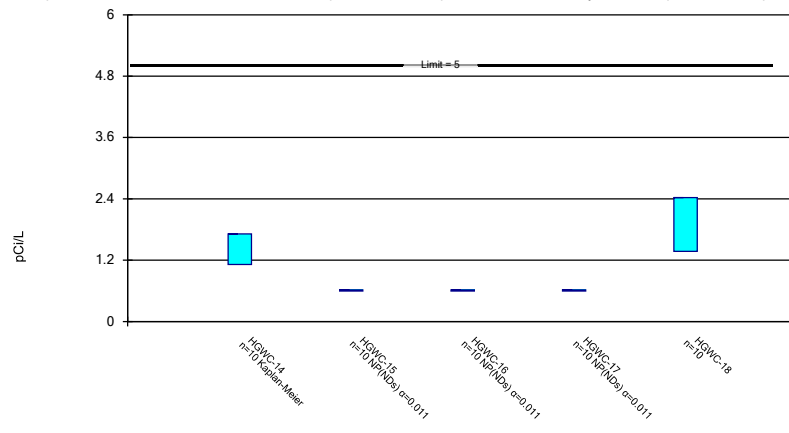
Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 10/15/2018 9:00 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000306 (J)	<0.001	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001 (*)	<0.001	<0.001	<0.001 (*)	<0.001 (*)
9/1/2016	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
10/24/2016	0.0004 (J)	<0.001			
10/25/2016			<0.001	<0.001	<0.001
12/7/2016	0.0003 (J)	<0.001	<0.001	<0.001	
12/8/2016					<0.001
1/26/2017	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
3/22/2017			<0.001	0.0001 (J)	
3/23/2017	0.0003 (J)	<0.001			0.0002 (J)
5/24/2017	0.0003 (J)	<0.001	<0.001		
5/25/2017				0.0001 (J)	0.0002 (J)
4/3/2018		<0.001	<0.001	<0.001	0.00014 (J)
4/4/2018	0.00028 (J)				
6/5/2018					0.00016 (J)
6/6/2018	0.00029 (J)	<0.001	<0.001	<0.001	
Mean	0.0003276	0.0005	0.0005	0.00042	0.00037
Std. Dev.	6.906E-05	0	0	0.0001687	0.0001687
Upper Lim.	0.0004	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.00028	0.0005	0.0005	0.0001	0.00014

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



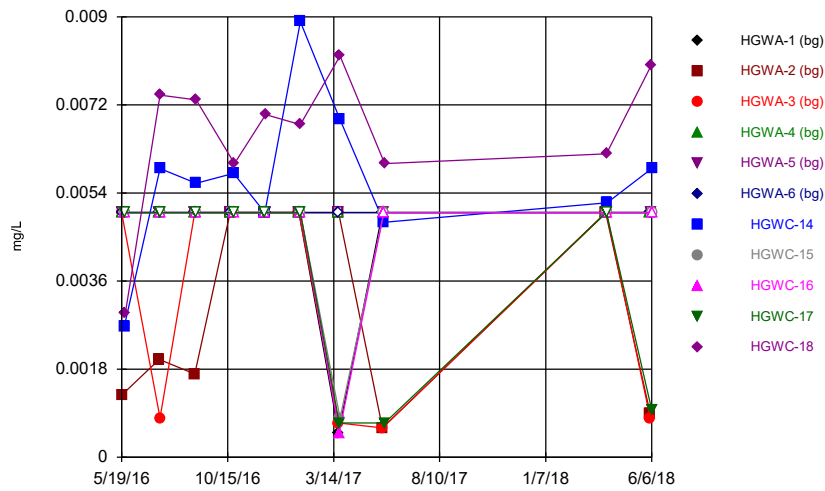
Constituent: Total Radium Analysis Run 10/15/2018 9:00 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 10/15/2018 9:00 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

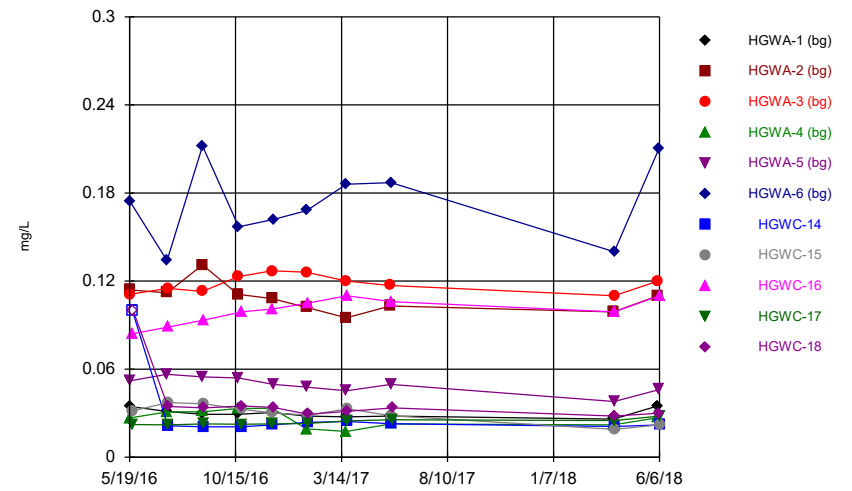
	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<1.24	<1.24		<1.24	
5/24/2016					1.82
7/1/2016			<1.24		
7/12/2016	<1.24 (*)	<1.24	<1.24	<1.24 (*)	<1.24 (*)
9/1/2016	<1.24 (*)	<1.24	<1.24 (*)	<1.24	1.51
10/24/2016	1.88 (J)	<1.24 (*)			
10/25/2016			<1.24	<1.24	2.69 (J)
12/7/2016	1.35	<1.24	<1.24	<1.24	
12/8/2016					2.21
1/26/2017	2.1 (J)	<1.24	<1.24	<1.24	2.26 (J)
3/22/2017			<1.24	<1.24	
3/23/2017	1.17 (J)	<1.24			1.81 (J)
5/24/2017	<1.24	<1.24	1.05		
5/25/2017				<1.24	1.63 (J)
4/3/2018		<1.24	<1.24	<1.24	2.53 (J)
4/4/2018	1.72 (J)				
6/5/2018					1.91
6/6/2018	<1.24	<1.24	<1.24	<1.24	
Mean	1.132	0.62	0.663	0.62	1.899
Std. Dev.	0.5965	0	0.136	0	0.5892
Upper Lim.	1.713	0.62	0.62	0.62	2.425
Lower Lim.	1.116	0.62	0.62	0.62	1.373

Time Series



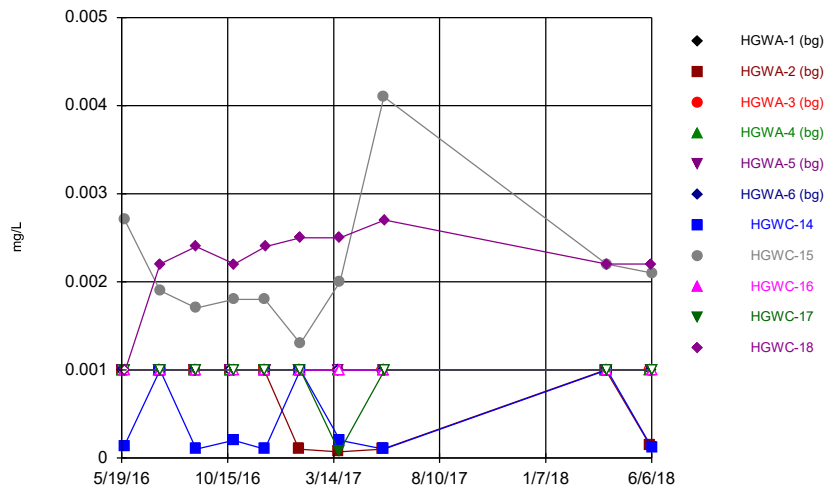
Constituent: Arsenic Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



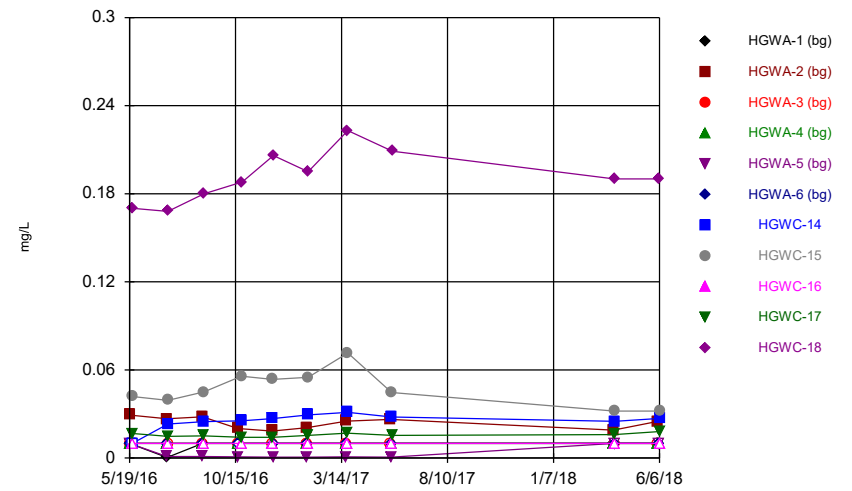
Constituent: Barium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



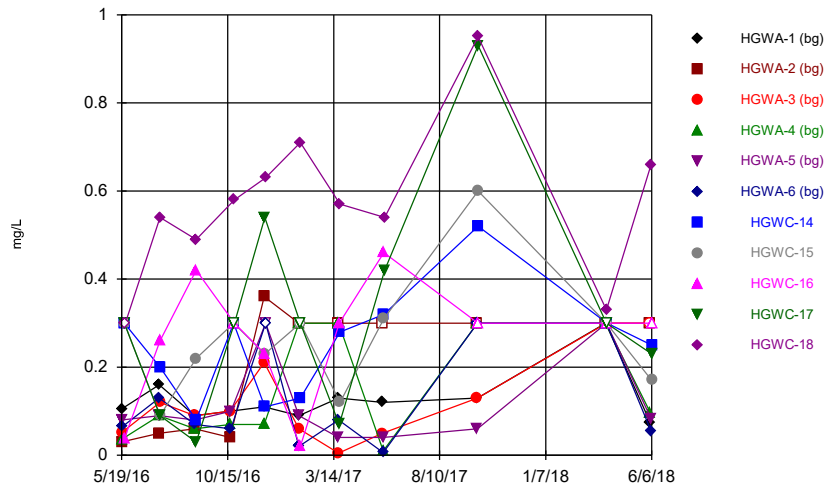
Constituent: Cadmium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series

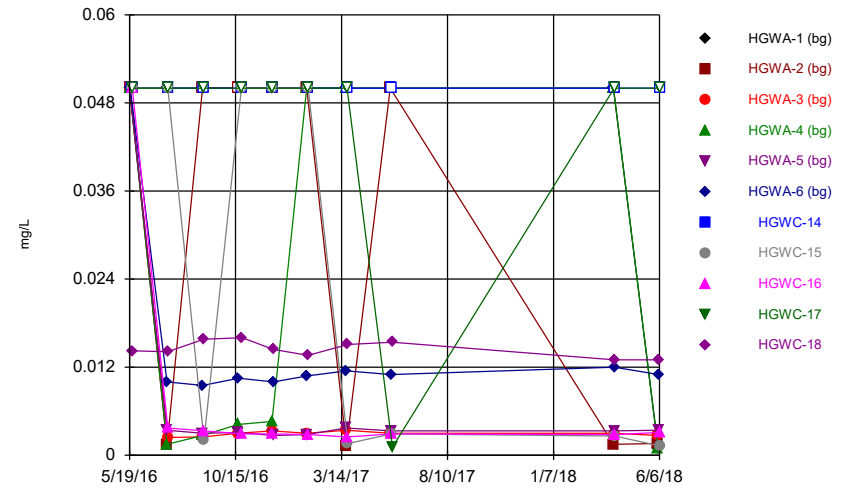


Constituent: Cobalt Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

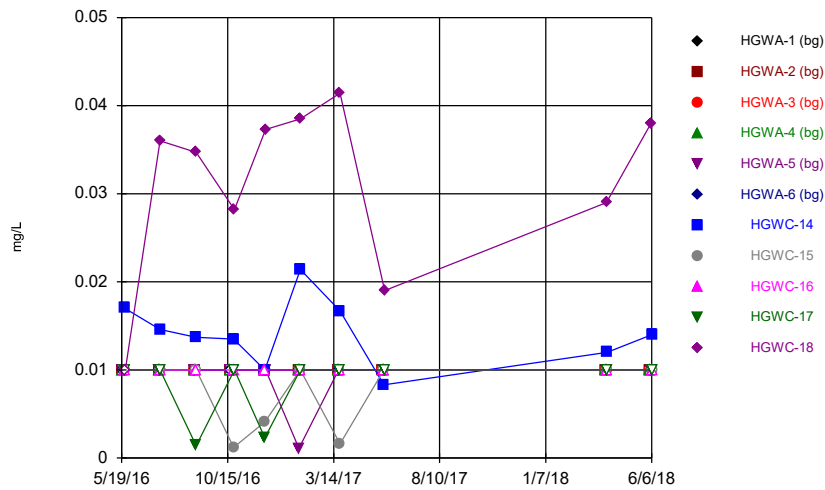
Time Series



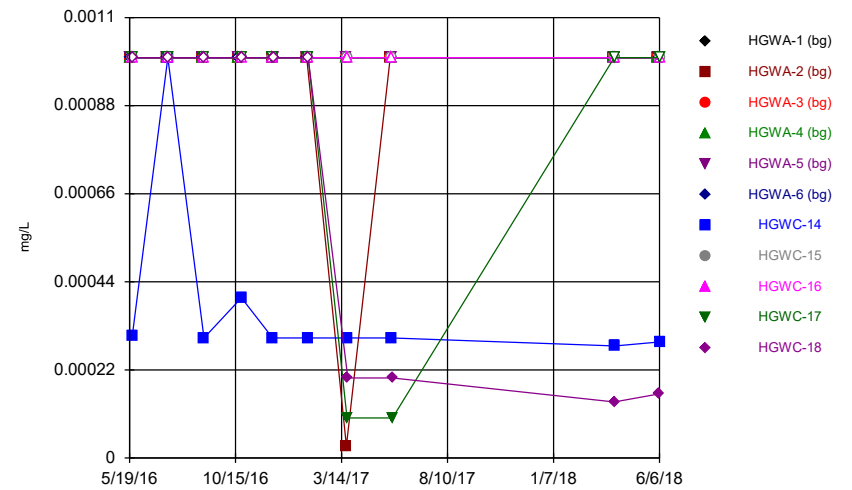
Time Series



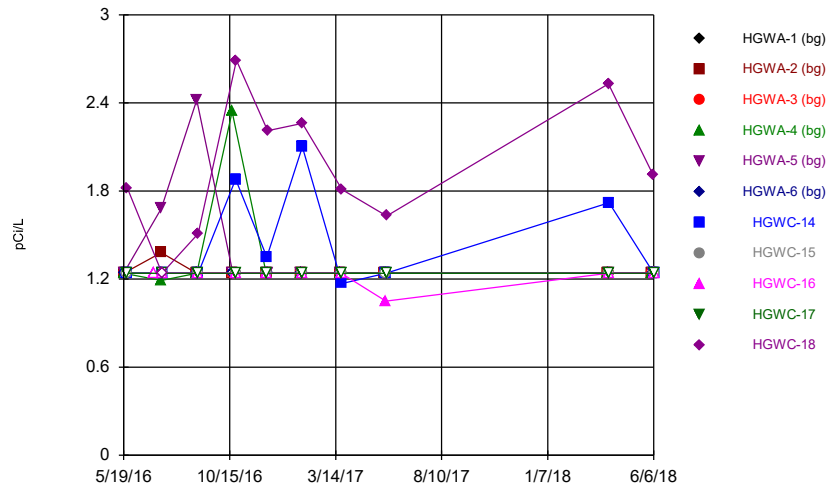
Time Series



Time Series



Time Series



Constituent: Total Radium Analysis Run 10/15/2018 8:54 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

October 2018 event (AM 02)

AP-1

EPD Based Groundwater Protection
Standards Statistical Analysis Package

AM 02

Table B-2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia
AM 02

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.14	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	N/A	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead ²	7439-92-1	mg/L	N/A	0.005	0.005
Lithium ²	7439-93-2	mg/L	N/A	0.05	0.05
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.38	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Constituent without established EPA MCL.

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 7:32 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	27	96.3	n/a	0.2503	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	33	66.67	n/a	0.184	NP Inter(NDs)
Barium (mg/L)	n/a	0.14	n/a	n/a	n/a	33	0	n/a	0.184	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	27	77.78	n/a	0.2503	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	30	86.67	n/a	0.2146	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	27	92.59	n/a	0.2503	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	33	63.64	n/a	0.184	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	36	33.33	n/a	0.1578	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	27	85.19	n/a	0.2503	NP Inter(NDs)
Lithium (mg/L)	n/a	0.05	n/a	n/a	n/a	33	48.48	n/a	0.184	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	27	100	n/a	0.2503	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	33	100	n/a	0.184	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	33	100	n/a	0.184	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	33	96.97	n/a	0.184	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.38	n/a	n/a	n/a	33	96.97	n/a	0.184	NP Inter(NDs)

Summary of Confidence Interval - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 9:10 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	HGWC-13	0.4179	0.3221	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-11	0.02977	0.0167	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.0517	0.04505	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03901	0.02941	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03626	0.02958	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5061	0.4541	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-9	0.02617	0.02155	0.01	Yes	10	0	No	0.01	Param.

Summary of Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 9:10 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-10	0.0025	0.0025	0.01	No	11	100	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0025	0.0012	0.01	No	11	72.73	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004773	0.002824	0.01	No	11	18.18	No	0.01	Param.
Arsenic (mg/L)	HGWC-13	0.4179	0.3221	0.01	Yes	11	0	No	0.01	Param.
Arsenic (mg/L)	HGWC-7	0.0025	0.0019	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.0025	0.0025	0.01	No	11	100	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.0025	0.0008	0.01	No	11	90.91	No	0.006	NP (NDs)
Barium (mg/L)	HGWC-10	0.1017	0.07704	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.07174	0.03484	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1315	0.09781	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.09757	0.06654	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07655	0.07145	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08393	0.06965	2	No	11	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-9	0.1321	0.1037	2	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-10	0.3674	0.1304	4	No	12	25	No	0.01	Param.
Fluoride (mg/L)	HGWC-11	0.5384	0.2788	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.4944	0.182	4	No	12	16.67	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.7976	0.4589	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.3088	0.112	4	No	12	16.67	No	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.8035	0.473	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.4039	0.1206	4	No	12	16.67	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.025	0.025	0.05	No	11	100	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-11	0.025	0.025	0.05	No	11	100	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-12	0.0123	0.008922	0.05	No	11	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.04165	0.03111	0.05	No	11	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.003	0.0021	0.05	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0023	0.05	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-9	0.005	0.0027	0.05	No	11	9.091	No	0.006	NP (normality)
Molybdenum (mg/L)	HGWC-10	0.005	0.0013	0.01	No	11	72.73	No	0.006	NP (NDs)
Molybdenum (mg/L)	HGWC-11	0.02977	0.0167	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.0517	0.04505	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03901	0.02941	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03626	0.02958	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5061	0.4541	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-9	0.02617	0.02155	0.01	Yes	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-10	0.005	0.0023	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01545	0.002388	0.05	No	11	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.005	0.0011	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-13	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-7	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-8	0.005	0.0024	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-9	0.005	0.0037	0.05	No	11	90.91	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-11	0.0005	0.00008	0.002	No	11	90.91	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-12	0.0005	0.00009	0.002	No	11	81.82	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004452	0.0003181	0.002	No	11	9.091	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-8	0.0005	0.00008	0.002	No	11	81.82	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-10	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)

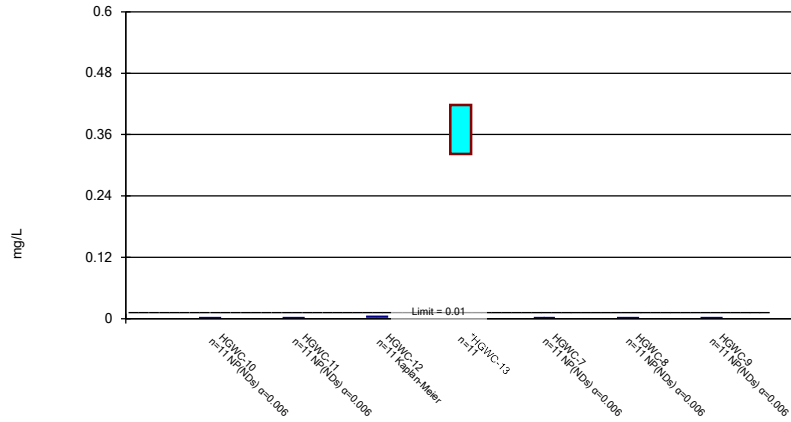
Summary of Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 9:10 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Radium (pCi/L)	HGWC-11	1.48	0.665	5	No	11	81.82	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-12	1.01	0.665	5	No	11	81.82	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-13	0.665	0.665	5	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-7	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-8	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-9	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

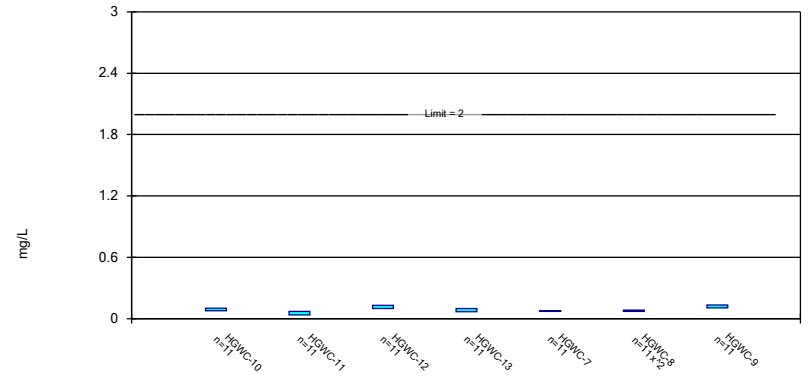
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

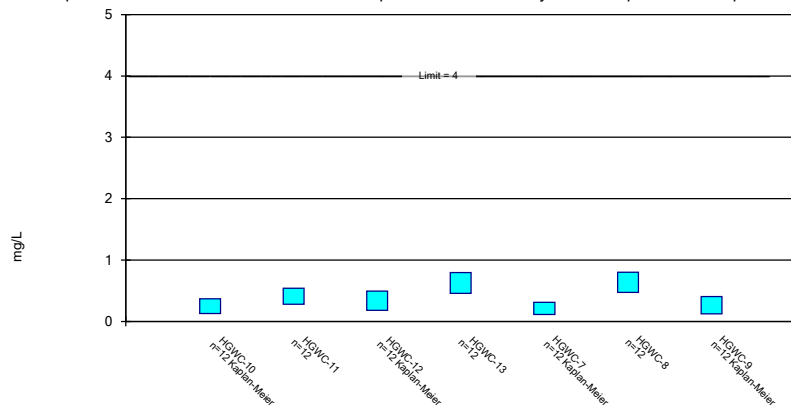
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Constituent: Barium Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

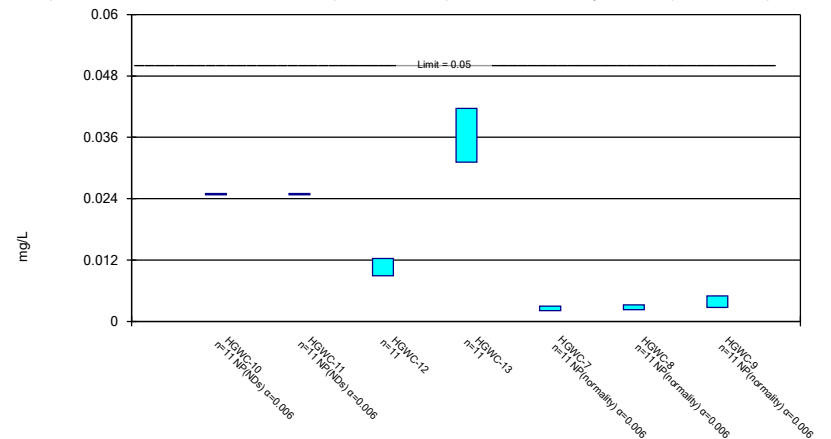
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 1/24/2019 9:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
10/2/2018	<0.005				0.0019 (J)	<0.005	<0.005
10/3/2018		<0.005	0.0037 (J)				
10/5/2018				0.34			
Mean	0.0025	0.002545	0.003727	0.37	0.002445	0.0025	0.002345
Std. Dev.	0	0.001025	0.001212	0.05752	0.0001809	0	0.0005126
Upper Lim.	0.0025	0.0025	0.004773	0.4179	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0012	0.002824	0.3221	0.0019	0.0025	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 1/24/2019 9:10 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811 (J)	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722 (J)	0.0791 (J)	
3/22/2017	0.0962 (J)	0.0346 (J)	0.112 (J)	0.0755 (J)			0.122 (J)
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075 (J)	0.065 (J)	0.1 (J)
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
10/2/2018	0.076				0.078	0.061	0.11
10/3/2018		0.033	0.087				
10/5/2018				0.076			
Mean	0.08939	0.05329	0.1146	0.08205	0.074	0.07664	0.1179
Std. Dev.	0.01482	0.02214	0.0202	0.01862	0.003061	0.009033	0.01707
Upper Lim.	0.1017	0.07174	0.1315	0.09757	0.07655	0.08393	0.1321
Lower Lim.	0.07704	0.03484	0.09781	0.06654	0.07145	0.06965	0.1037

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 1/24/2019 9:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5 (J)	0.67 (J)	0.62 (J)	0.74 (J)	0.51 (J)	0.94 (J)	0.46 (J)
10/20/2016					0.4 (J)	0.56 (J)	0.56 (J)
10/24/2016	<0.3 (*)	0.26 (J)	<0.3 (*)	0.31 (J)			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44 (J)	0.55 (J)	0.73 (J)	1 (J)			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68 (J)			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
10/2/2018	0.17 (J)				<0.3	0.51	0.031 (J)
10/3/2018		0.31	0.15 (J)				
10/5/2018				0.77			
Mean	0.2475	0.4086	0.3343	0.6282	0.2085	0.6383	0.2604
Std. Dev.	0.153	0.1654	0.2108	0.2158	0.1291	0.2106	0.1831
Upper Lim.	0.3674	0.5384	0.4944	0.7976	0.3088	0.8035	0.4039
Lower Lim.	0.1304	0.2788	0.182	0.4589	0.112	0.473	0.1206

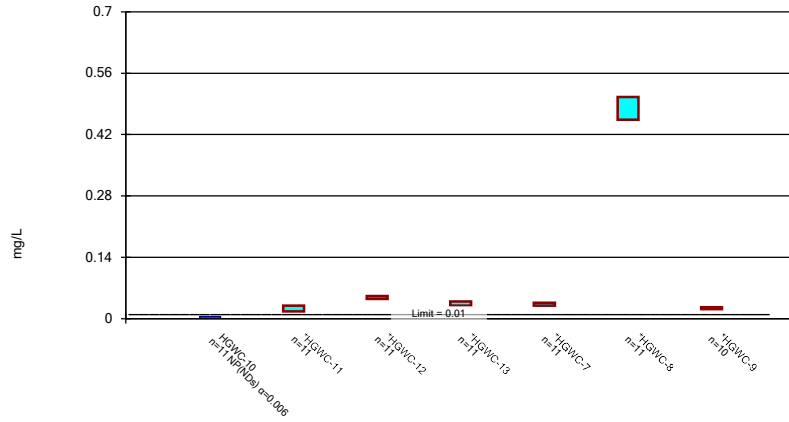
Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 1/24/2019 9:10 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.05	<0.05	
5/23/2016	<0.05	<0.05	0.0107 (J)	0.0422 (J)			<0.05
7/12/2016	<0.05	<0.05	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.05	<0.05	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.05	<0.05	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.05	<0.05	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.05	<0.05	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.05	<0.05	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.05	<0.05	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.05	<0.05	0.008 (J)	0.031 (J)			
6/5/2018	<0.05	<0.05		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
10/2/2018	<0.05				0.003 (J)	0.0025 (J)	0.004 (J)
10/3/2018		<0.05	0.0083 (J)				
10/5/2018				0.027 (J)			
Mean	0.025	0.025	0.01061	0.03638	0.004491	0.004709	0.006091
Std. Dev.	0	0	0.002025	0.006321	0.006807	0.006735	0.006298
Upper Lim.	0.025	0.025	0.0123	0.04165	0.003	0.0032	0.005
Lower Lim.	0.025	0.025	0.008922	0.03111	0.0021	0.0023	0.0027

Parametric and Non-Parametric (NP) Confidence Interval

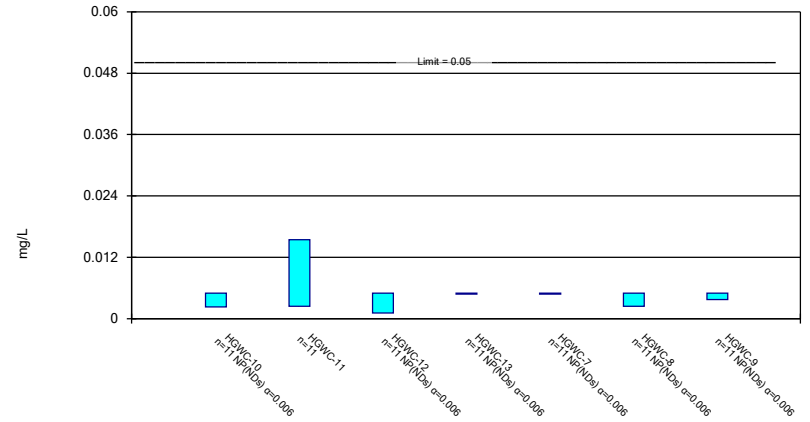
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

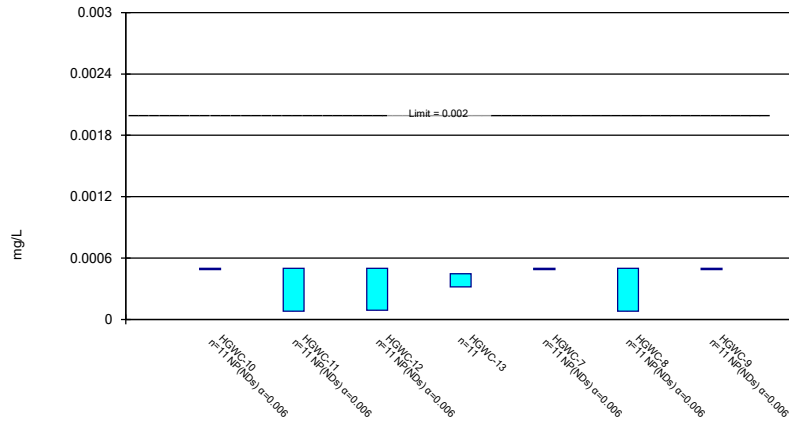
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

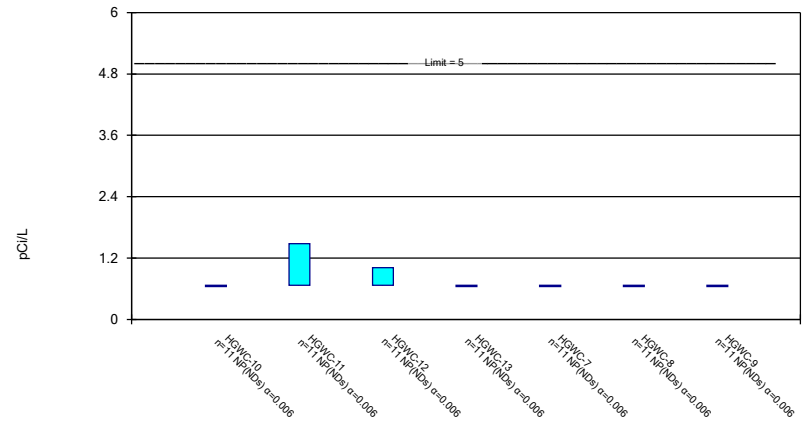
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Total Radium Analysis Run 1/24/2019 9:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 1/24/2019 9:10 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472 (J)	0.477 (o)
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
10/2/2018	<0.01				0.039	0.47	0.028
10/3/2018		0.02	0.054				
10/5/2018				0.033			
Mean	0.004	0.02324	0.04837	0.03421	0.03292	0.4801	0.02386
Std. Dev.	0.001713	0.007845	0.003988	0.005765	0.004008	0.03121	0.002584
Upper Lim.	0.005	0.02977	0.0517	0.03901	0.03626	0.5061	0.02617
Lower Lim.	0.0013	0.0167	0.04505	0.02941	0.02958	0.4541	0.02155

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 1/24/2019 9:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
10/2/2018	0.0023 (J)				<0.01	<0.01	<0.01
10/3/2018		0.009 (J)	<0.01				
10/5/2018				<0.01			
Mean	0.004673	0.008918	0.004645	0.005	0.005	0.004764	0.004882
Std. Dev.	0.000832	0.007837	0.001176	0	0	0.0007839	0.000392
Upper Lim.	0.005	0.01545	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0023	0.002388	0.0011	0.005	0.005	0.0024	0.0037

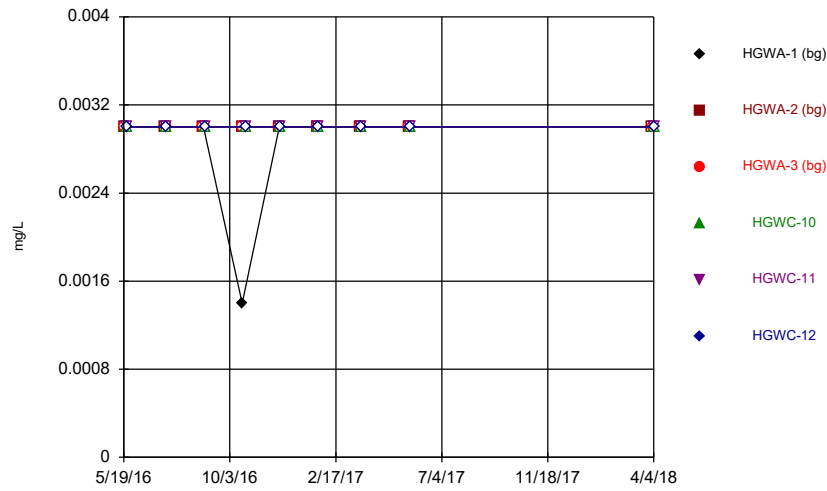
Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 1/24/2019 9:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

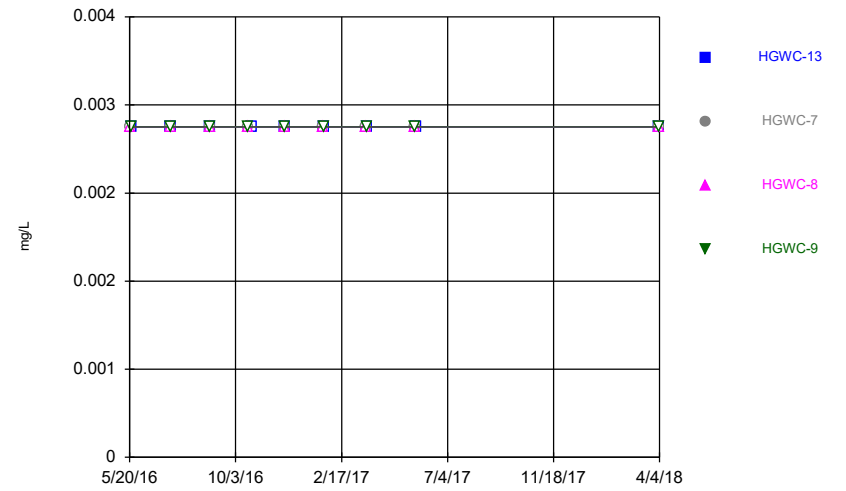
	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	<0.001 (*)	<0.001 (*)	<0.001 (*)	<0.001	<0.001 (*)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
10/2/2018	<0.001				<0.001	<0.001	<0.001
10/3/2018		<0.001	<0.001				
10/5/2018				0.00025 (J)			
Mean	0.0005	0.0004618	0.0004264	0.0003816	0.0005	0.0004245	0.0005
Std. Dev.	0	0.0001266	0.0001638	7.627E-05	0	0.0001679	0
Upper Lim.	0.0005	0.0005	0.0005	0.0004452	0.0005	0.0005	0.0005
Lower Lim.	0.0005	8E-05	9E-05	0.0003181	0.0005	8E-05	0.0005

Time Series



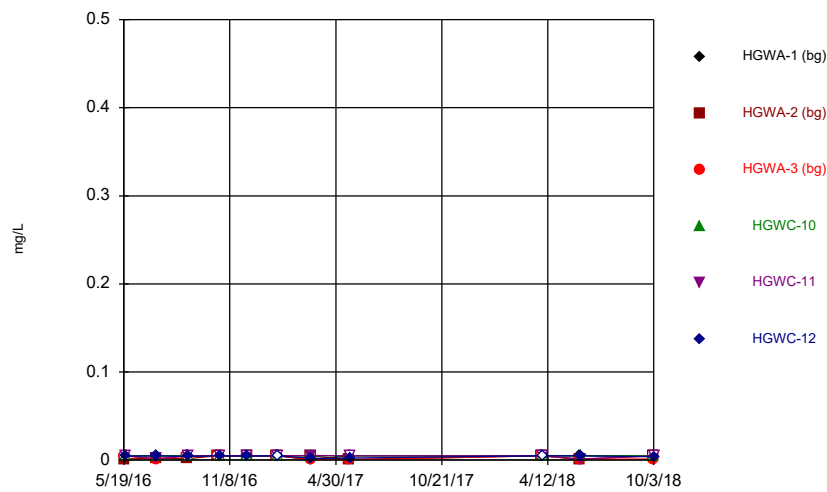
Constituent: Antimony Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



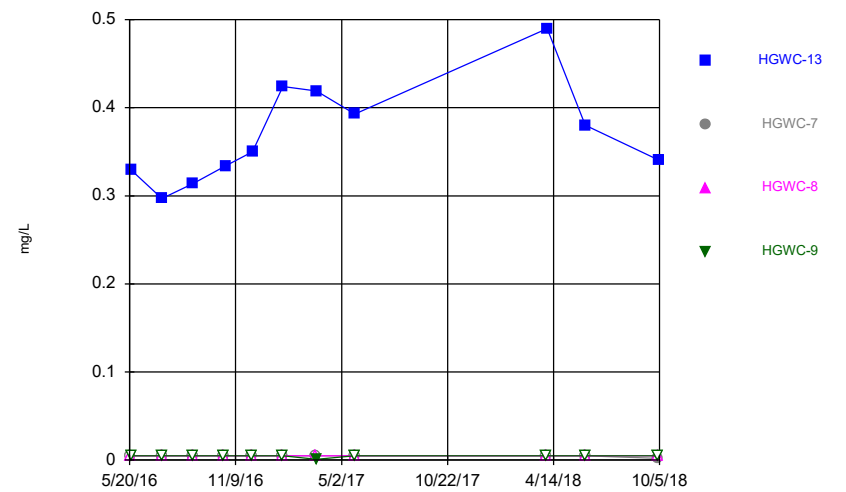
Constituent: Antimony Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



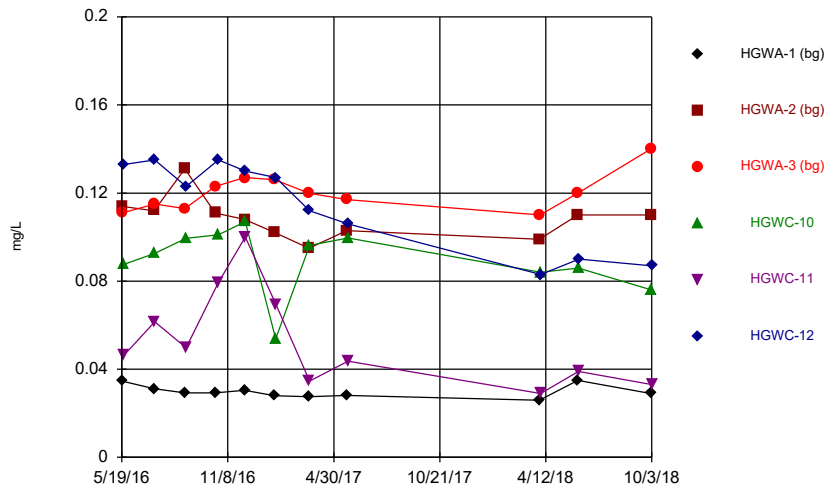
Constituent: Arsenic Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



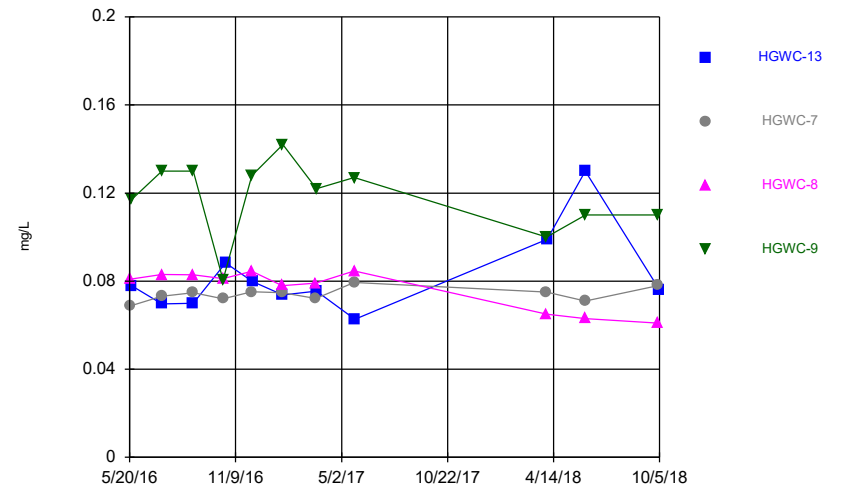
Constituent: Arsenic Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



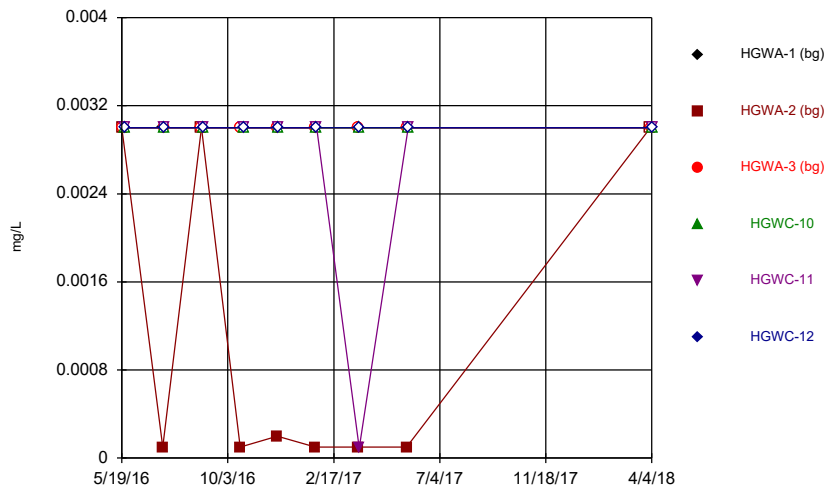
Constituent: Barium Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



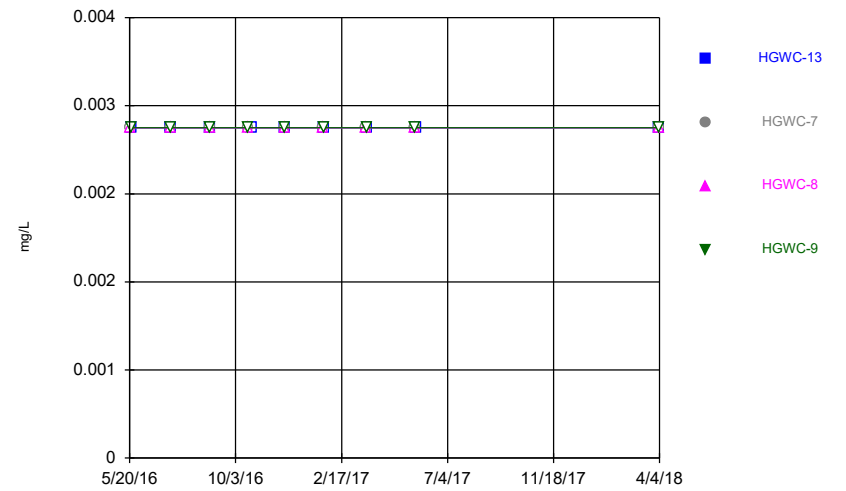
Constituent: Barium Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



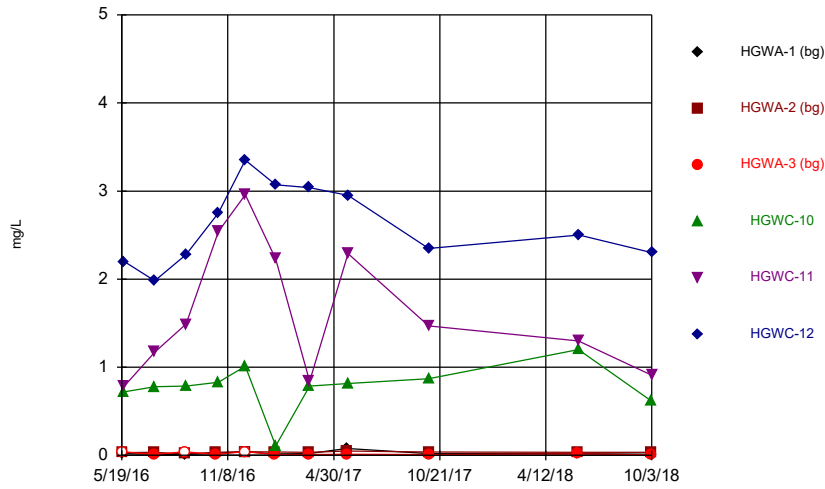
Constituent: Beryllium Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



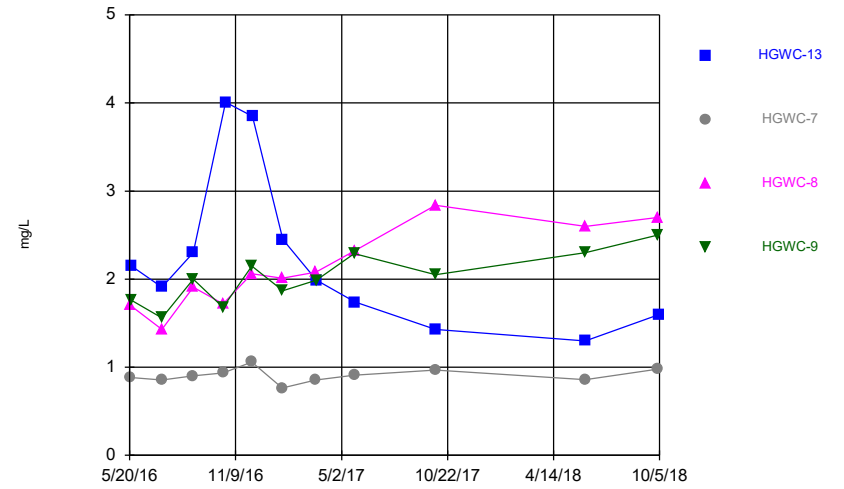
Constituent: Beryllium Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



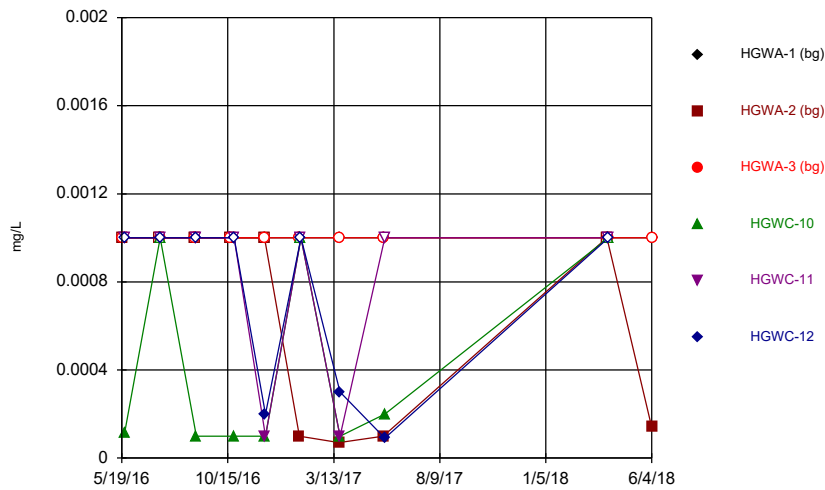
Constituent: Boron Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



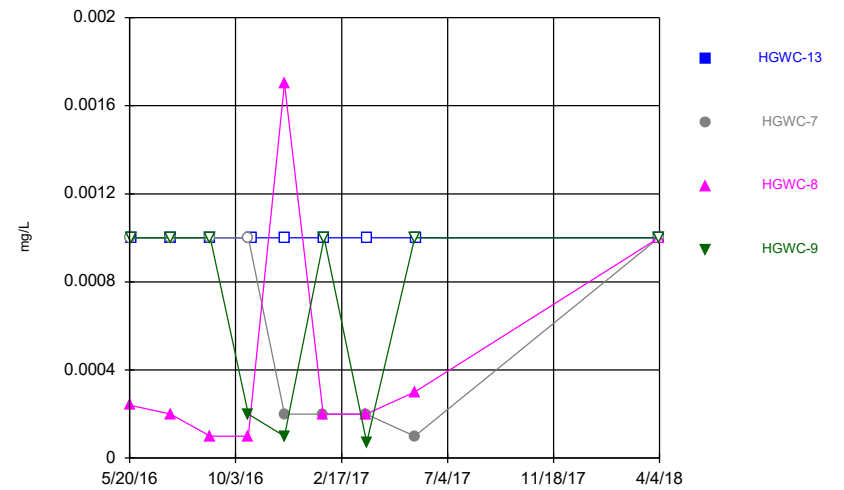
Constituent: Boron Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



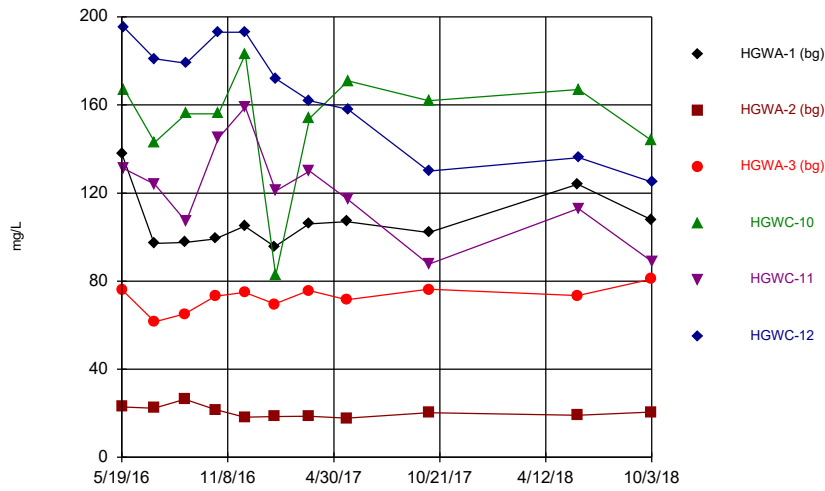
Constituent: Cadmium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



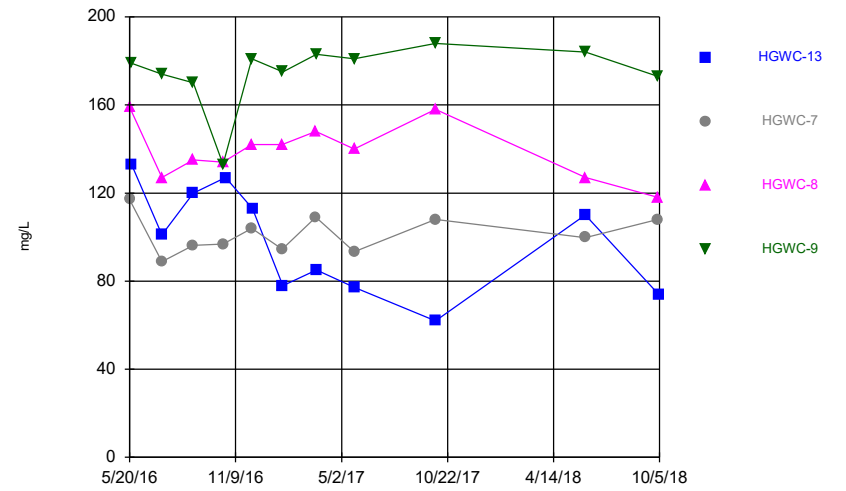
Constituent: Cadmium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



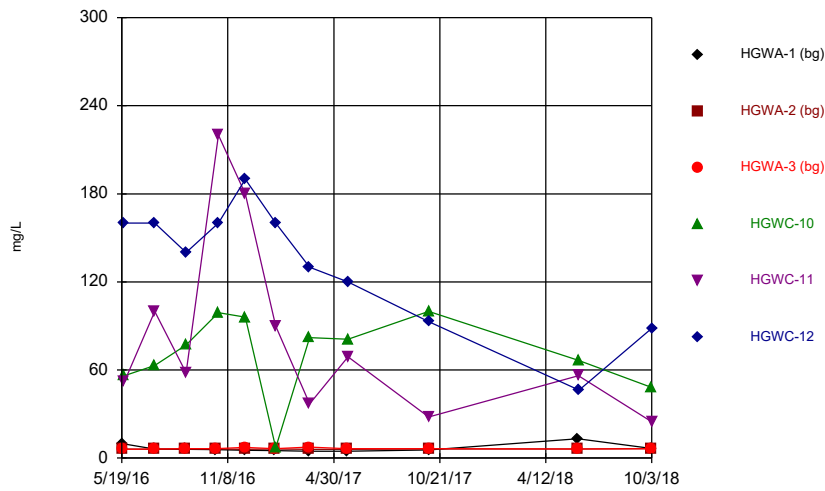
Constituent: Calcium Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



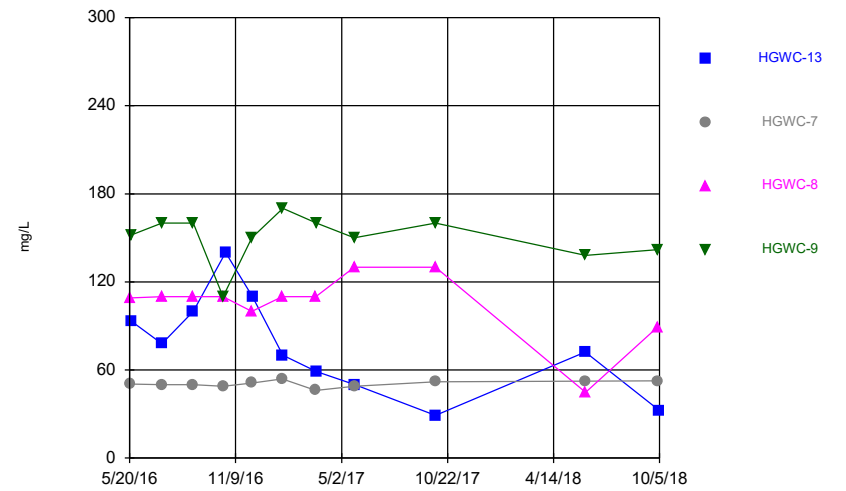
Constituent: Calcium Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



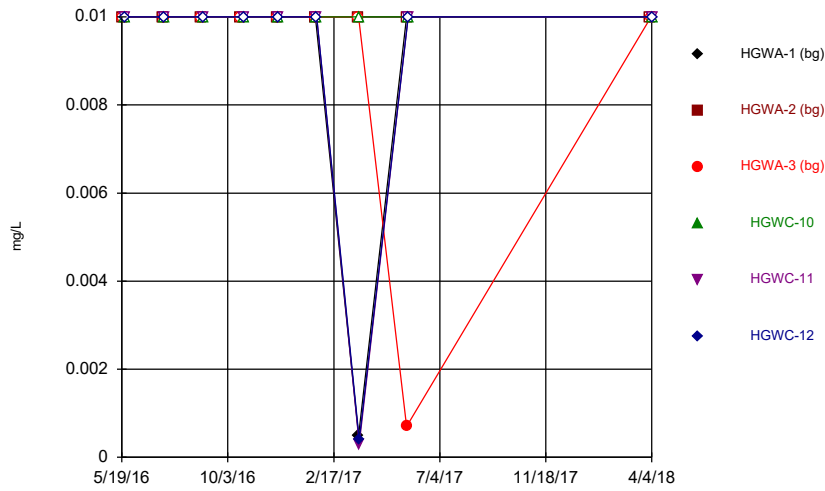
Constituent: Chloride Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



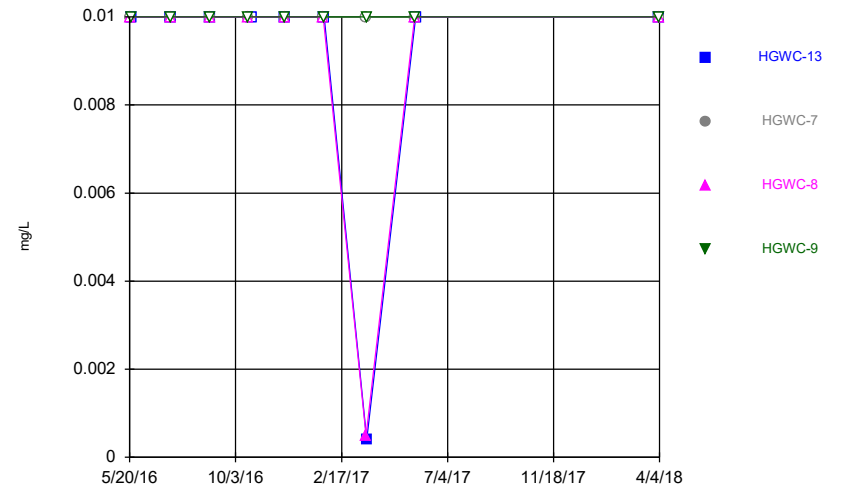
Constituent: Chloride Analysis Run 1/24/2019 10:20 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



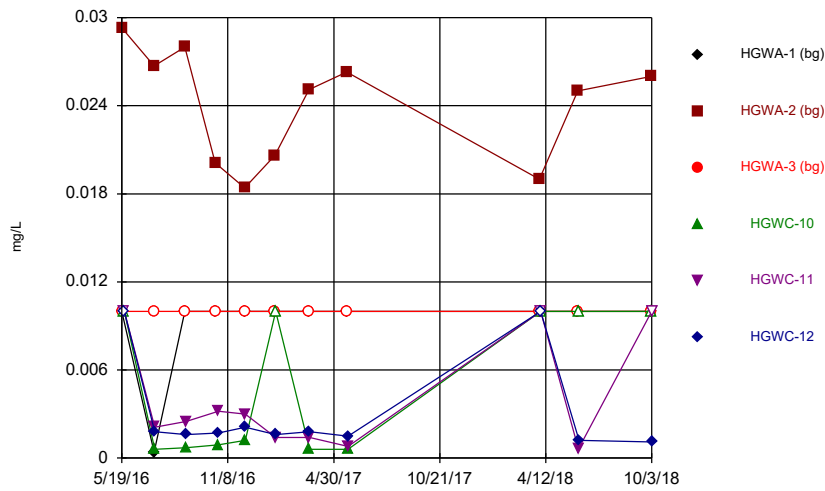
Constituent: Chromium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



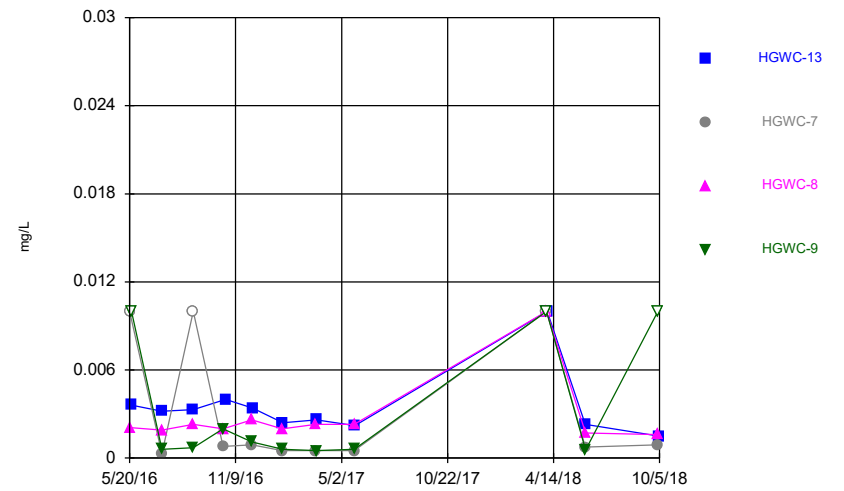
Constituent: Chromium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



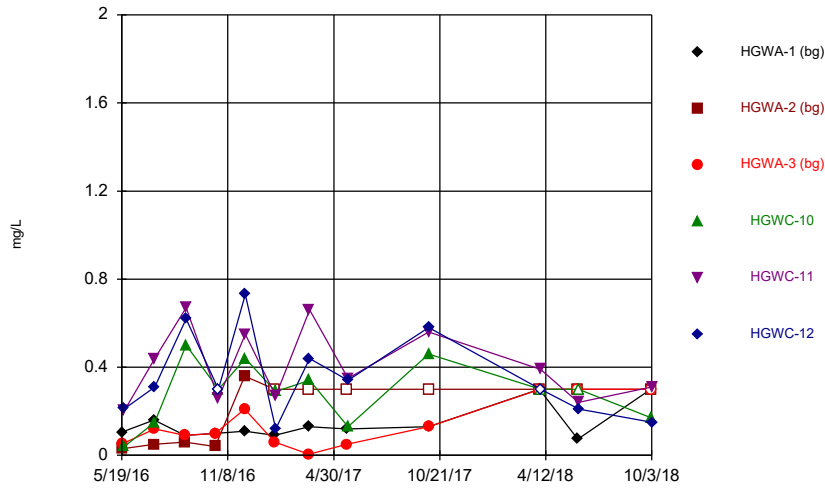
Constituent: Cobalt Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



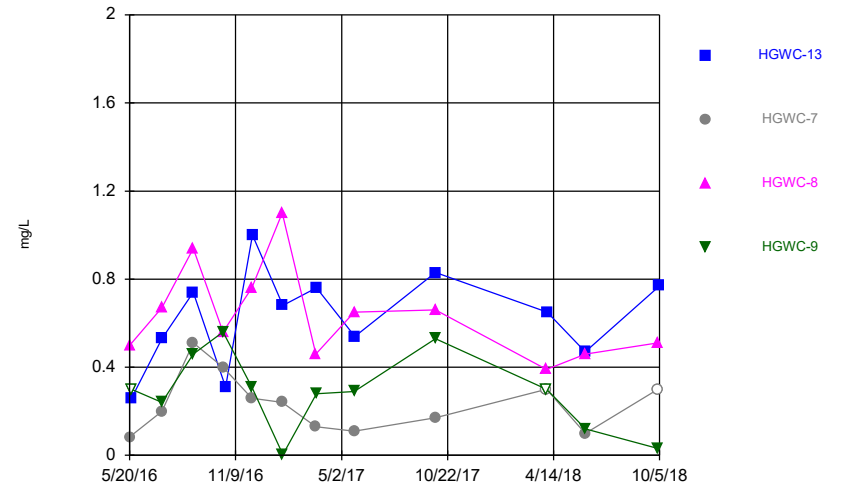
Constituent: Cobalt Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



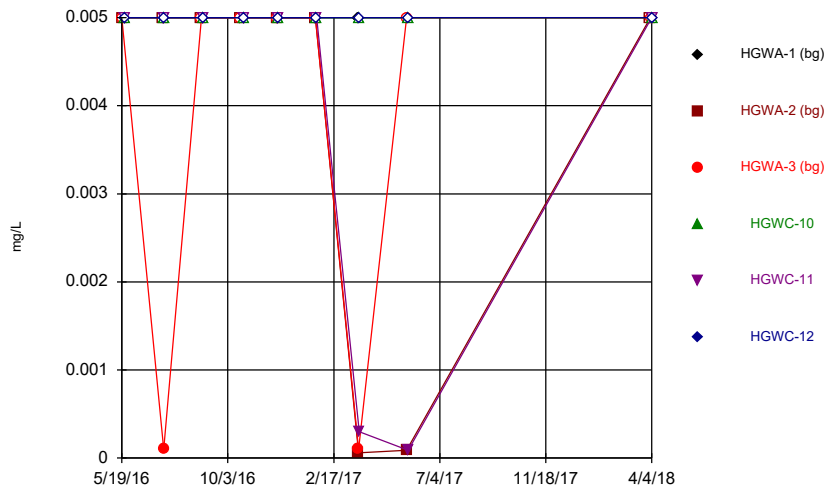
Constituent: Fluoride Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



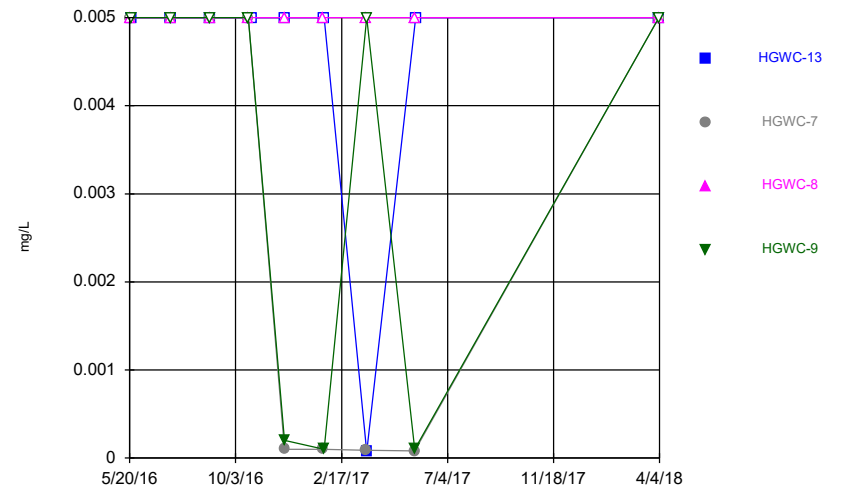
Constituent: Fluoride Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



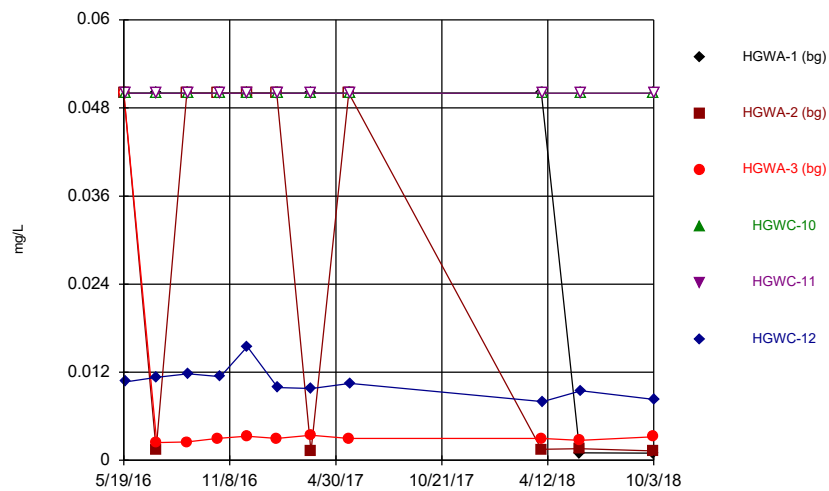
Constituent: Lead Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



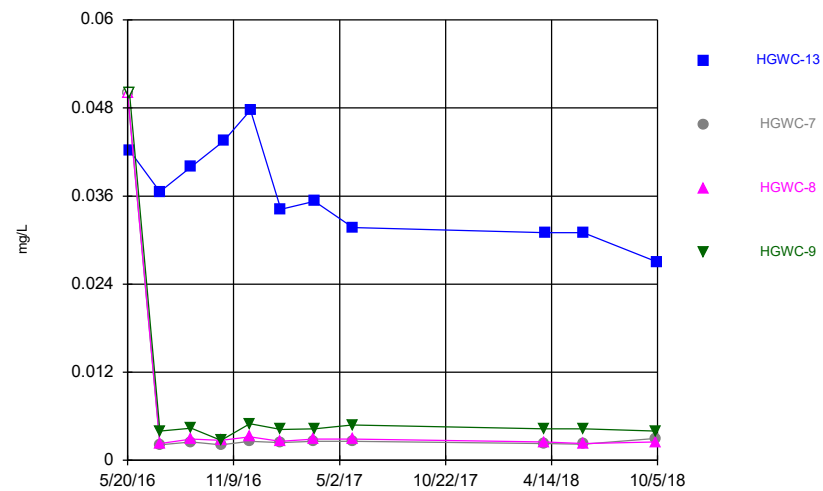
Constituent: Lead Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



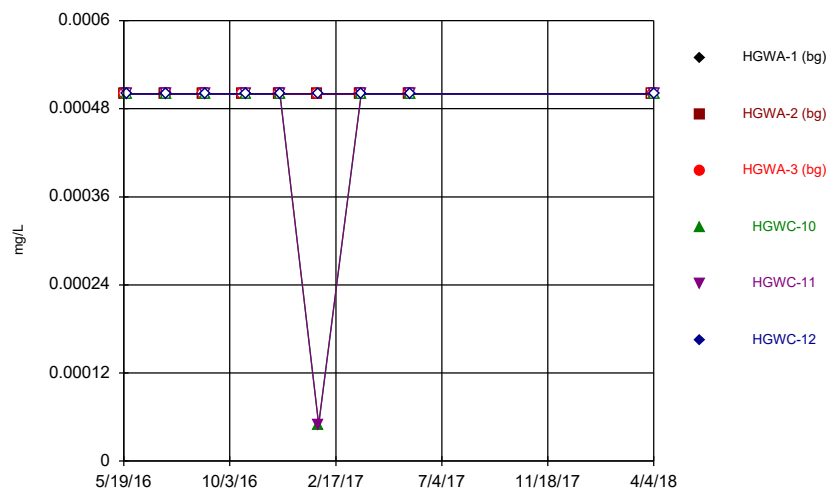
Constituent: Lithium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



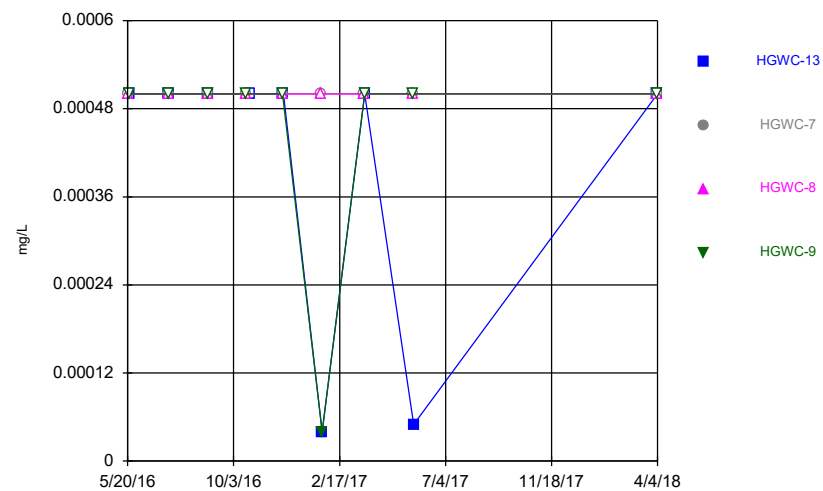
Constituent: Lithium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



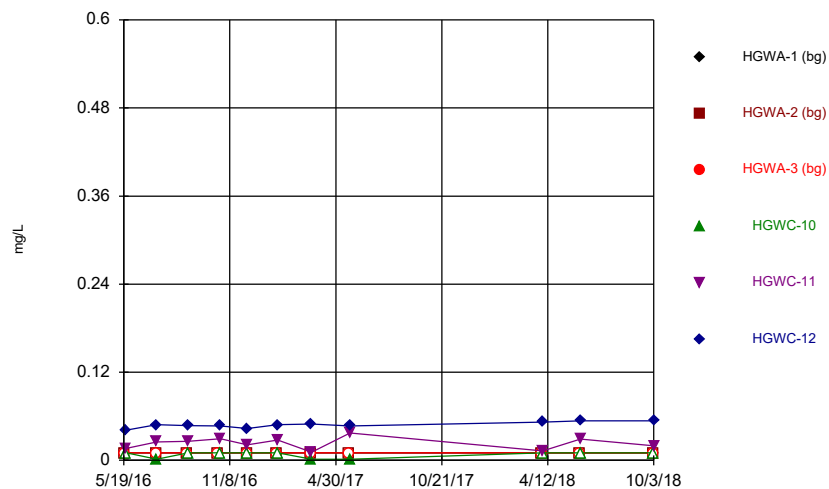
Constituent: Mercury Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



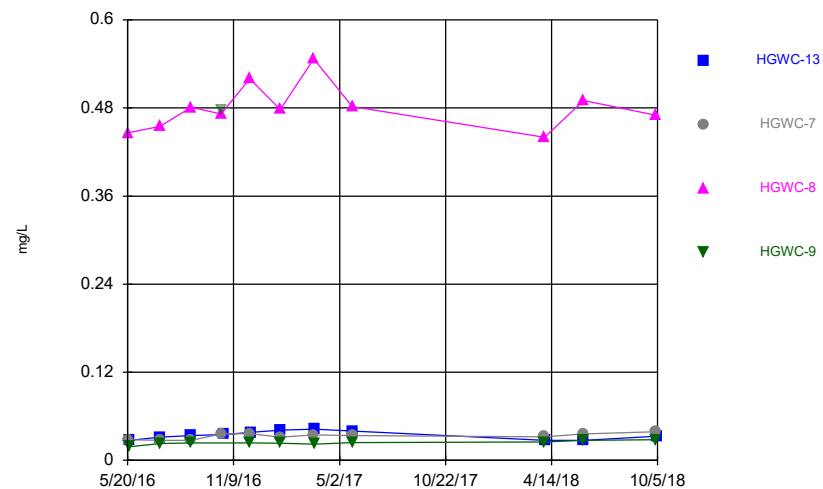
Constituent: Mercury Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



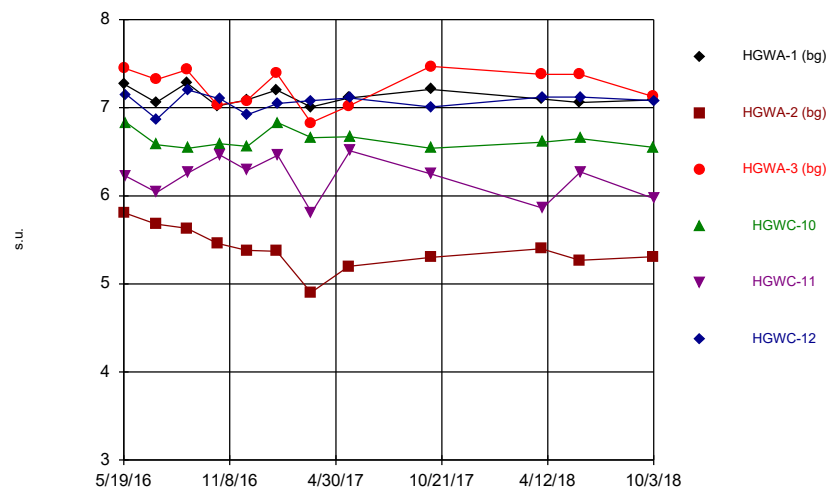
Constituent: Molybdenum Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



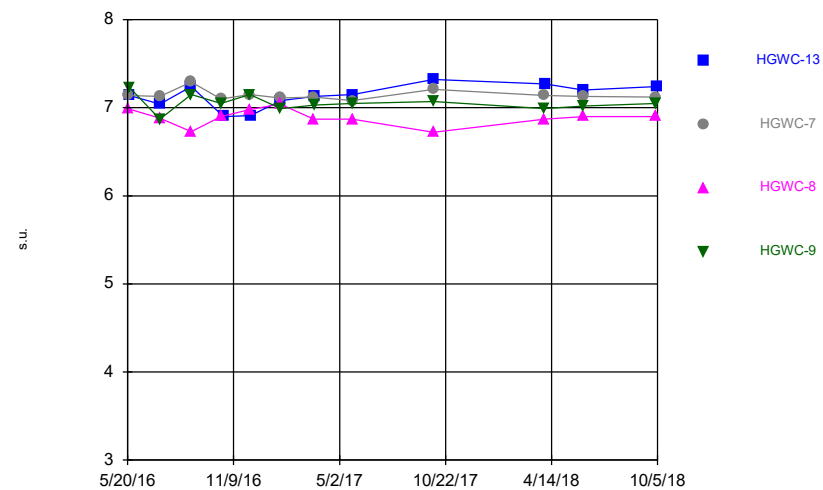
Constituent: Molybdenum Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



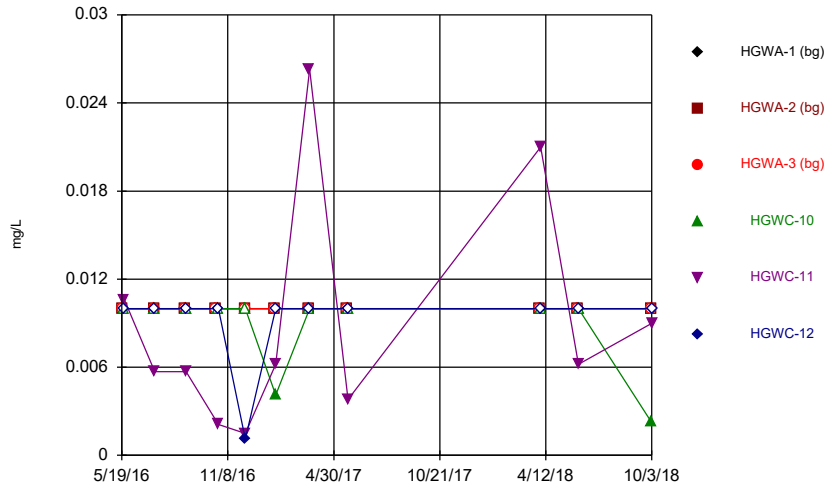
Constituent: pH Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



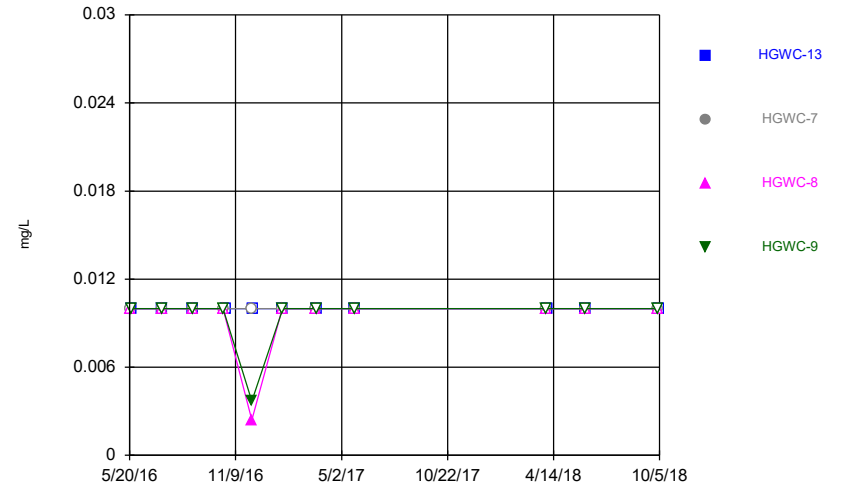
Constituent: pH Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



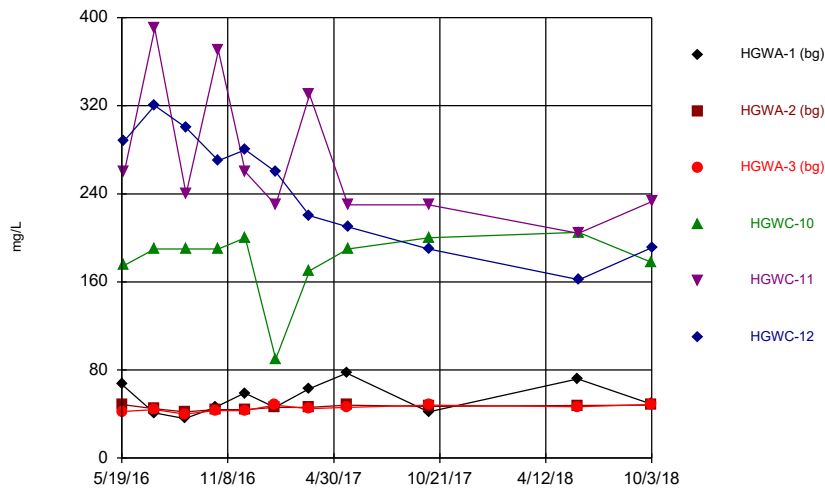
Constituent: Selenium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



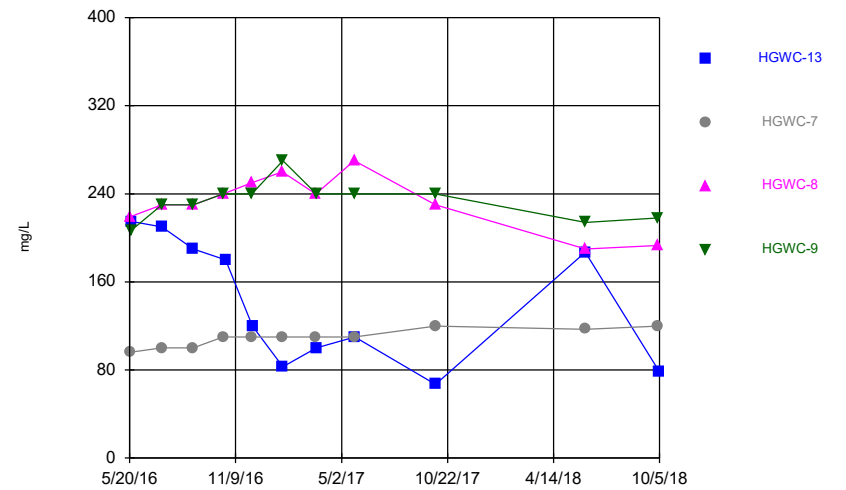
Constituent: Selenium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



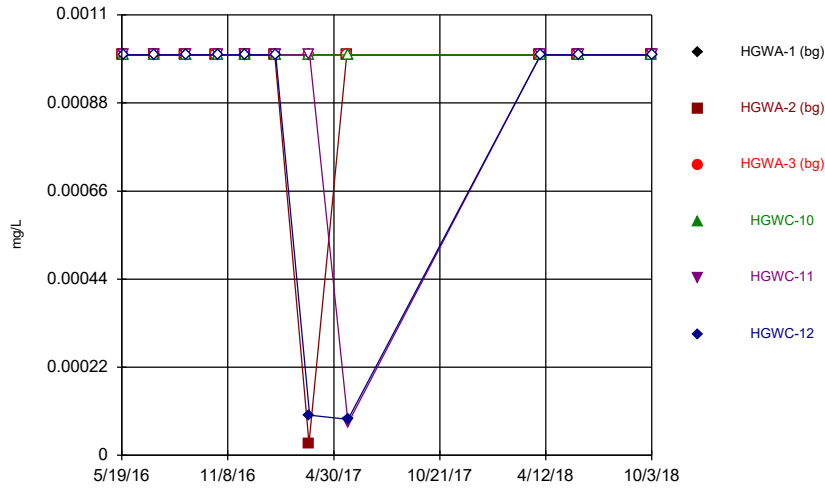
Constituent: Sulfate Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



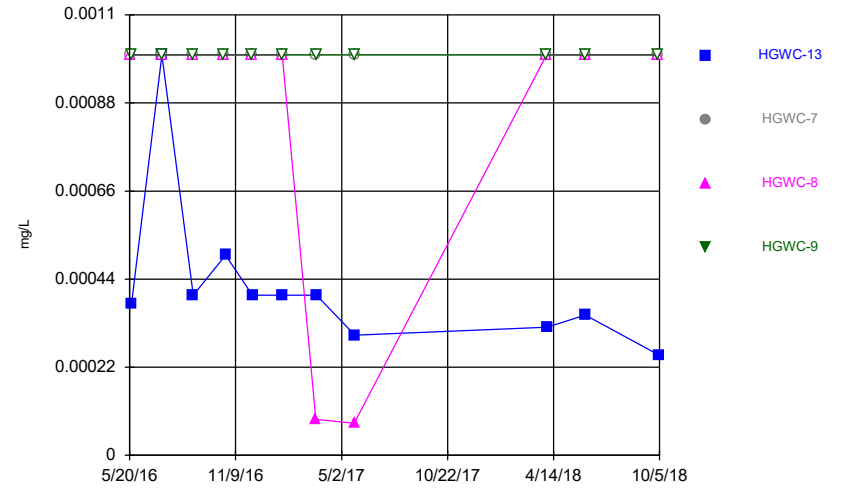
Constituent: Sulfate Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



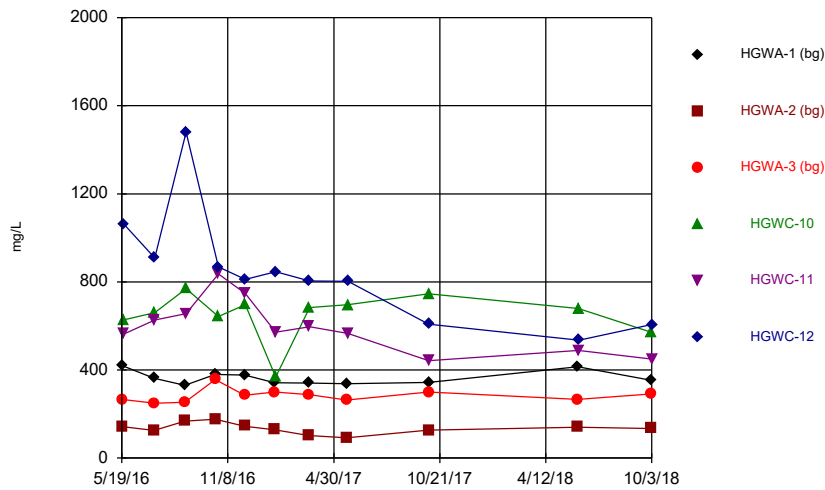
Constituent: Thallium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



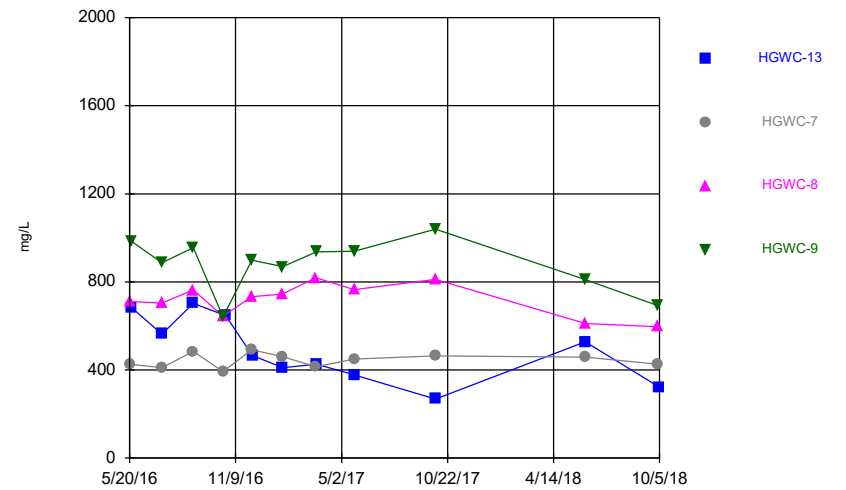
Constituent: Thallium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



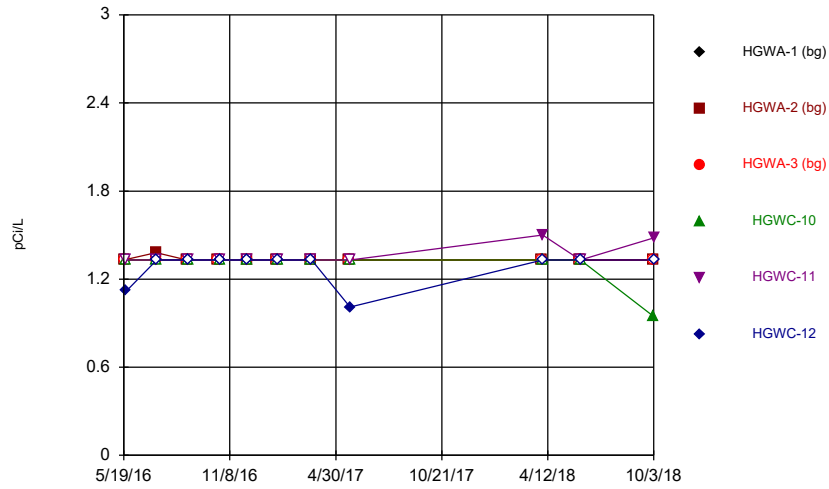
Constituent: Total Dissolved Solids Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



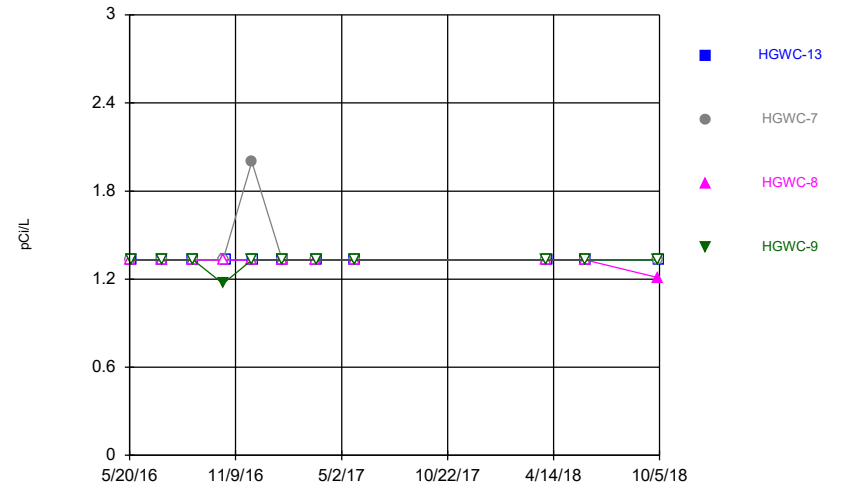
Constituent: Total Dissolved Solids Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



Constituent: Total Radium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



Constituent: Total Radium Analysis Run 1/24/2019 10:20 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

USEPA Based Groundwater Protection
Standards Statistical Analysis Package

AM 02

Table B-2
USEPA Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia
AM 02

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS ¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.14	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	0.006	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead ³	7439-92-1	mg/L	0.015	0.005	0.015
Lithium ²	7439-93-2	mg/L	0.04	0.025	0.04
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.38	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Regional Screening Level applied for constituent per CCR Rule Amendment, July 30, 2018.

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

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 10:39 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	27	96.3	n/a	0.2503	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	33	66.67	n/a	0.184	NP Inter(NDs)
Barium (mg/L)	n/a	0.14	n/a	n/a	n/a	33	0	n/a	0.184	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	27	77.78	n/a	0.2503	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	30	86.67	n/a	0.2146	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	27	92.59	n/a	0.2503	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	33	63.64	n/a	0.184	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	36	33.33	n/a	0.1578	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	27	85.19	n/a	0.2503	NP Inter(NDs)
Lithium (mg/L)	n/a	0.025	n/a	n/a	n/a	33	48.48	n/a	0.184	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	27	100	n/a	0.2503	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	33	100	n/a	0.184	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	33	100	n/a	0.184	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	33	96.97	n/a	0.184	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.38	n/a	n/a	n/a	33	96.97	n/a	0.184	NP Inter(NDs)

Summary of Confidence Interval - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 11:10 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	HGWC-13	0.4179	0.3221	0.01	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5061	0.4541	0.1	Yes	11	0	No	0.01	Param.

Summary of Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 11:10 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-10	0.0025	0.0025	0.01	No	11	100	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0025	0.0012	0.01	No	11	72.73	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004773	0.002824	0.01	No	11	18.18	No	0.01	Param.
Arsenic (mg/L)	HGWC-13	0.4179	0.3221	0.01	Yes	11	0	No	0.01	Param.
Arsenic (mg/L)	HGWC-7	0.0025	0.0019	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.0025	0.0025	0.01	No	11	100	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.0025	0.0008	0.01	No	11	90.91	No	0.006	NP (NDs)
Barium (mg/L)	HGWC-10	0.1017	0.07704	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.07174	0.03484	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1315	0.09781	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.09757	0.06654	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07655	0.07145	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08393	0.06965	2	No	11	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-9	0.1321	0.1037	2	No	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-10	0.3674	0.1304	4	No	12	25	No	0.01	Param.
Fluoride (mg/L)	HGWC-11	0.5384	0.2788	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.4944	0.182	4	No	12	16.67	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.7976	0.4589	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.3088	0.112	4	No	12	16.67	No	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.8035	0.473	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.4039	0.1206	4	No	12	16.67	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.0125	0.0125	0.04	No	11	100	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-11	0.0125	0.0125	0.04	No	11	100	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-12	0.0123	0.008922	0.04	No	11	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.04165	0.03111	0.04	No	11	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.003	0.0021	0.04	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0023	0.04	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-9	0.005	0.0027	0.04	No	11	9.091	No	0.006	NP (normality)
Molybdenum (mg/L)	HGWC-10	0.005	0.0013	0.1	No	11	72.73	No	0.006	NP (NDs)
Molybdenum (mg/L)	HGWC-11	0.02977	0.0167	0.1	No	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.0517	0.04505	0.1	No	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03901	0.02941	0.1	No	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03626	0.02958	0.1	No	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-8	0.5061	0.4541	0.1	Yes	11	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-9	0.02617	0.02155	0.1	No	10	0	No	0.01	Param.
Selenium (mg/L)	HGWC-10	0.005	0.0023	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01545	0.002388	0.05	No	11	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.005	0.0011	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-13	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-7	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-8	0.005	0.0024	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-9	0.005	0.0037	0.05	No	11	90.91	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-11	0.0005	0.00008	0.002	No	11	90.91	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-12	0.0005	0.00009	0.002	No	11	81.82	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004452	0.0003181	0.002	No	11	9.091	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-8	0.0005	0.00008	0.002	No	11	81.82	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-10	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)

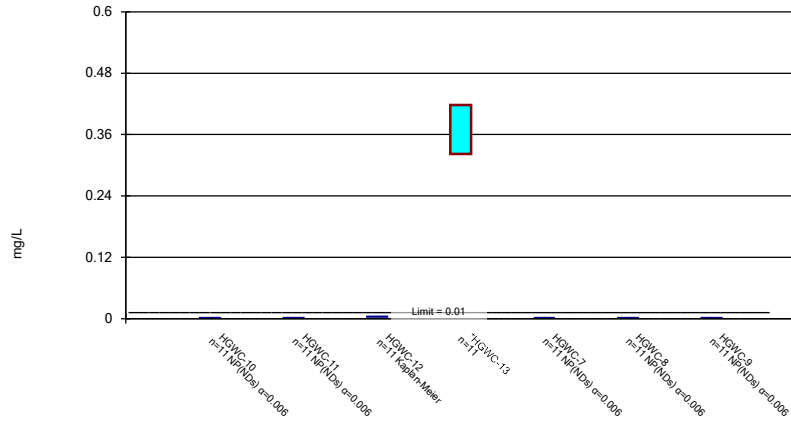
Summary of Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 1/24/2019, 11:10 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Radium (pCi/L)	HGWC-11	1.48	0.665	5	No	11	81.82	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-12	1.01	0.665	5	No	11	81.82	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-13	0.665	0.665	5	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-7	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-8	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-9	0.665	0.665	5	No	11	90.91	No	0.006	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

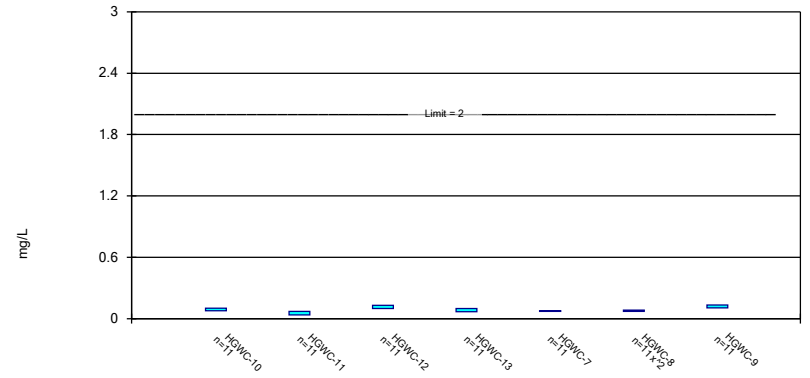
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

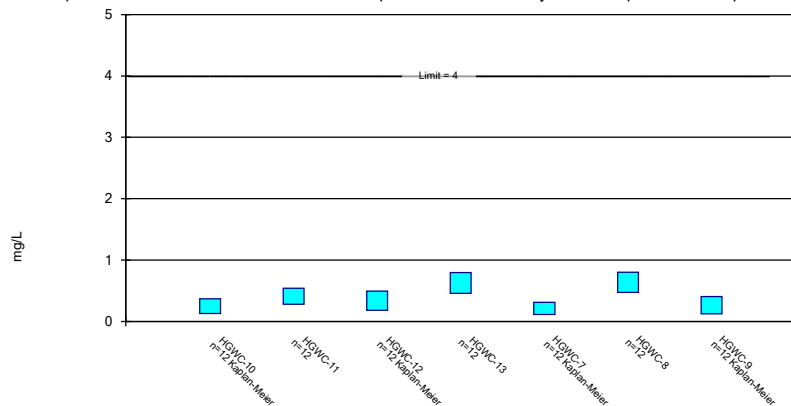
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Constituent: Barium Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

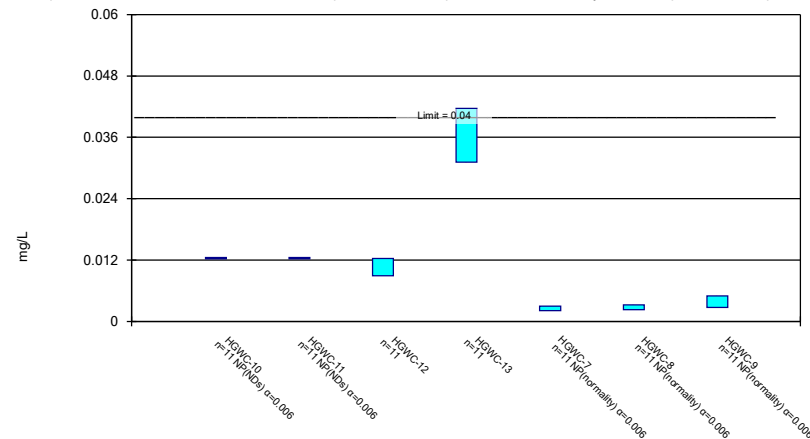
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 1/24/2019 11:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
10/2/2018	<0.005				0.0019 (J)	<0.005	<0.005
10/3/2018		<0.005	0.0037 (J)				
10/5/2018				0.34			
Mean	0.0025	0.002545	0.003727	0.37	0.002445	0.0025	0.002345
Std. Dev.	0	0.001025	0.001212	0.05752	0.0001809	0	0.0005126
Upper Lim.	0.0025	0.0025	0.004773	0.4179	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0012	0.002824	0.3221	0.0019	0.0025	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 1/24/2019 11:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811 (J)	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722 (J)	0.0791 (J)	
3/22/2017	0.0962 (J)	0.0346 (J)	0.112 (J)	0.0755 (J)			0.122 (J)
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075 (J)	0.065 (J)	0.1 (J)
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
10/2/2018	0.076				0.078	0.061	0.11
10/3/2018		0.033	0.087				
10/5/2018				0.076			
Mean	0.08939	0.05329	0.1146	0.08205	0.074	0.07664	0.1179
Std. Dev.	0.01482	0.02214	0.0202	0.01862	0.003061	0.009033	0.01707
Upper Lim.	0.1017	0.07174	0.1315	0.09757	0.07655	0.08393	0.1321
Lower Lim.	0.07704	0.03484	0.09781	0.06654	0.07145	0.06965	0.1037

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 1/24/2019 11:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5 (J)	0.67 (J)	0.62 (J)	0.74 (J)	0.51 (J)	0.94 (J)	0.46 (J)
10/20/2016					0.4 (J)	0.56 (J)	0.56 (J)
10/24/2016	<0.3 (*)	0.26 (J)	<0.3 (*)	0.31 (J)			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44 (J)	0.55 (J)	0.73 (J)	1 (J)			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68 (J)			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
10/2/2018	0.17 (J)				<0.3	0.51	0.031 (J)
10/3/2018		0.31	0.15 (J)				
10/5/2018				0.77			
Mean	0.2475	0.4086	0.3343	0.6282	0.2085	0.6383	0.2604
Std. Dev.	0.153	0.1654	0.2108	0.2158	0.1291	0.2106	0.1831
Upper Lim.	0.3674	0.5384	0.4944	0.7976	0.3088	0.8035	0.4039
Lower Lim.	0.1304	0.2788	0.182	0.4589	0.112	0.473	0.1206

Confidence Interval

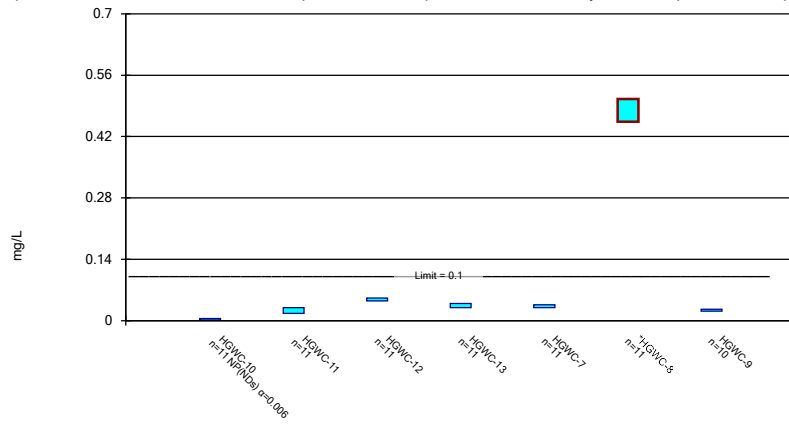
Constituent: Lithium (mg/L) Analysis Run 1/24/2019 11:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.025	<0.025	
5/23/2016	<0.025	<0.025	0.0107 (J)	0.0422 (J)			<0.025
7/12/2016	<0.025	<0.025	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.025	<0.025	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.025	<0.025	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.025	<0.025	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.025	<0.025	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.025	<0.025	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.025	<0.025	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.025	<0.025	0.008 (J)	0.031 (J)			
6/5/2018	<0.025	<0.025		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
10/2/2018	<0.025				0.003 (J)	0.0025 (J)	0.004 (J)
10/3/2018		<0.025	0.0083 (J)				
10/5/2018				0.027 (J)			
Mean	0.0125	0.0125	0.01061	0.03638	0.003355	0.003573	0.004955
Std. Dev.	0	0	0.002025	0.006321	0.003045	0.002974	0.00257
Upper Lim.	0.0125	0.0125	0.0123	0.04165	0.003	0.0032	0.005
Lower Lim.	0.0125	0.0125	0.008922	0.03111	0.0021	0.0023	0.0027

Parametric and Non-Parametric (NP) Confidence Interval

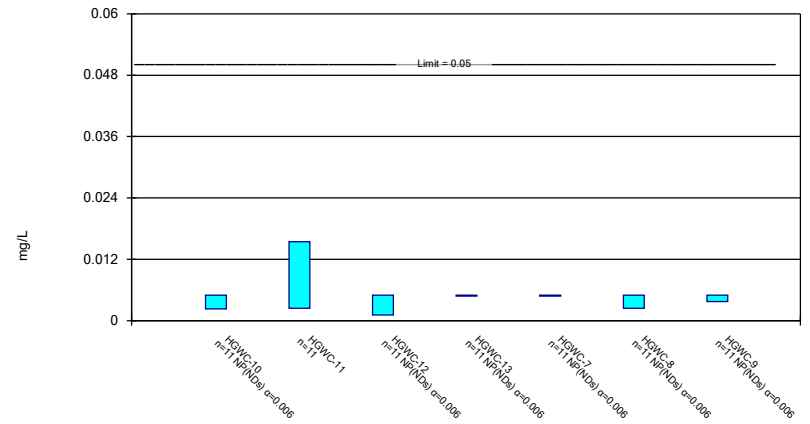
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

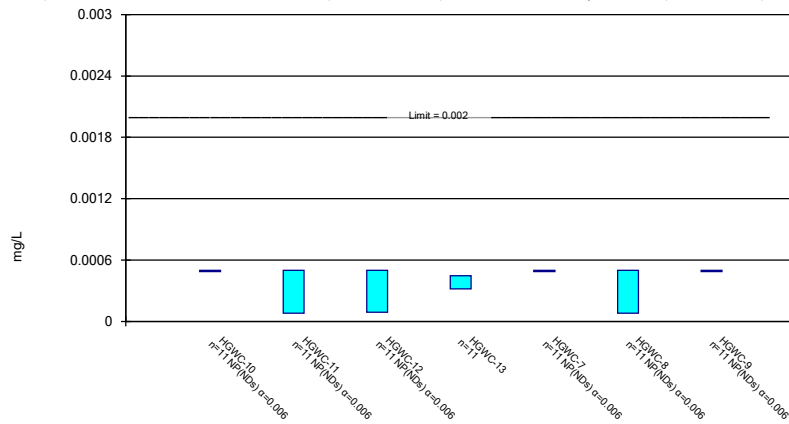
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

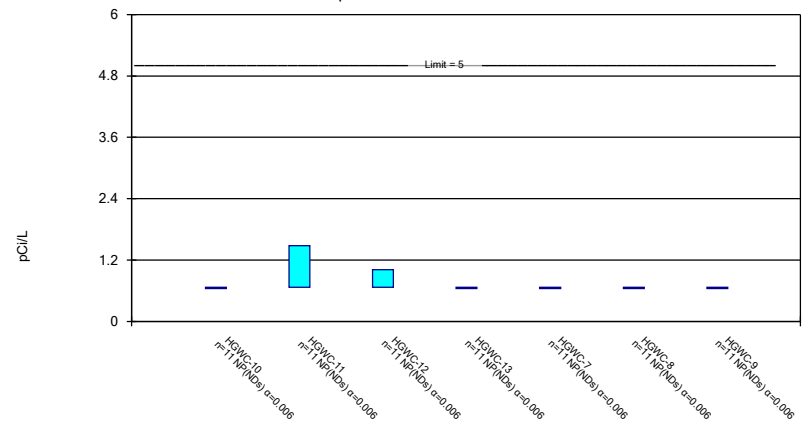
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Total Radium Analysis Run 1/24/2019 11:08 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 1/24/2019 11:10 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472 (J)	0.477 (o)
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
10/2/2018	<0.01				0.039	0.47	0.028
10/3/2018		0.02	0.054				
10/5/2018				0.033			
Mean	0.004	0.02324	0.04837	0.03421	0.03292	0.4801	0.02386
Std. Dev.	0.001713	0.007845	0.003988	0.005765	0.004008	0.03121	0.002584
Upper Lim.	0.005	0.02977	0.0517	0.03901	0.03626	0.5061	0.02617
Lower Lim.	0.0013	0.0167	0.04505	0.02941	0.02958	0.4541	0.02155

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 1/24/2019 11:10 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
10/2/2018	0.0023 (J)				<0.01	<0.01	<0.01
10/3/2018		0.009 (J)	<0.01				
10/5/2018				<0.01			
Mean	0.004673	0.008918	0.004645	0.005	0.005	0.004764	0.004882
Std. Dev.	0.000832	0.007837	0.001176	0	0	0.0007839	0.000392
Upper Lim.	0.005	0.01545	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0023	0.002388	0.0011	0.005	0.005	0.0024	0.0037

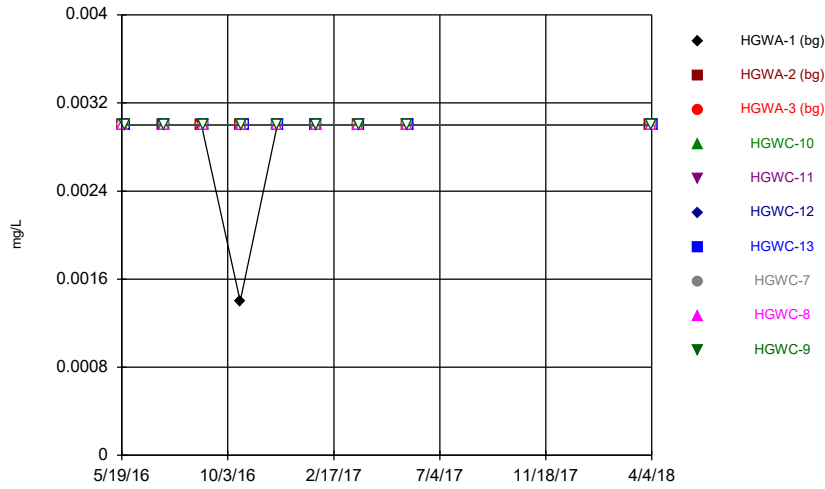
Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 1/24/2019 11:10 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

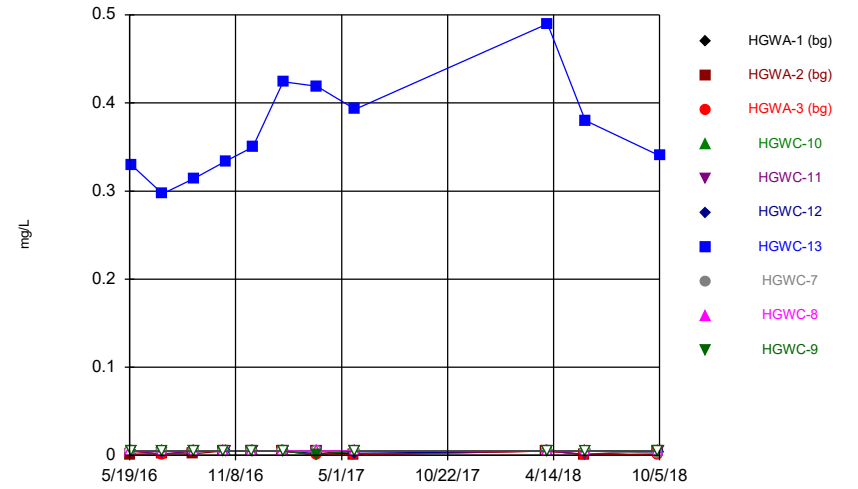
	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	<0.001 (*)	<0.001 (*)	<0.001 (*)	<0.001	<0.001 (*)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
10/2/2018	<0.001				<0.001	<0.001	<0.001
10/3/2018		<0.001	<0.001				
10/5/2018				0.00025 (J)			
Mean	0.0005	0.0004618	0.0004264	0.0003816	0.0005	0.0004245	0.0005
Std. Dev.	0	0.0001266	0.0001638	7.627E-05	0	0.0001679	0
Upper Lim.	0.0005	0.0005	0.0005	0.0004452	0.0005	0.0005	0.0005
Lower Lim.	0.0005	8E-05	9E-05	0.0003181	0.0005	8E-05	0.0005

Time Series



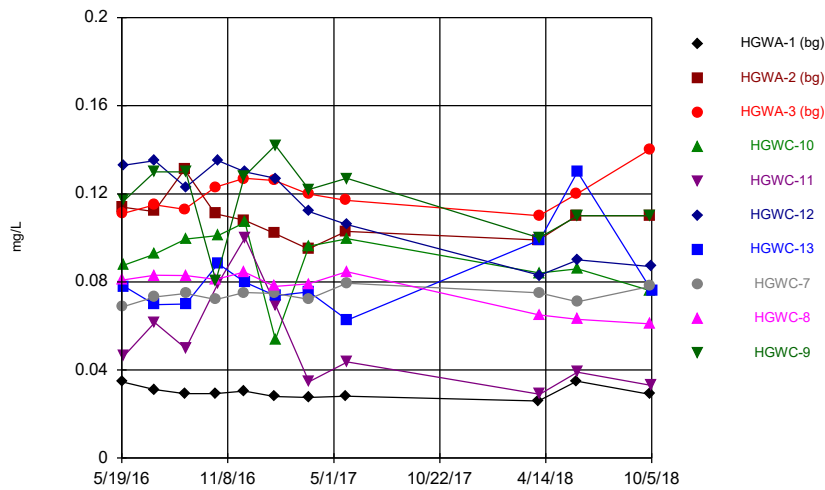
Constituent: Antimony Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



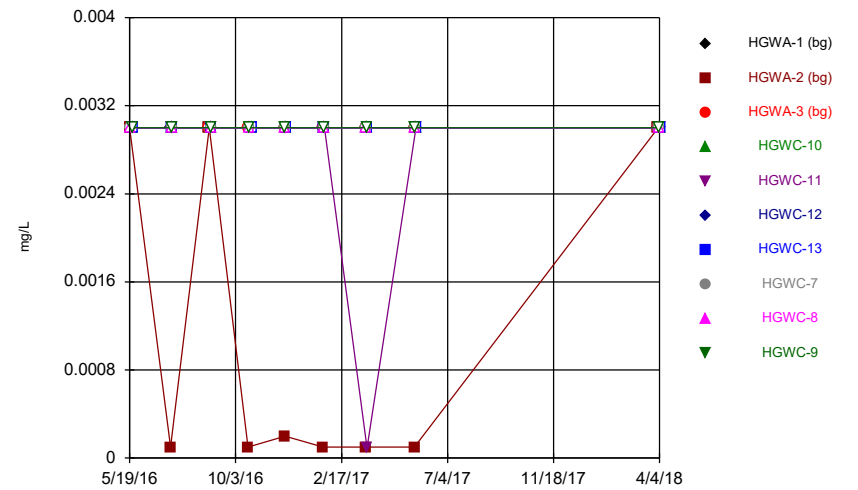
Constituent: Arsenic Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



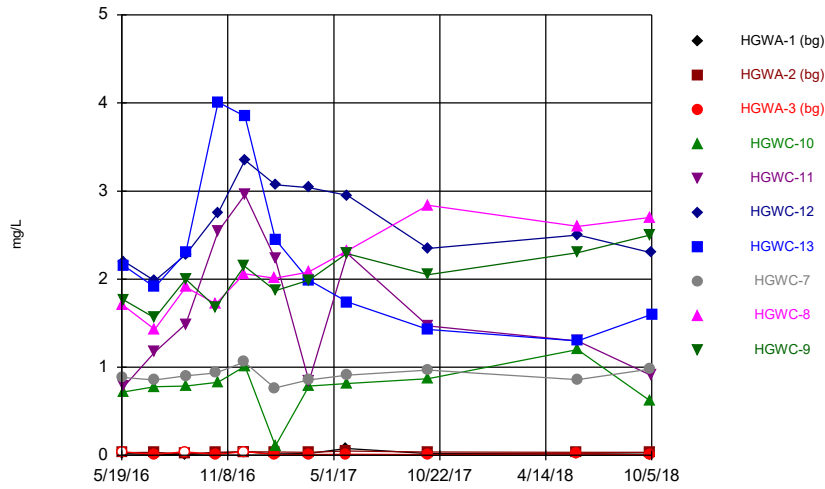
Constituent: Barium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



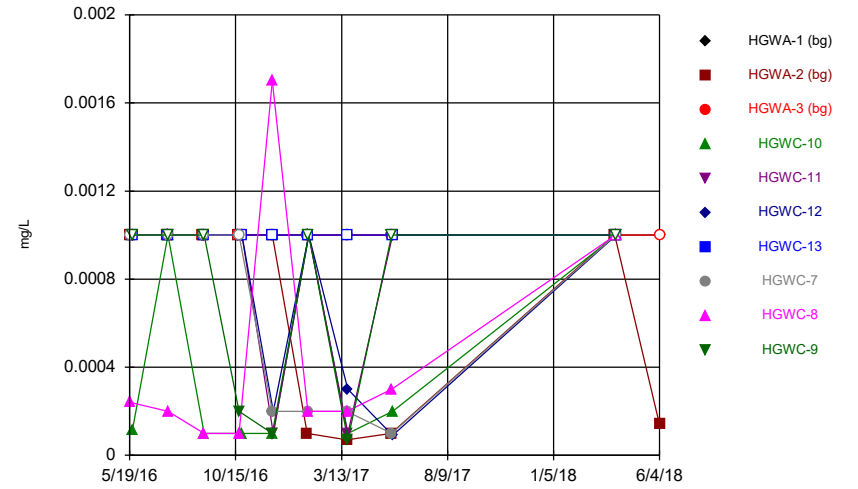
Constituent: Beryllium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



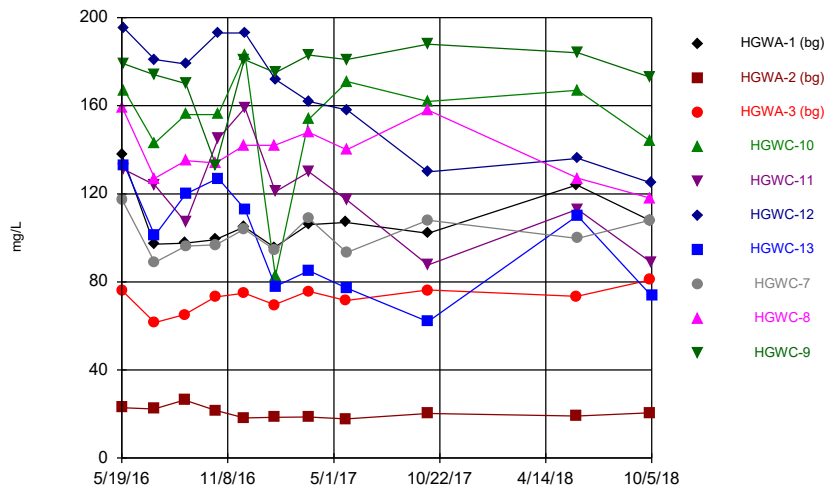
Constituent: Boron Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



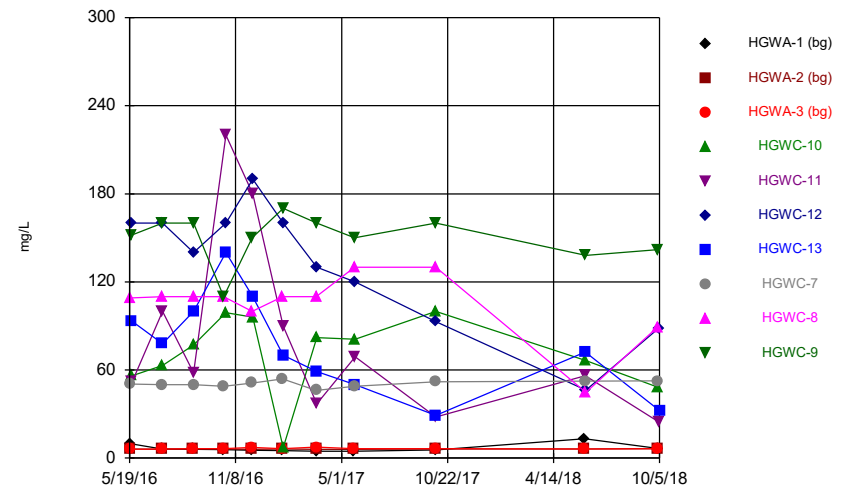
Constituent: Cadmium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



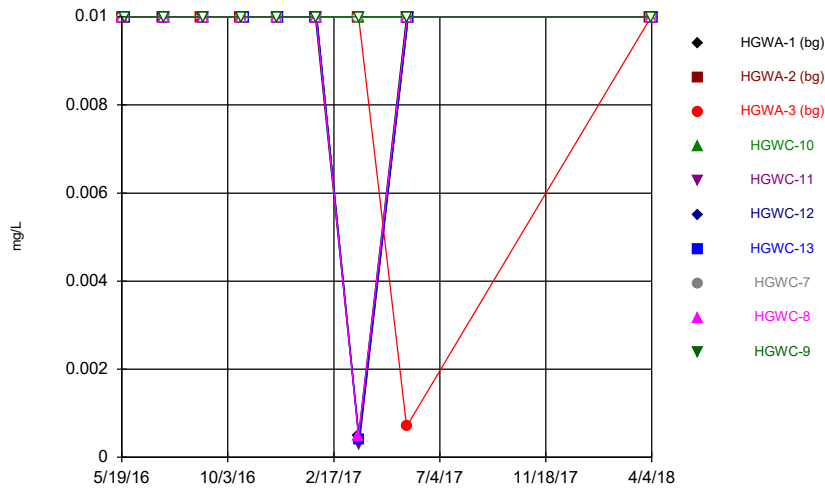
Constituent: Calcium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



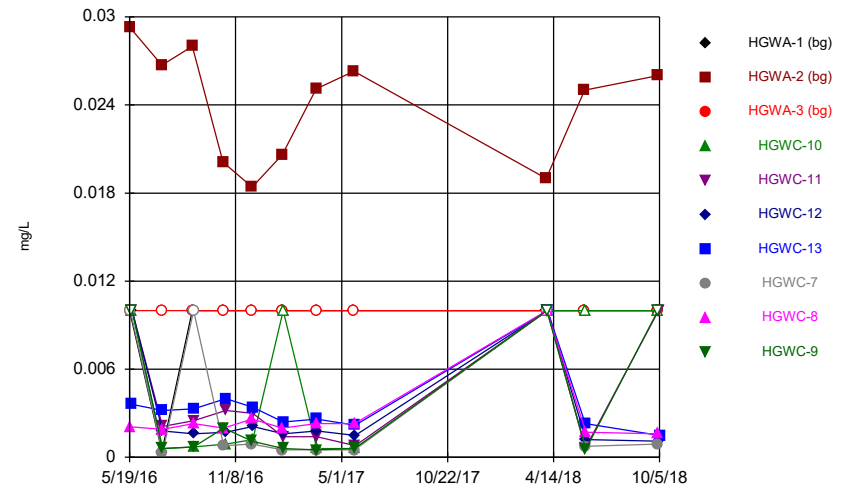
Constituent: Chloride Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



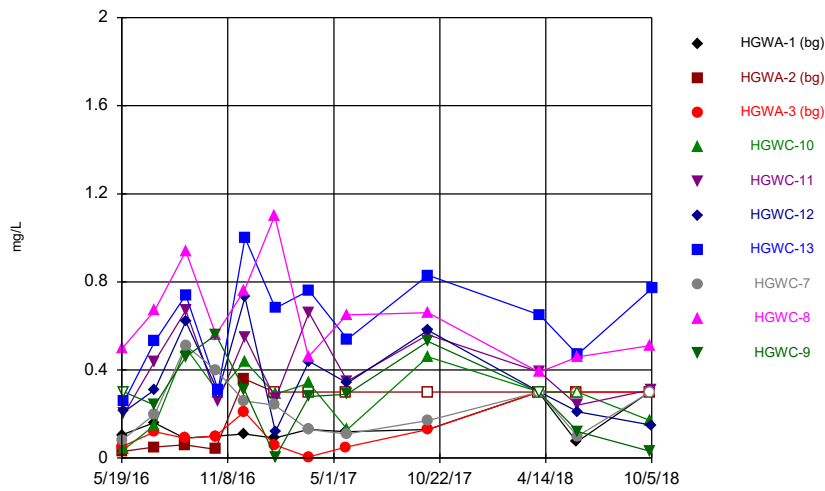
Constituent: Chromium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



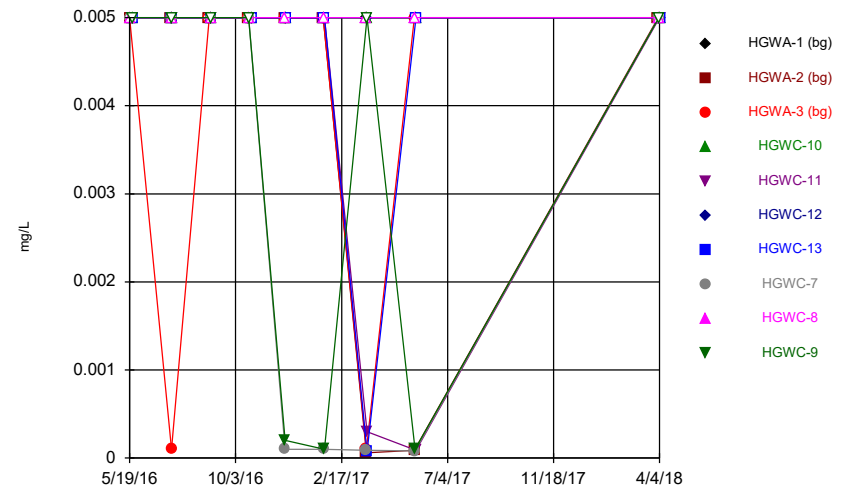
Constituent: Cobalt Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



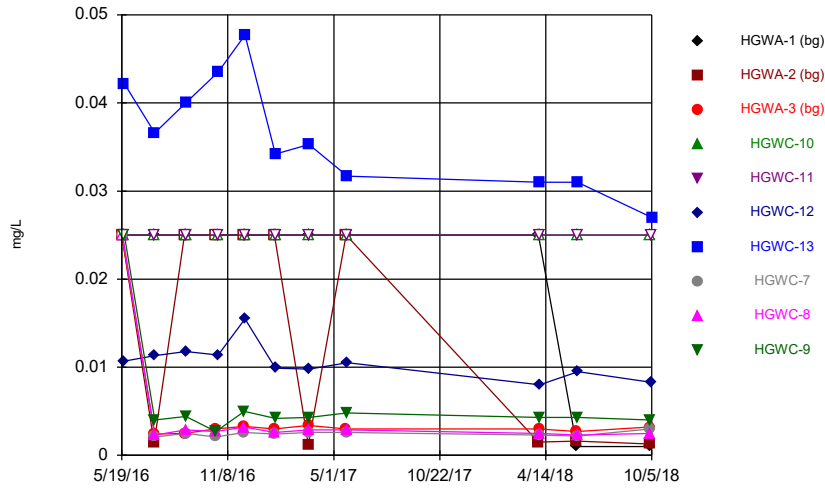
Constituent: Fluoride Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



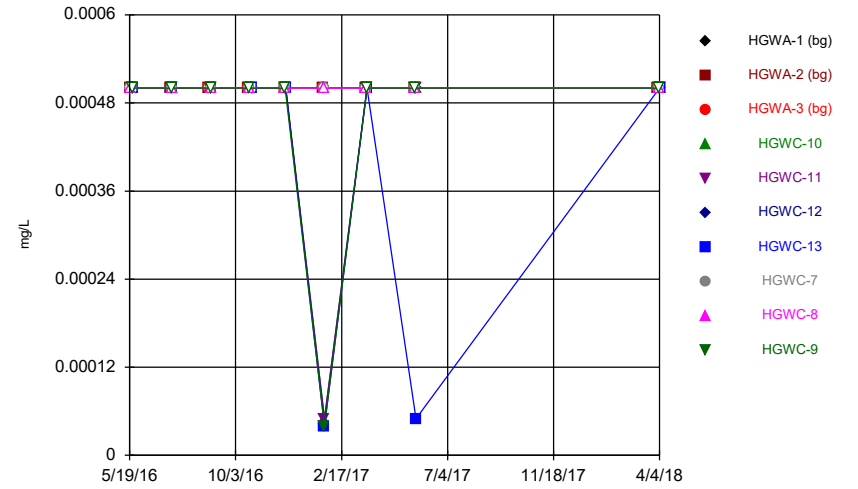
Constituent: Lead Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



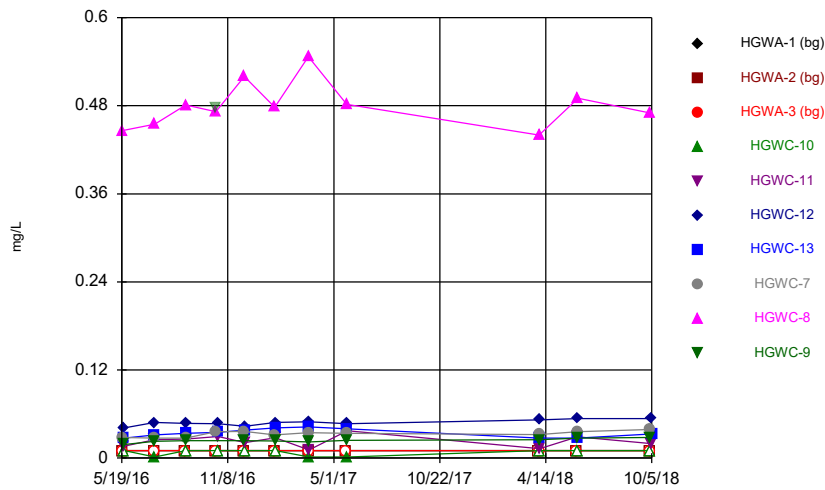
Constituent: Lithium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



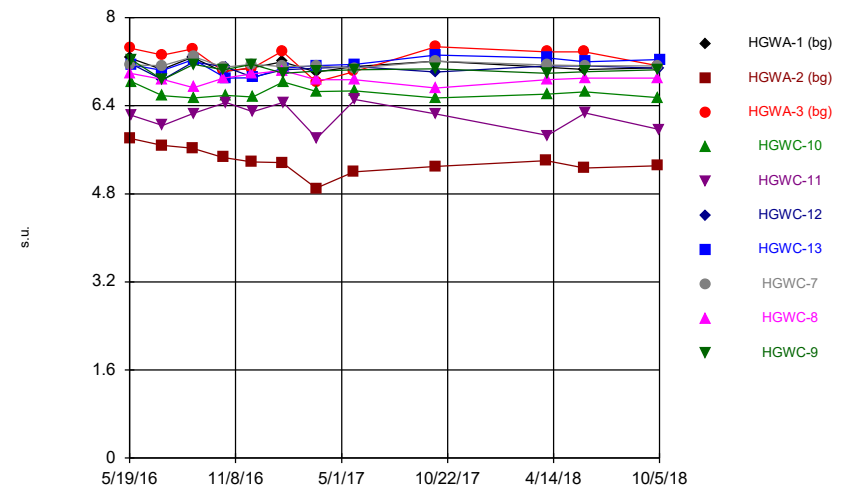
Constituent: Mercury Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



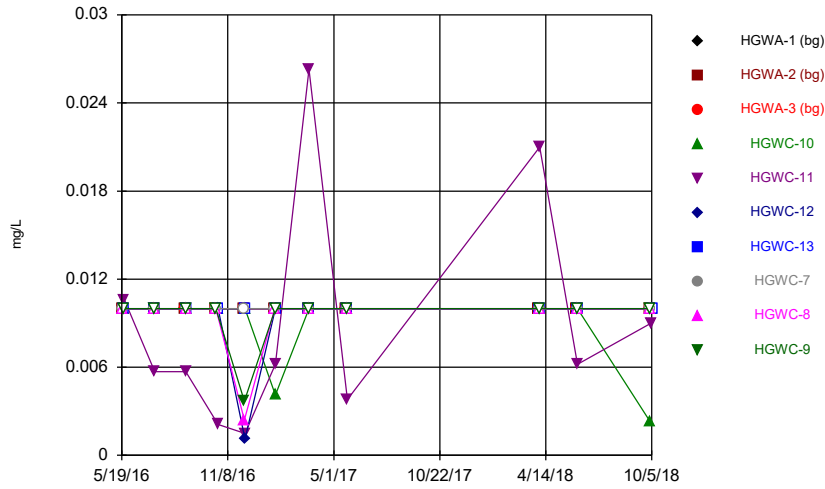
Constituent: Molybdenum Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



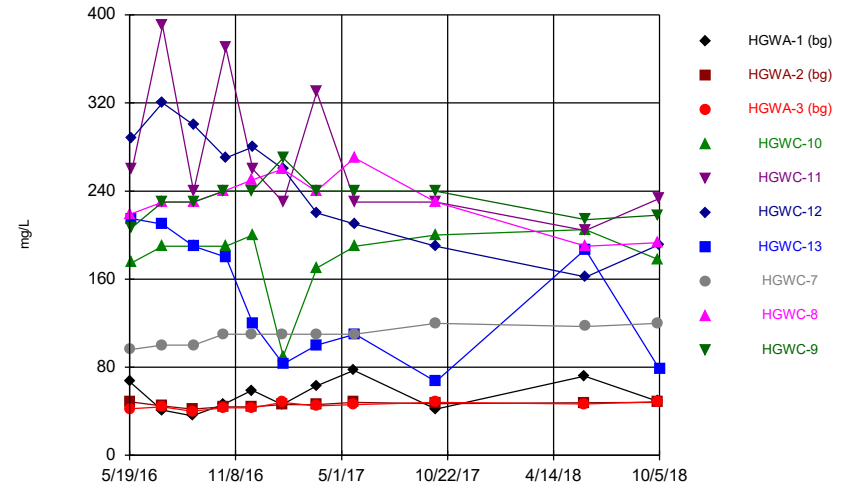
Constituent: pH Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



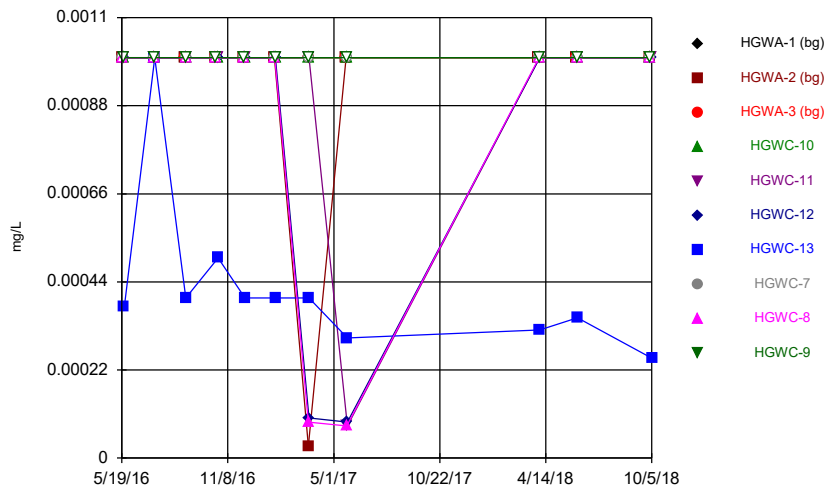
Constituent: Selenium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



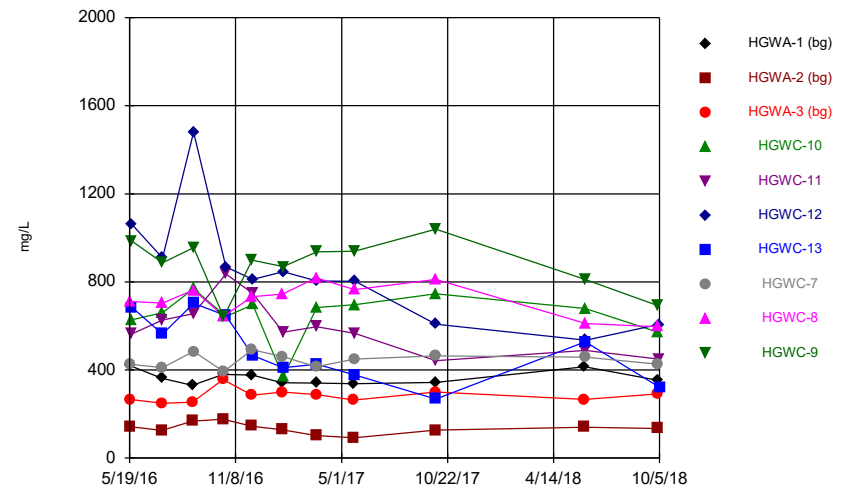
Constituent: Sulfate Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



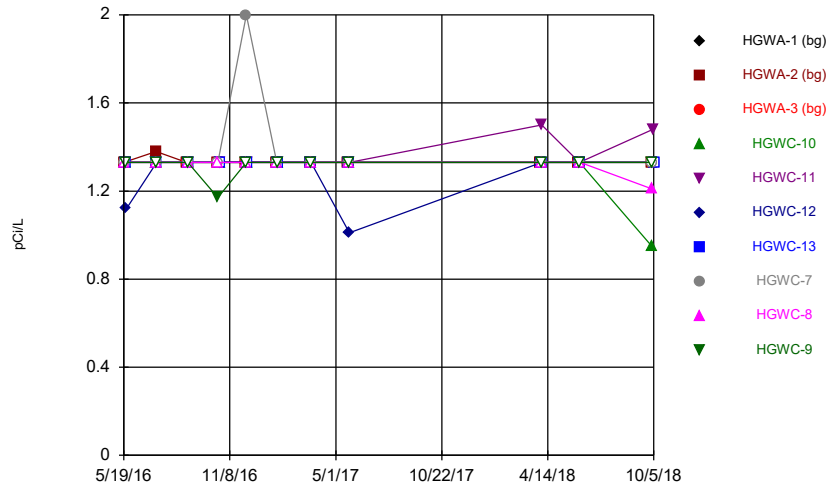
Constituent: Thallium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



Constituent: Total Dissolved Solids Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Time Series



Constituent: Total Radium Analysis Run 1/24/2019 11:12 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

AP-2

EPD Based Groundwater Protection
Standards Statistical Analysis Package

AM 02

Table B-2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 2
Floyd County, Georgia
AM 02

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.212	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	N/A	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead ²	7439-92-1	mg/L	N/A	0.005	0.005
Lithium ²	7439-93-2	mg/L	N/A	0.05	0.05
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	2.42	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Constituent without established EPA MCL.

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 1/24/2019, 11:23 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	54	96.3	n/a	0.06267	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	66	81.82	n/a	0.03387	NP Inter(NDs)
Barium (mg/L)	n/a	0.212	n/a	n/a	n/a	66	0	n/a	0.03387	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	54	88.89	n/a	0.06267	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	66	93.94	n/a	0.03387	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	54	92.59	n/a	0.06267	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	66	71.21	n/a	0.03387	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	72	31.94	n/a	0.02489	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	54	85.19	n/a	0.06267	NP Inter(NDs)
Lithium (mg/L)	n/a	0.05	n/a	n/a	n/a	66	36.36	n/a	0.03387	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	54	94.44	n/a	0.06267	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	57	96.49	n/a	0.05373	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	66	98.48	n/a	0.03387	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	66	98.48	n/a	0.03387	NP Inter(NDs)
Total Radium (pCi/L)	n/a	2.42	n/a	n/a	n/a	66	92.42	n/a	0.03387	NP Inter(NDs)

Summary of Confidence Interval - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 1/24/2019, 11:53 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-15	0.05707	0.03776	0.0293	Yes	11	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2054	0.1781	0.0293	Yes	11	0	No	0.01	Param.

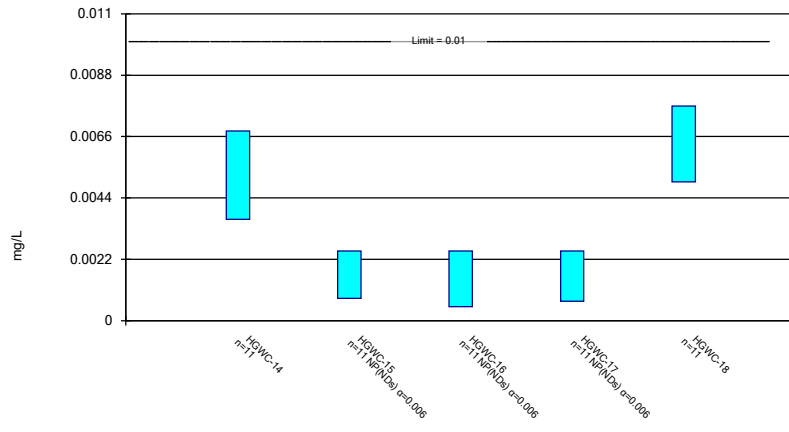
Summary of Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 1/24/2019, 11:53 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006795	0.003638	0.01	No	11	9.091	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.0025	0.0008	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.0025	0.0005	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.0025	0.0007	0.01	No	11	72.73	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.007701	0.004979	0.01	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0244	0.02	2	No	11	9.091	No	0.006	NP (normality)
Barium (mg/L)	HGWC-15	0.03415	0.0247	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.108	0.09317	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.02606	0.02237	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-18	0.0349	0.028	2	No	11	9.091	No	0.006	NP (normality)
Cadmium (mg/L)	HGWC-14	0.0005	0.0001	0.005	No	11	27.27	No	0.006	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002822	0.00158	0.005	No	11	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0005	0.0005	0.005	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0005	0.00007	0.005	No	11	90.91	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002587	0.002026	0.005	No	11	9.091	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-14	0.02903	0.02089	0.0293	No	11	9.091	x^2	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05707	0.03776	0.0293	Yes	11	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.005	0.0293	No	11	100	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01668	0.01468	0.0293	No	11	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2054	0.1781	0.0293	Yes	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3117	0.1283	4	No	12	25	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.2892	0.122	4	No	12	41.67	x^(1/3)	0.01	Param.
Fluoride (mg/L)	HGWC-16	0.3301	0.09924	4	No	12	41.67	No	0.01	Param.
Fluoride (mg/L)	HGWC-17	0.3727	0.05627	4	No	12	41.67	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-18	0.7012	0.3771	4	No	12	8.333	No	0.01	Param.
Lithium (mg/L)	HGWC-14	0.025	0.025	0.05	No	11	100	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-15	0.025	0.0013	0.05	No	11	45.45	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-16	0.0037	0.0025	0.05	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-17	0.025	0.0011	0.05	No	11	90.91	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-18	0.01538	0.01364	0.05	No	11	0	No	0.01	Param.
Selenium (mg/L)	HGWC-14	0.01698	0.009712	0.05	No	11	0	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.005	0.0012	0.05	No	11	72.73	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-16	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-17	0.005	0.0014	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03894	0.01999	0.05	No	11	9.091	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	10	10	No	0.011	NP (normality)
Thallium (mg/L)	HGWC-15	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-16	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-17	0.0005	0.0001	0.002	No	11	81.82	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-18	0.0005	0.00014	0.002	No	11	63.64	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-14	1.693	1.164	5	No	11	45.45	No	0.01	Param.
Total Radium (pCi/L)	HGWC-15	0.675	0.675	5	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-16	0.675	0.675	5	No	11	90.91	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-17	0.675	0.675	5	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-18	2.395	1.471	5	No	11	9.091	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

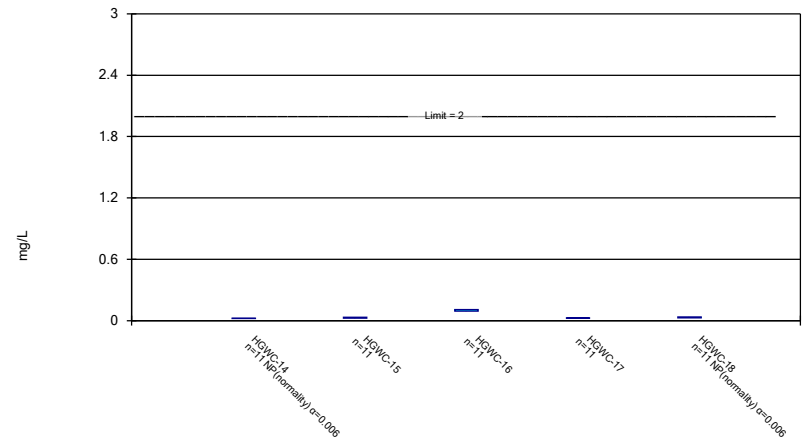
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 1/24/2019 11:51 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

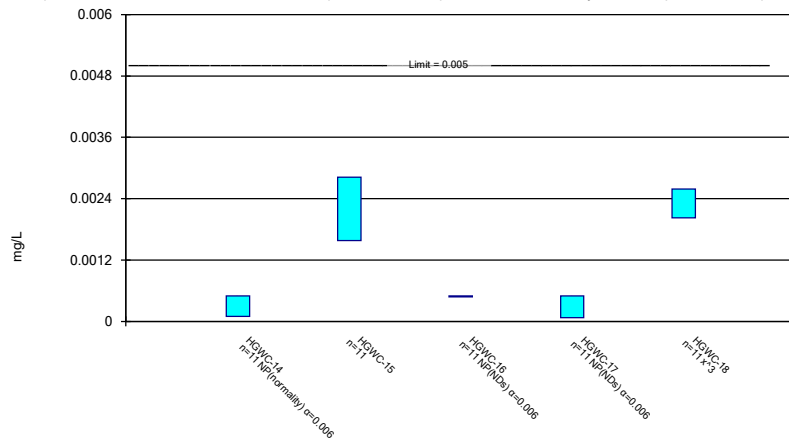
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

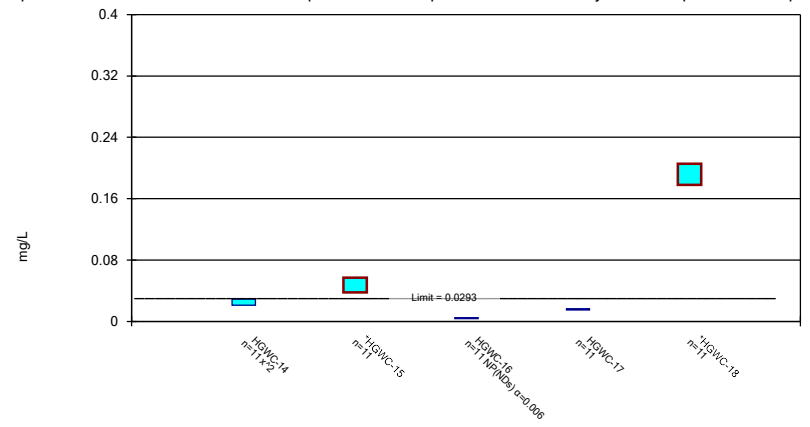
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 1/24/2019 11:53 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.00268 (J)	<0.005	<0.005	<0.005	
5/24/2016					0.00294 (J)
7/12/2016	0.0059	<0.005	<0.005	<0.005	0.0074
9/1/2016	0.0056	<0.005	<0.005	<0.005	0.0073
10/24/2016	0.0058	<0.005			
10/25/2016			<0.005	<0.005	0.006
12/7/2016	<0.005	<0.005	<0.005	<0.005	
12/8/2016					0.007
1/26/2017	0.0089	<0.005	<0.005	<0.005	0.0068
3/22/2017			0.0005 (J)	0.0007 (J)	
3/23/2017	0.0069	0.0008 (J)			0.0082
5/24/2017	0.0048 (J)	<0.005	<0.005		
5/25/2017				0.0007 (J)	0.006
4/3/2018		<0.005	<0.005	<0.005	0.0062
4/4/2018	0.0052				
6/5/2018					0.008
6/6/2018	0.0059	<0.005	<0.005	0.00097 (J)	
10/3/2018	0.0032 (J)	<0.005	<0.005	<0.005	0.0039 (J)
Mean	0.005216	0.002345	0.002318	0.002034	0.00634
Std. Dev.	0.001894	0.0005126	0.000603	0.0008018	0.001633
Upper Lim.	0.006795	0.0025	0.0025	0.0025	0.007701
Lower Lim.	0.003638	0.0008	0.0005	0.0007	0.004979

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 1/24/2019 11:53 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.2	0.0315 (J)	0.0841	0.0222 (J)	
5/24/2016					<0.2
7/12/2016	0.0214	0.0372	0.0886	0.0221	0.0346
9/1/2016	0.0208	0.0364	0.0934	0.0227	0.0336
10/24/2016	0.0208	0.0326			
10/25/2016			0.0991	0.0225	0.0349
12/7/2016	0.022	0.0301	0.101	0.0227	
12/8/2016					0.0339
1/26/2017	0.0238	0.0287	0.105	0.0229	0.0293
3/22/2017			0.11 (J)	0.0248 (J)	
3/23/2017	0.0244	0.0329			0.0313
5/24/2017	0.0228	0.0283	0.106		
5/25/2017				0.0255	0.0336
4/3/2018		0.019 (J)	0.099 (J)	0.025 (J)	0.028 (J)
4/4/2018	0.021				
6/5/2018					0.03
6/6/2018	0.022	0.022	0.11	0.028	
10/3/2018	0.02	0.025	0.11	0.028	0.032
Mean	0.029	0.02943	0.1006	0.02422	0.03829
Std. Dev.	0.02359	0.005667	0.008869	0.002215	0.02059
Upper Lim.	0.0244	0.03415	0.108	0.02606	0.0349
Lower Lim.	0.02	0.0247	0.09317	0.02237	0.028

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 1/24/2019 11:53 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000139 (J)	0.00271 (J)	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001	0.0019	<0.001	<0.001	0.0022
9/1/2016	0.0001 (J)	0.0017	<0.001	<0.001	0.0024
10/24/2016	0.0002 (J)	0.0018			
10/25/2016			<0.001	<0.001	0.0022
12/7/2016	0.0001 (J)	0.0018	<0.001	<0.001	
12/8/2016					0.0024
1/26/2017	<0.001 (*)	0.0013	<0.001	<0.001	0.0025
3/22/2017			<0.001	7E-05 (J)	
3/23/2017	0.0002 (J)	0.002			0.0025
5/24/2017	0.0001 (J)	0.0041	<0.001		
5/25/2017				<0.001	0.0027
4/3/2018		0.0022	<0.001	<0.001	0.0022
4/4/2018	<0.001				
6/5/2018					0.0022
6/6/2018	0.00012 (J)	0.0021	<0.001	<0.001	
10/3/2018	0.0001 (J)	0.0026	<0.001	<0.001	0.0027
Mean	0.0002326	0.002201	0.0005	0.0004609	0.002227
Std. Dev.	0.0001756	0.000745	0	0.0001296	0.0006035
Upper Lim.	0.0005	0.002822	0.0005	0.0005	0.002587
Lower Lim.	0.0001	0.00158	0.0005	7E-05	0.002026

Confidence Interval

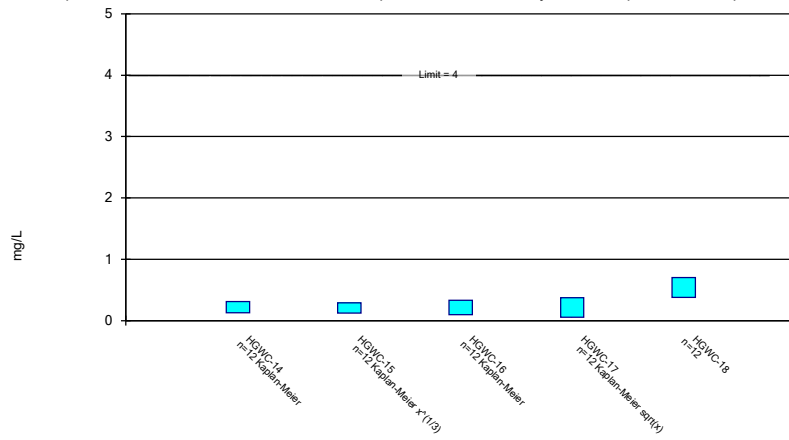
Constituent: Cobalt (mg/L) Analysis Run 1/24/2019 11:53 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.01	0.0419 (J)	<0.01	0.0167	
5/24/2016					0.17 (J)
7/12/2016	0.0232	0.0393	<0.01	0.0148	0.168
9/1/2016	0.0248	0.045	<0.01	0.0151	0.18
10/24/2016	0.0253	0.0557			
10/25/2016			<0.01	0.0141	0.188
12/7/2016	0.0269	0.0536	<0.01	0.0141	
12/8/2016					0.206
1/26/2017	0.0294	0.055	<0.01	0.0154	0.195
3/22/2017			<0.01	0.0169	
3/23/2017	0.0311	0.0715			0.223
5/24/2017	0.0279	0.0446	<0.01		
5/25/2017				0.0154	0.209
4/3/2018		0.032	<0.01	0.016	0.19
4/4/2018	0.025				
6/5/2018					0.19
6/6/2018	0.027	0.032	<0.01	0.018	
10/3/2018	0.023	0.051	<0.01	0.016	0.19
Mean	0.02442	0.04742	0.005	0.01568	0.1917
Std. Dev.	0.006901	0.01159	0	0.001199	0.01639
Upper Lim.	0.02903	0.05707	0.005	0.01668	0.2054
Lower Lim.	0.02089	0.03776	0.005	0.01468	0.1781

Parametric Confidence Interval

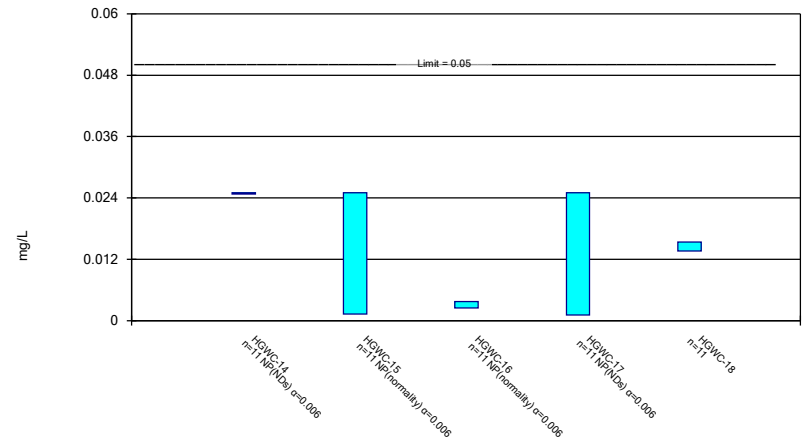
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

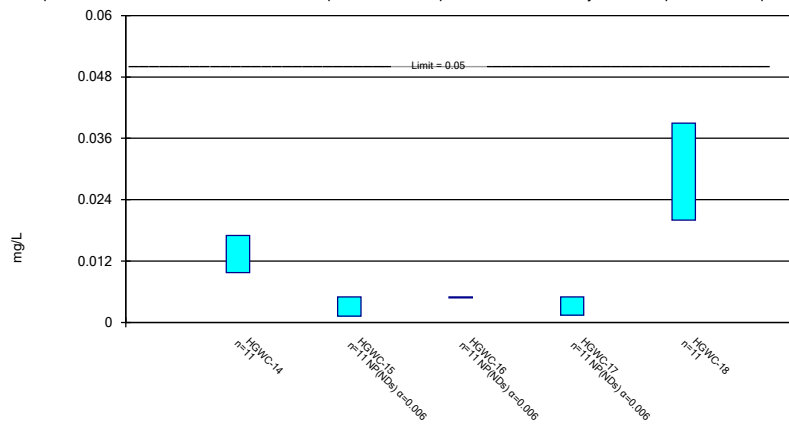
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

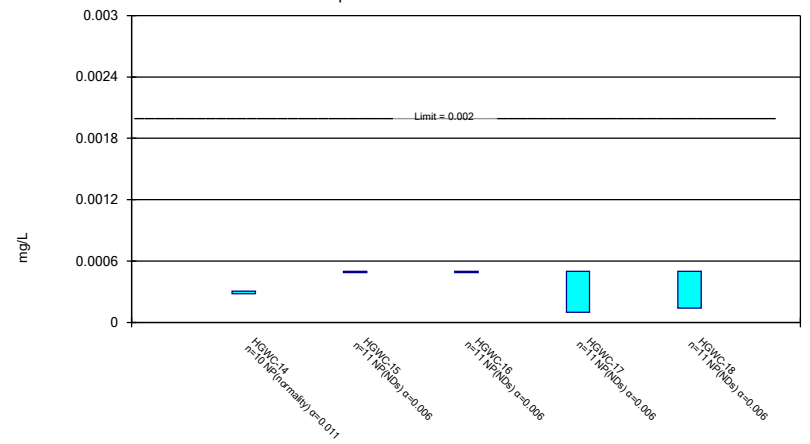
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 1/24/2019 11:52 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 1/24/2019 11:53 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.3	<0.3	0.038 (J)	<0.3	
5/24/2016					<0.3
7/12/2016	0.2 (J)	0.09 (J)	0.26 (J)	0.09 (J)	0.54
9/1/2016	0.08 (J)	0.22 (J)	0.42 (J)	0.03 (J)	0.49 (J)
10/24/2016	<0.3 (*)	<0.3 (*)			
10/25/2016			<0.3 (*)	<0.3 (*)	0.58
12/7/2016	0.11 (J)	0.23 (J)	0.23 (J)	0.54 (J)	
12/8/2016					0.63 (J)
1/26/2017	0.13 (J)	<0.3	0.02 (J)	<0.3	0.71 (J)
3/22/2017			0.3	0.07 (J)	
3/23/2017	0.28 (J)	0.12 (J)			0.57
5/24/2017	0.32	0.31	0.46		
5/25/2017				0.42	0.54
10/4/2017	0.52	0.6	<0.3	0.93	0.95
4/3/2018		<0.3	<0.3	<0.3	0.33
4/4/2018	<0.3				
6/5/2018					0.66
6/6/2018	0.25 (J)	0.17 (J)	<0.3	0.23 (J)	
10/3/2018	0.21 (J)	<0.3	<0.3	<0.3	0.32
Mean	0.2125	0.2075	0.2065	0.255	0.5392
Std. Dev.	0.1202	0.1364	0.1352	0.2579	0.2065
Upper Lim.	0.3117	0.2892	0.3301	0.3727	0.7012
Lower Lim.	0.1283	0.122	0.09924	0.05627	0.3771

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 1/24/2019 11:53 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.05	<0.05	<0.05	<0.05	
5/24/2016					0.0142 (J)
7/12/2016	<0.05	<0.05	0.0037 (J)	<0.05	0.0141 (J)
9/1/2016	<0.05	0.0021 (J)	0.0033 (J)	<0.05	0.0158 (J)
10/24/2016	<0.05	<0.05			
10/25/2016			0.0029 (J)	<0.05	0.016 (J)
12/7/2016	<0.05	<0.05	0.0029 (J)	<0.05	
12/8/2016					0.0144 (J)
1/26/2017	<0.05	<0.05	0.0028 (J)	<0.05	0.0136 (J)
3/22/2017			0.0025 (J)	<0.05	
3/23/2017	<0.05	0.0016 (J)			0.0151 (J)
5/24/2017	<0.05	0.0029 (J)	0.0029 (J)		
5/25/2017				0.0011 (J)	0.0154 (J)
4/3/2018		0.0026 (J)	0.0028 (J)	<0.05	0.013 (J)
4/4/2018	<0.05				
6/5/2018					0.013 (J)
6/6/2018	<0.05	0.0013 (J)	0.0031 (J)	<0.05	
10/3/2018	<0.05	0.0017 (J)	0.0026 (J)	<0.05	0.015 (J)
Mean	0.025	0.01247	0.004955	0.02283	0.01451
Std. Dev.	0	0.012	0.006656	0.007206	0.001045
Upper Lim.	0.025	0.025	0.0037	0.025	0.01538
Lower Lim.	0.025	0.0013	0.0025	0.0011	0.01364

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 1/24/2019 11:53 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.017	<0.01	<0.01	<0.01	
5/24/2016					<0.01
7/12/2016	0.0146	<0.01	<0.01	<0.01	0.036
9/1/2016	0.0137	<0.01	<0.01	0.0014 (J)	0.0347
10/24/2016	0.0135	0.0012 (J)			
10/25/2016			<0.01	<0.01	0.0282
12/7/2016	0.01 (J)	0.0041 (J)	<0.01	0.0023 (J)	
12/8/2016					0.0373
1/26/2017	0.0214	<0.01	<0.01	<0.01	0.0385
3/22/2017			<0.01	<0.01	
3/23/2017	0.0167	0.0016 (J)			0.0414
5/24/2017	0.0083 (J)	<0.01	<0.01		
5/25/2017				<0.01	0.019
4/3/2018		<0.01	<0.01	<0.01	0.029
4/4/2018	0.012				
6/5/2018					0.038
6/6/2018	0.014	<0.01	<0.01	<0.01	
10/3/2018	0.0056 (J)	<0.01	<0.01	<0.01	0.017
Mean	0.01335	0.004264	0.005	0.004427	0.02946
Std. Dev.	0.00436	0.001444	0	0.00129	0.01137
Upper Lim.	0.01698	0.005	0.005	0.005	0.03894
Lower Lim.	0.009712	0.0012	0.005	0.0014	0.01999

Confidence Interval

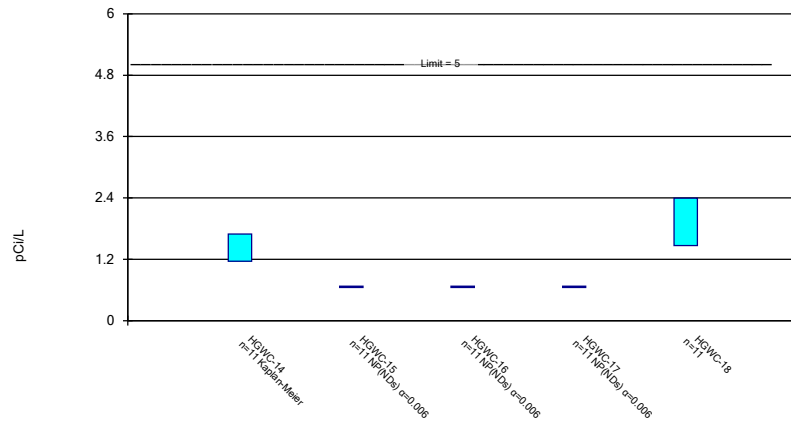
Constituent: Thallium (mg/L) Analysis Run 1/24/2019 11:53 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000306 (J)	<0.001	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001 (*)	<0.001	<0.001	<0.001 (*)	<0.001 (*)
9/1/2016	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
10/24/2016	0.0004 (o)	<0.001			
10/25/2016			<0.001	<0.001	<0.001
12/7/2016	0.0003 (J)	<0.001	<0.001	<0.001	
12/8/2016					<0.001
1/26/2017	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
3/22/2017			<0.001	0.0001 (J)	
3/23/2017	0.0003 (J)	<0.001			0.0002 (J)
5/24/2017	0.0003 (J)	<0.001	<0.001		
5/25/2017				0.0001 (J)	0.0002 (J)
4/3/2018		<0.001	<0.001	<0.001	0.00014 (J)
4/4/2018	0.00028 (J)				
6/5/2018					0.00016 (J)
6/6/2018	0.00029 (J)	<0.001	<0.001	<0.001	
10/3/2018	0.00029 (J)	<0.001	<0.001	<0.001	<0.001
Mean	0.0003166	0.0005	0.0005	0.0004273	0.0003818
Std. Dev.	6.488E-05	0	0	0.0001618	0.0001648
Upper Lim.	0.000306	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.00028	0.0005	0.0005	0.0001	0.00014

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



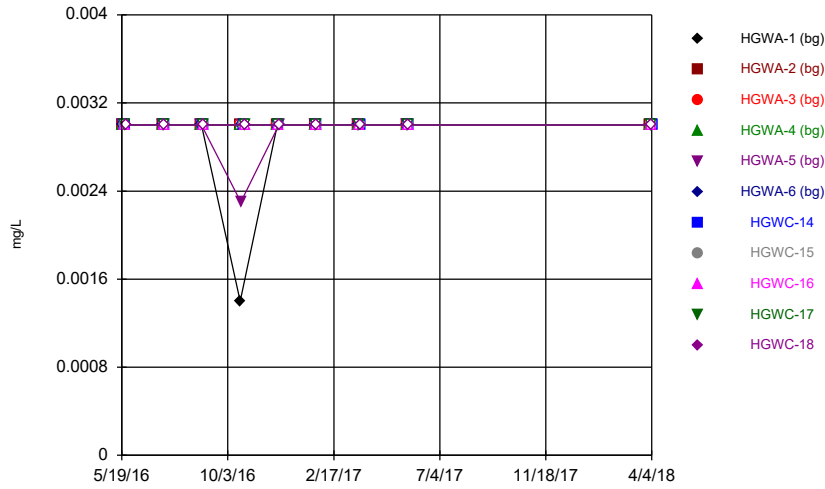
Constituent: Total Radium Analysis Run 1/24/2019 11:52 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 1/24/2019 11:53 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

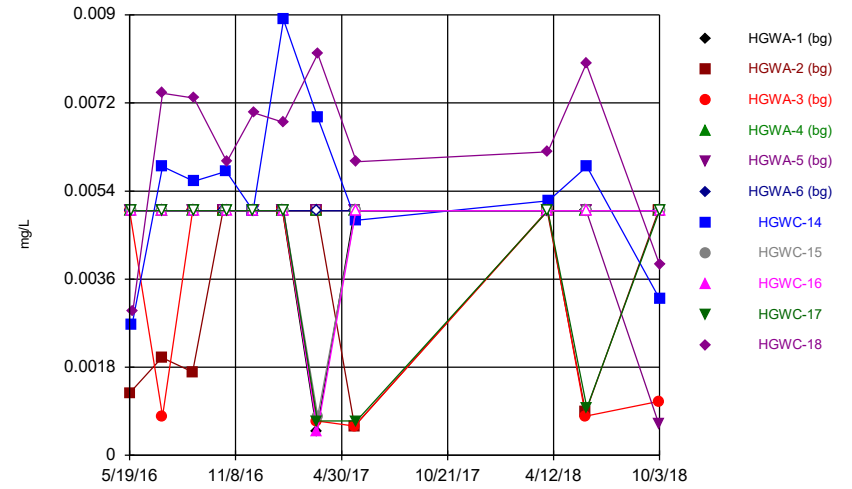
	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<1.35	<1.35		<1.35	
5/24/2016					1.82
7/1/2016			<1.35		
7/12/2016	<1.35 (*)	<1.35	<1.35	<1.35 (*)	<1.35 (*)
9/1/2016	<1.35 (*)	<1.35	<1.35 (*)	<1.35	1.51
10/24/2016	1.88 (J)	<1.35 (*)			
10/25/2016			<1.35	<1.35	2.69 (J)
12/7/2016	1.35	<1.35	<1.35	<1.35	
12/8/2016					2.21
1/26/2017	2.1 (J)	<1.35	<1.35	<1.35	2.26 (J)
3/22/2017			<1.35	<1.35	
3/23/2017	1.17 (J)	<1.35			1.81 (J)
5/24/2017	<1.35	<1.35	1.05		
5/25/2017				<1.35	1.63 (J)
4/3/2018		<1.35	<1.35	<1.35	2.53 (J)
4/4/2018	1.72 (J)				
6/5/2018					1.91
6/6/2018	<1.35	<1.35	<1.35	<1.35	
10/3/2018	1.48 (J)	<1.35	<1.35	<1.35	2.22 (J)
Mean	1.189	0.675	0.7091	0.675	1.933
Std. Dev.	0.5497	0	0.1131	0	0.5547
Upper Lim.	1.693	0.675	0.675	0.675	2.395
Lower Lim.	1.164	0.675	0.675	0.675	1.471

Time Series



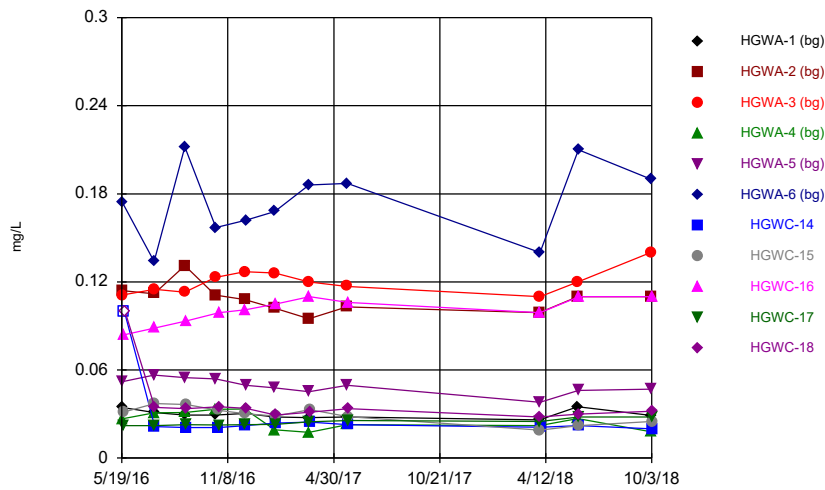
Constituent: Antimony Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



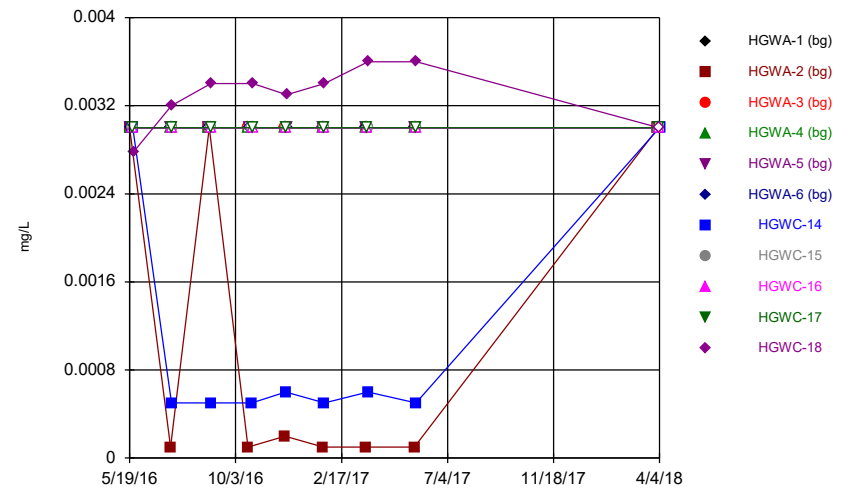
Constituent: Arsenic Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



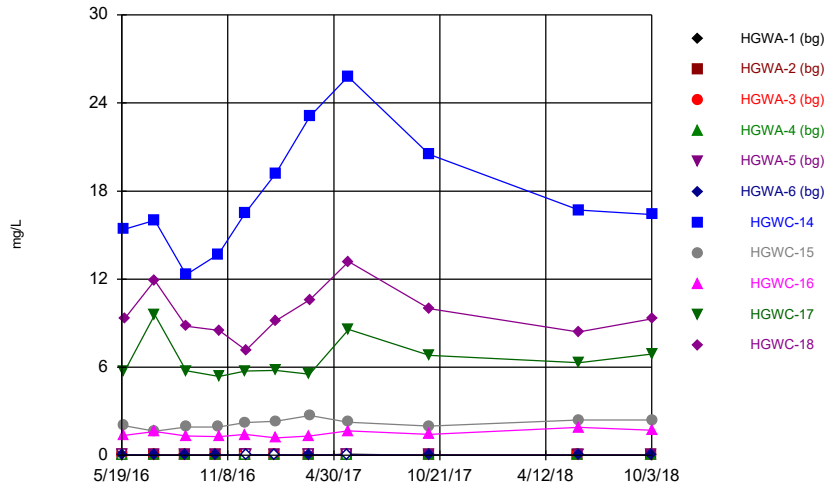
Constituent: Barium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



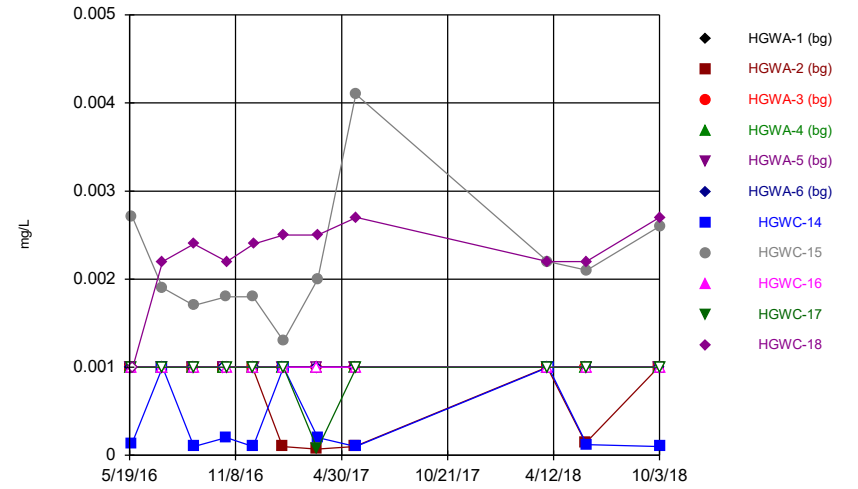
Constituent: Beryllium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



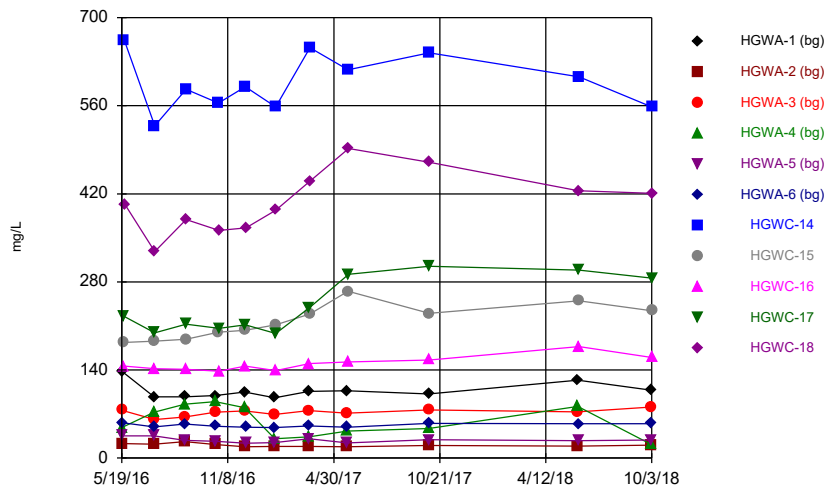
Constituent: Boron Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



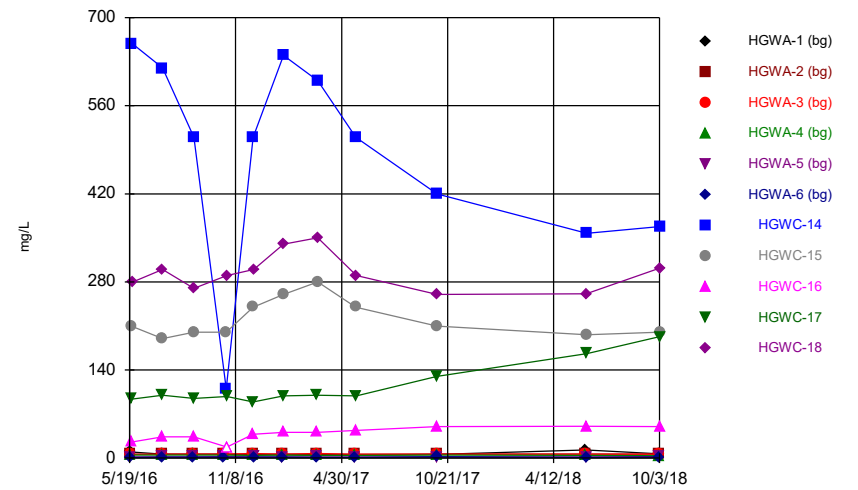
Constituent: Cadmium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



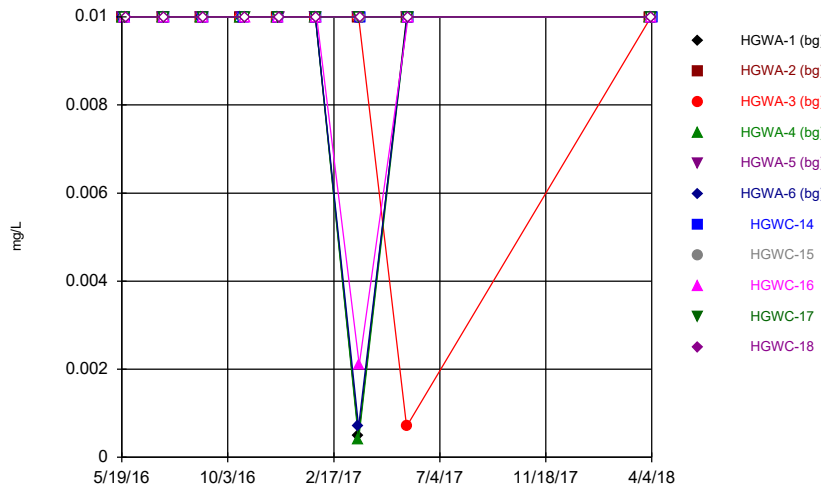
Constituent: Calcium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



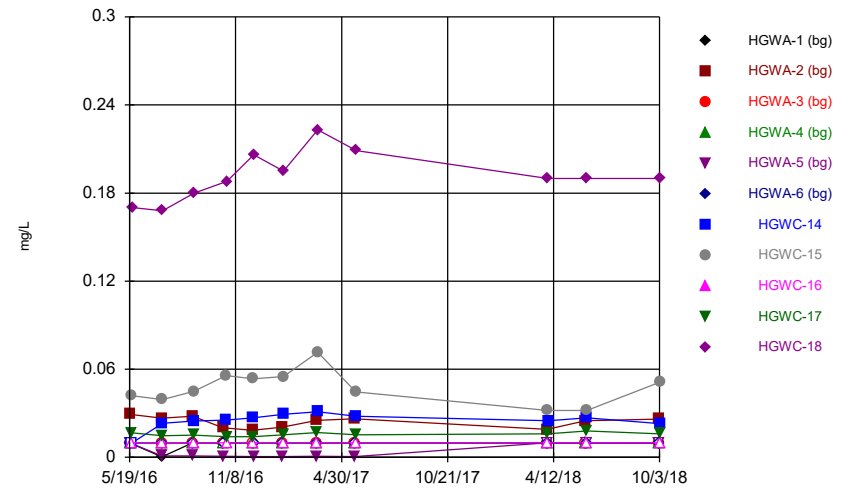
Constituent: Chloride Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



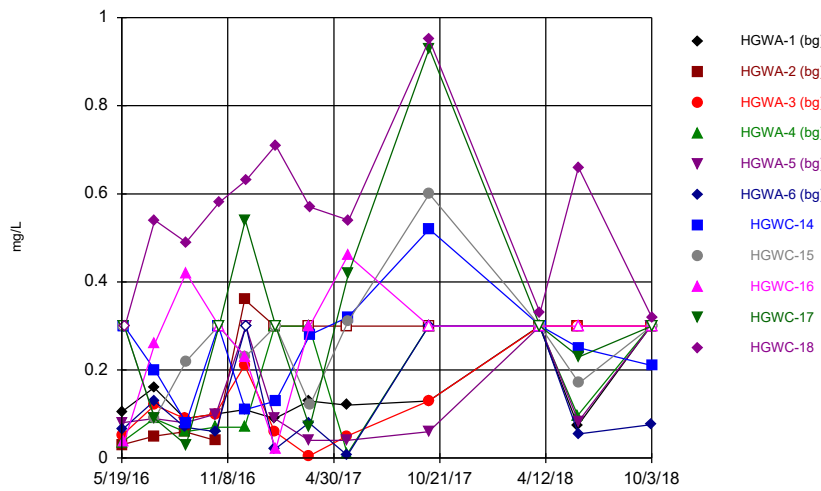
Constituent: Chromium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



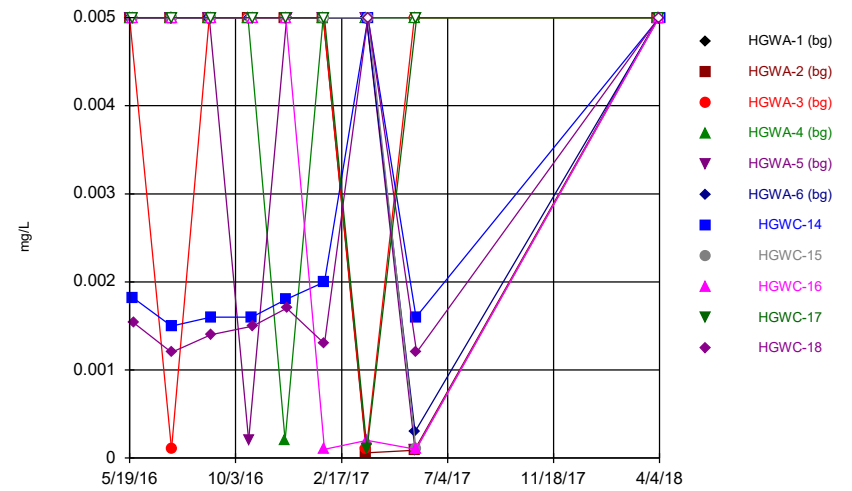
Constituent: Cobalt Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



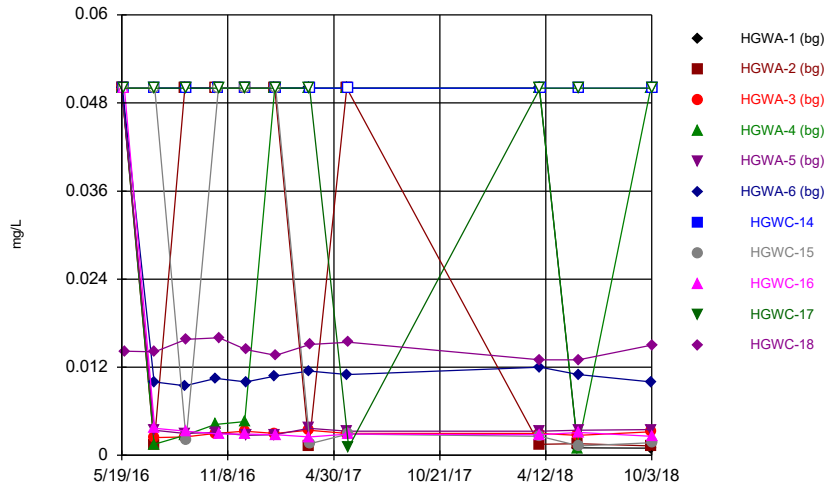
Constituent: Fluoride Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



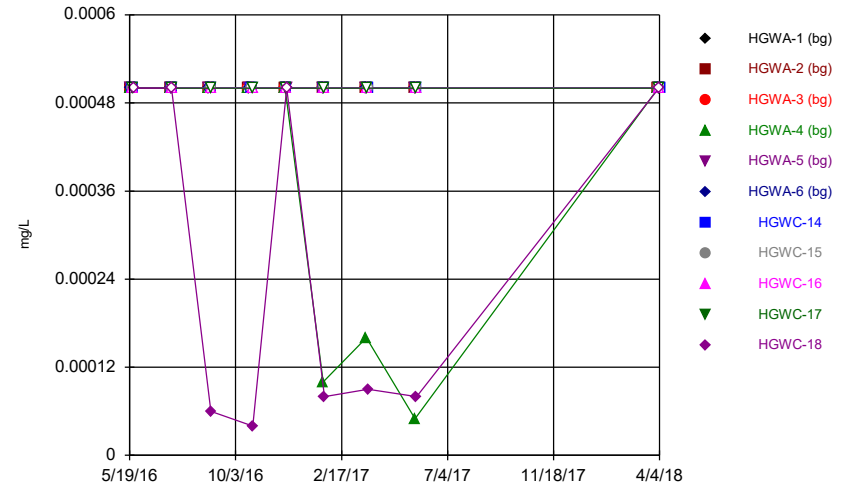
Constituent: Lead Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



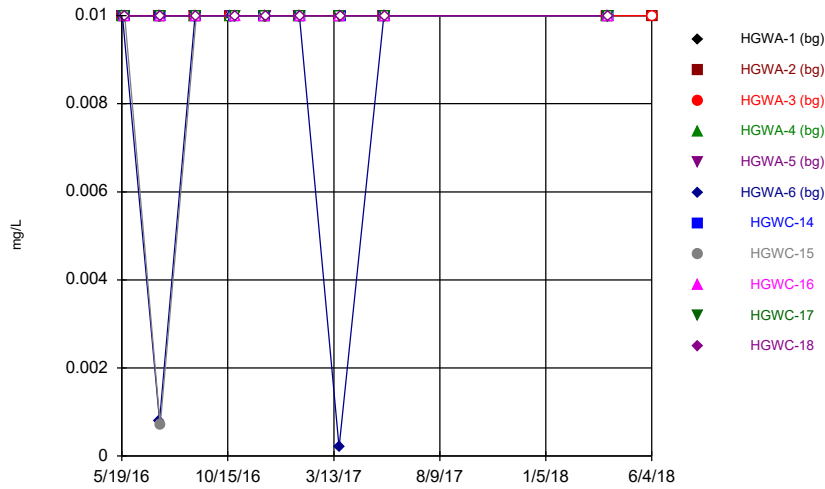
Constituent: Lithium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



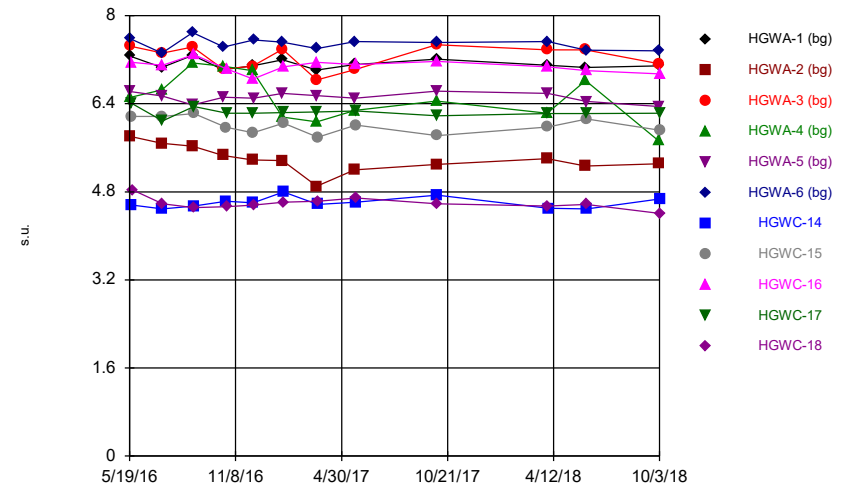
Constituent: Mercury Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



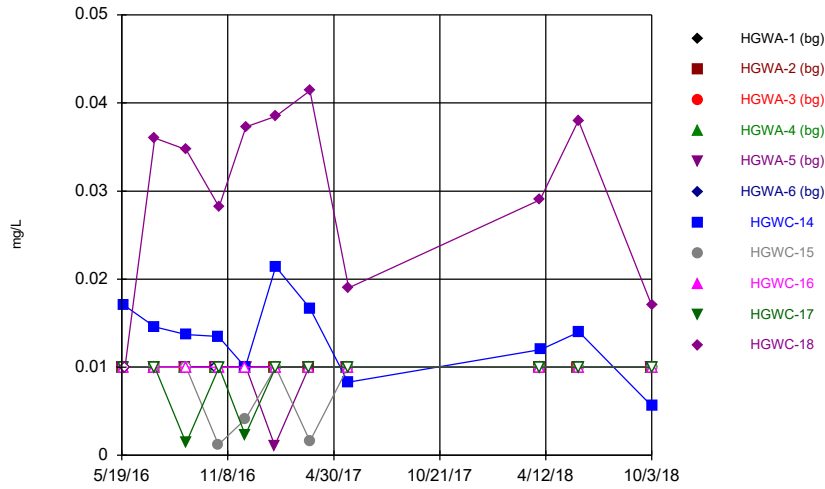
Constituent: Molybdenum Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



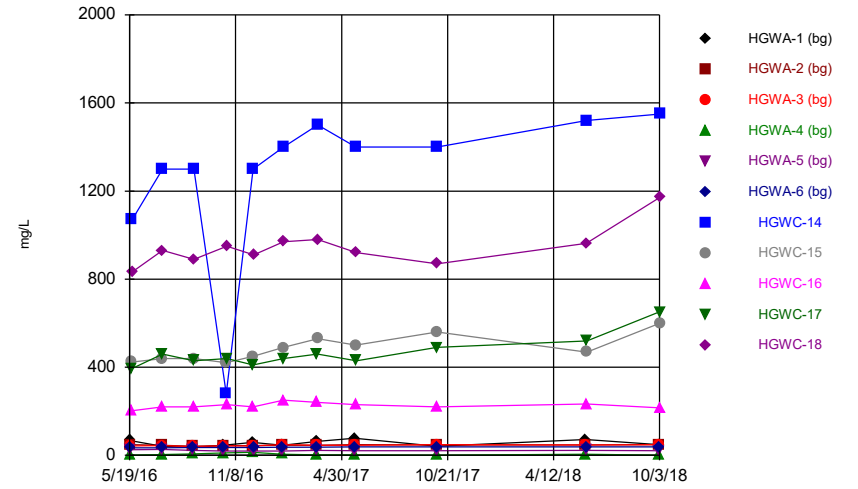
Constituent: pH Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



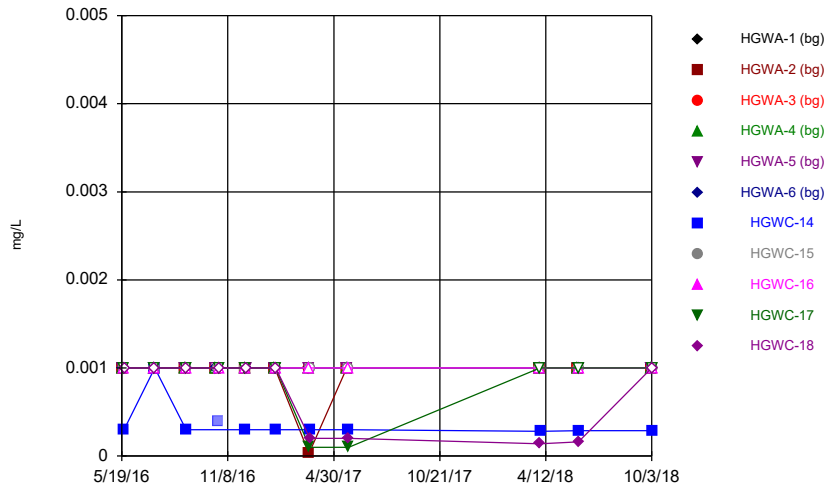
Constituent: Selenium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



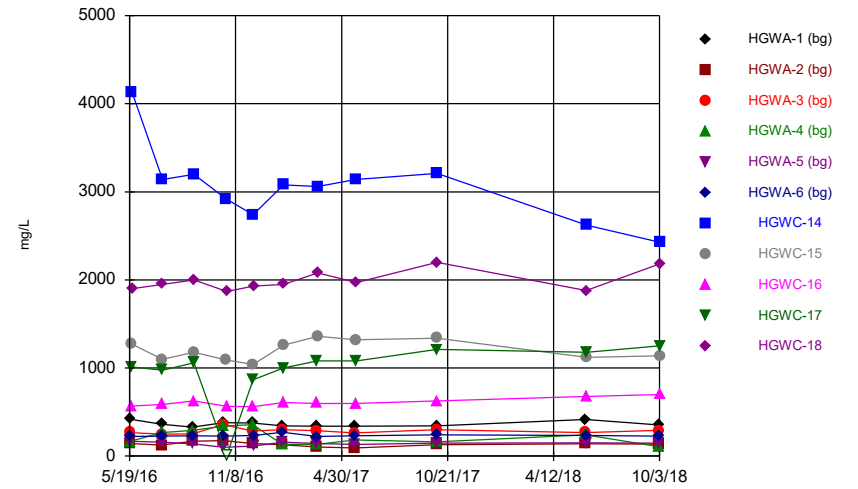
Constituent: Sulfate Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



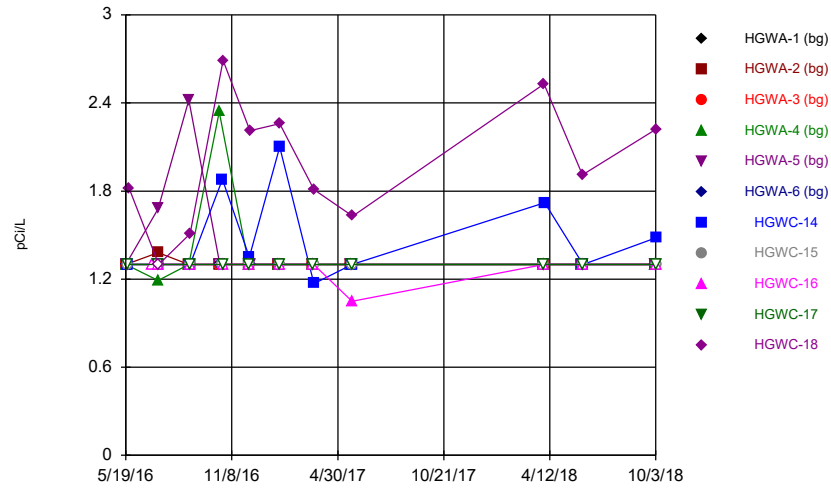
Constituent: Thallium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



Constituent: Total Radium Analysis Run 1/24/2019 11:56 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

USEPA Based Groundwater Protection
Standards Statistical Analysis Package

AM 02

Table B-2
USEPA Based 2018 Groundwater Protection Standards
Plant Hammond - Ash Pond 2
Floyd County, Georgia
AM 02

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS¹
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.212	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt ²	7440-48-4	mg/L	0.006	0.0293	0.0293
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead ³	7439-92-1	mg/L	0.015	0.005	0.015
Lithium ²	7439-93-2	mg/L	0.04	0.025	0.04
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	2.42	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

²Regional Screening Level applied for constituent per CCR Rule Amendment, July 30, 2018.

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

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 1/24/2019, 12:09 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	54	96.3	n/a	0.06267	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	66	81.82	n/a	0.03387	NP Inter(NDs)
Barium (mg/L)	n/a	0.212	n/a	n/a	n/a	66	0	n/a	0.03387	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	54	88.89	n/a	0.06267	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	66	93.94	n/a	0.03387	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	54	92.59	n/a	0.06267	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	66	71.21	n/a	0.03387	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	72	31.94	n/a	0.02489	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	54	85.19	n/a	0.06267	NP Inter(NDs)
Lithium (mg/L)	n/a	0.025	n/a	n/a	n/a	66	36.36	n/a	0.03387	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	54	94.44	n/a	0.06267	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	57	96.49	n/a	0.05373	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	66	98.48	n/a	0.03387	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	66	98.48	n/a	0.03387	NP Inter(NDs)
Total Radium (pCi/L)	n/a	2.42	n/a	n/a	n/a	66	92.42	n/a	0.03387	NP Inter(NDs)

Summary of Confidence Interval - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 1/24/2019, 12:20 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-15	0.05707	0.03776	0.0293	Yes	11	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2054	0.1781	0.0293	Yes	11	0	No	0.01	Param.

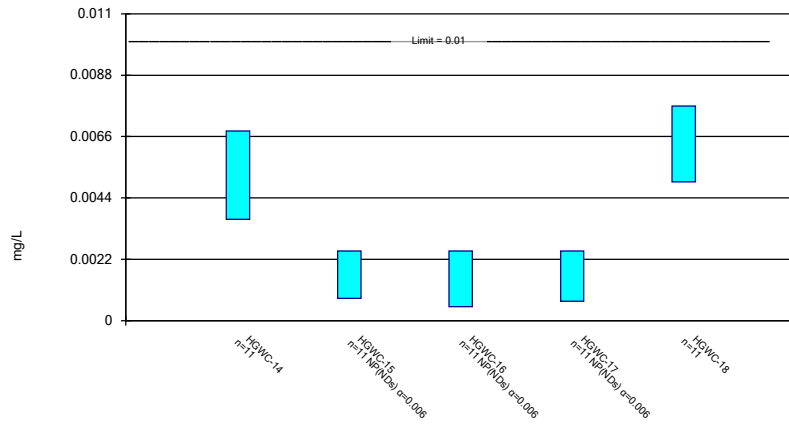
Summary of Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2 Printed 1/24/2019, 12:20 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006795	0.003638	0.01	No	11	9.091	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.0025	0.0008	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.0025	0.0005	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.0025	0.0007	0.01	No	11	72.73	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.007701	0.004979	0.01	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0244	0.02	2	No	11	9.091	No	0.006	NP (normality)
Barium (mg/L)	HGWC-15	0.03415	0.0247	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.108	0.09317	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.02606	0.02237	2	No	11	0	No	0.01	Param.
Barium (mg/L)	HGWC-18	0.0349	0.028	2	No	11	9.091	No	0.006	NP (normality)
Cadmium (mg/L)	HGWC-14	0.0005	0.0001	0.005	No	11	27.27	No	0.006	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002822	0.00158	0.005	No	11	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0005	0.0005	0.005	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0005	0.00007	0.005	No	11	90.91	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002587	0.002026	0.005	No	11	9.091	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-14	0.02903	0.02089	0.0293	No	11	9.091	x^2	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05707	0.03776	0.0293	Yes	11	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.005	0.0293	No	11	100	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01668	0.01468	0.0293	No	11	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.2054	0.1781	0.0293	Yes	11	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3117	0.1283	4	No	12	25	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.2892	0.122	4	No	12	41.67	x^(1/3)	0.01	Param.
Fluoride (mg/L)	HGWC-16	0.3301	0.09924	4	No	12	41.67	No	0.01	Param.
Fluoride (mg/L)	HGWC-17	0.3727	0.05627	4	No	12	41.67	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-18	0.7012	0.3771	4	No	12	8.333	No	0.01	Param.
Lithium (mg/L)	HGWC-14	0.0125	0.0125	0.04	No	11	100	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-15	0.0125	0.0013	0.04	No	11	45.45	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-16	0.0037	0.0025	0.04	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-17	0.0125	0.0011	0.04	No	11	90.91	No	0.006	NP (NDs)
Lithium (mg/L)	HGWC-18	0.01538	0.01364	0.04	No	11	0	No	0.01	Param.
Selenium (mg/L)	HGWC-14	0.01698	0.009712	0.05	No	11	0	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.005	0.0012	0.05	No	11	72.73	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-16	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-17	0.005	0.0014	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03894	0.01999	0.05	No	11	9.091	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	10	10	No	0.011	NP (normality)
Thallium (mg/L)	HGWC-15	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-16	0.0005	0.0005	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-17	0.0005	0.0001	0.002	No	11	81.82	No	0.006	NP (NDs)
Thallium (mg/L)	HGWC-18	0.0005	0.00014	0.002	No	11	63.64	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-14	1.693	1.164	5	No	11	45.45	No	0.01	Param.
Total Radium (pCi/L)	HGWC-15	0.675	0.675	5	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-16	0.675	0.675	5	No	11	90.91	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-17	0.675	0.675	5	No	11	100	No	0.006	NP (NDs)
Total Radium (pCi/L)	HGWC-18	2.395	1.471	5	No	11	9.091	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

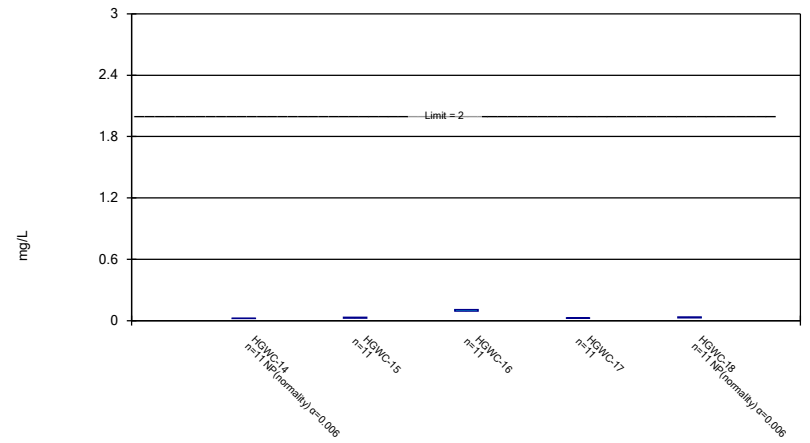
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 1/24/2019 12:16 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

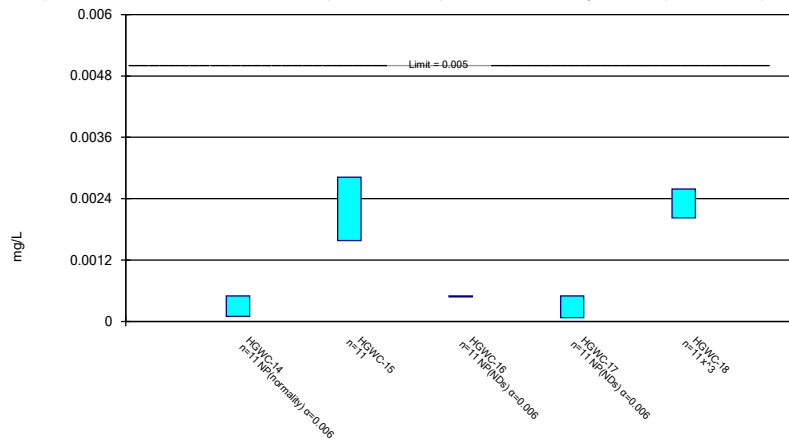
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 1/24/2019 12:16 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

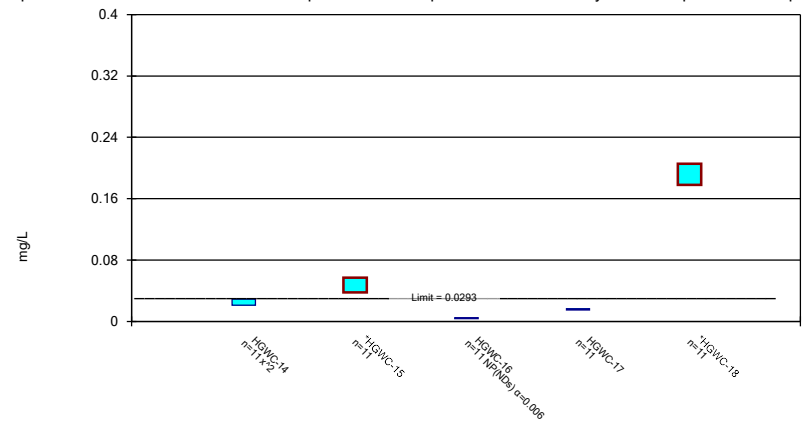
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 1/24/2019 12:16 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 1/24/2019 12:16 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 1/24/2019 12:20 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.00268 (J)	<0.005	<0.005	<0.005	
5/24/2016					0.00294 (J)
7/12/2016	0.0059	<0.005	<0.005	<0.005	0.0074
9/1/2016	0.0056	<0.005	<0.005	<0.005	0.0073
10/24/2016	0.0058	<0.005			
10/25/2016			<0.005	<0.005	0.006
12/7/2016	<0.005	<0.005	<0.005	<0.005	
12/8/2016					0.007
1/26/2017	0.0089	<0.005	<0.005	<0.005	0.0068
3/22/2017			0.0005 (J)	0.0007 (J)	
3/23/2017	0.0069	0.0008 (J)			0.0082
5/24/2017	0.0048 (J)	<0.005	<0.005		
5/25/2017				0.0007 (J)	0.006
4/3/2018		<0.005	<0.005	<0.005	0.0062
4/4/2018	0.0052				
6/5/2018					0.008
6/6/2018	0.0059	<0.005	<0.005	0.00097 (J)	
10/3/2018	0.0032 (J)	<0.005	<0.005	<0.005	0.0039 (J)
Mean	0.005216	0.002345	0.002318	0.002034	0.00634
Std. Dev.	0.001894	0.0005126	0.000603	0.0008018	0.001633
Upper Lim.	0.006795	0.0025	0.0025	0.0025	0.007701
Lower Lim.	0.003638	0.0008	0.0005	0.0007	0.004979

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 1/24/2019 12:20 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.2	0.0315 (J)	0.0841	0.0222 (J)	
5/24/2016					<0.2
7/12/2016	0.0214	0.0372	0.0886	0.0221	0.0346
9/1/2016	0.0208	0.0364	0.0934	0.0227	0.0336
10/24/2016	0.0208	0.0326			
10/25/2016			0.0991	0.0225	0.0349
12/7/2016	0.022	0.0301	0.101	0.0227	
12/8/2016					0.0339
1/26/2017	0.0238	0.0287	0.105	0.0229	0.0293
3/22/2017			0.11 (J)	0.0248 (J)	
3/23/2017	0.0244	0.0329			0.0313
5/24/2017	0.0228	0.0283	0.106		
5/25/2017				0.0255	0.0336
4/3/2018		0.019 (J)	0.099 (J)	0.025 (J)	0.028 (J)
4/4/2018	0.021				
6/5/2018					0.03
6/6/2018	0.022	0.022	0.11	0.028	
10/3/2018	0.02	0.025	0.11	0.028	0.032
Mean	0.029	0.02943	0.1006	0.02422	0.03829
Std. Dev.	0.02359	0.005667	0.008869	0.002215	0.02059
Upper Lim.	0.0244	0.03415	0.108	0.02606	0.0349
Lower Lim.	0.02	0.0247	0.09317	0.02237	0.028

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 1/24/2019 12:20 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000139 (J)	0.00271 (J)	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001	0.0019	<0.001	<0.001	0.0022
9/1/2016	0.0001 (J)	0.0017	<0.001	<0.001	0.0024
10/24/2016	0.0002 (J)	0.0018			
10/25/2016			<0.001	<0.001	0.0022
12/7/2016	0.0001 (J)	0.0018	<0.001	<0.001	
12/8/2016					0.0024
1/26/2017	<0.001 (*)	0.0013	<0.001	<0.001	0.0025
3/22/2017			<0.001	7E-05 (J)	
3/23/2017	0.0002 (J)	0.002			0.0025
5/24/2017	0.0001 (J)	0.0041	<0.001		
5/25/2017				<0.001	0.0027
4/3/2018		0.0022	<0.001	<0.001	0.0022
4/4/2018	<0.001				
6/5/2018					0.0022
6/6/2018	0.00012 (J)	0.0021	<0.001	<0.001	
10/3/2018	0.0001 (J)	0.0026	<0.001	<0.001	0.0027
Mean	0.0002326	0.002201	0.0005	0.0004609	0.002227
Std. Dev.	0.0001756	0.000745	0	0.0001296	0.0006035
Upper Lim.	0.0005	0.002822	0.0005	0.0005	0.002587
Lower Lim.	0.0001	0.00158	0.0005	7E-05	0.002026

Confidence Interval

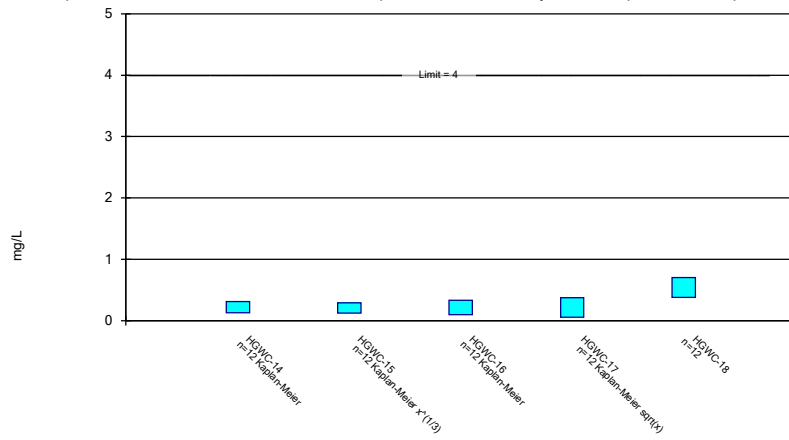
Constituent: Cobalt (mg/L) Analysis Run 1/24/2019 12:20 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.01	0.0419 (J)	<0.01	0.0167	
5/24/2016					0.17 (J)
7/12/2016	0.0232	0.0393	<0.01	0.0148	0.168
9/1/2016	0.0248	0.045	<0.01	0.0151	0.18
10/24/2016	0.0253	0.0557			
10/25/2016			<0.01	0.0141	0.188
12/7/2016	0.0269	0.0536	<0.01	0.0141	
12/8/2016					0.206
1/26/2017	0.0294	0.055	<0.01	0.0154	0.195
3/22/2017			<0.01	0.0169	
3/23/2017	0.0311	0.0715			0.223
5/24/2017	0.0279	0.0446	<0.01		
5/25/2017				0.0154	0.209
4/3/2018		0.032	<0.01	0.016	0.19
4/4/2018	0.025				
6/5/2018					0.19
6/6/2018	0.027	0.032	<0.01	0.018	
10/3/2018	0.023	0.051	<0.01	0.016	0.19
Mean	0.02442	0.04742	0.005	0.01568	0.1917
Std. Dev.	0.006901	0.01159	0	0.001199	0.01639
Upper Lim.	0.02903	0.05707	0.005	0.01668	0.2054
Lower Lim.	0.02089	0.03776	0.005	0.01468	0.1781

Parametric Confidence Interval

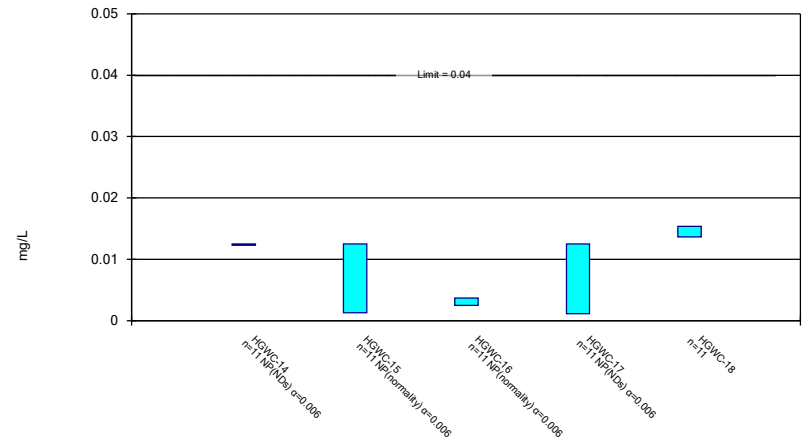
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 1/24/2019 12:16 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

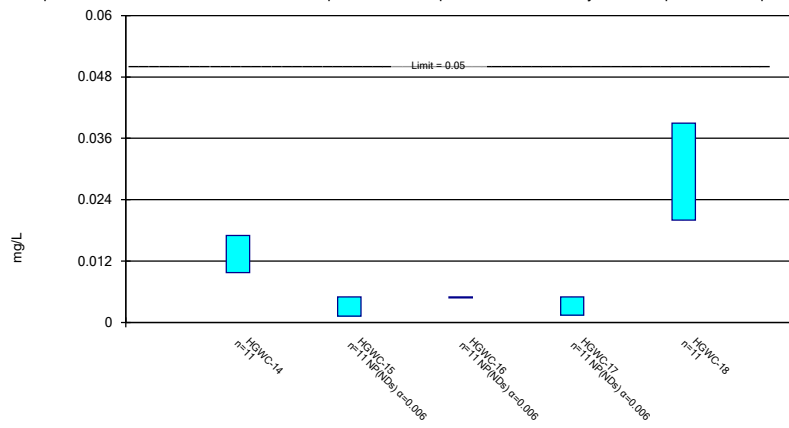
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 1/24/2019 12:16 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

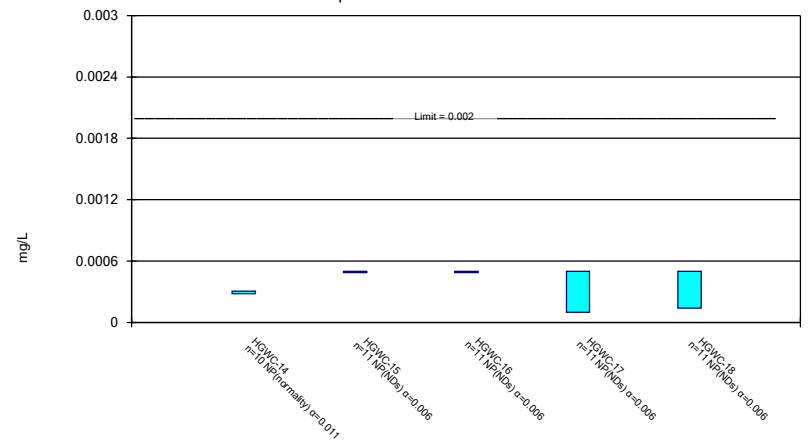
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 1/24/2019 12:17 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 1/24/2019 12:17 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 1/24/2019 12:20 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.3	<0.3	0.038 (J)	<0.3	
5/24/2016					<0.3
7/12/2016	0.2 (J)	0.09 (J)	0.26 (J)	0.09 (J)	0.54
9/1/2016	0.08 (J)	0.22 (J)	0.42 (J)	0.03 (J)	0.49 (J)
10/24/2016	<0.3 (*)	<0.3 (*)			
10/25/2016			<0.3 (*)	<0.3 (*)	0.58
12/7/2016	0.11 (J)	0.23 (J)	0.23 (J)	0.54 (J)	
12/8/2016					0.63 (J)
1/26/2017	0.13 (J)	<0.3	0.02 (J)	<0.3	0.71 (J)
3/22/2017			0.3	0.07 (J)	
3/23/2017	0.28 (J)	0.12 (J)			0.57
5/24/2017	0.32	0.31	0.46		
5/25/2017				0.42	0.54
10/4/2017	0.52	0.6	<0.3	0.93	0.95
4/3/2018		<0.3	<0.3	<0.3	0.33
4/4/2018	<0.3				
6/5/2018					0.66
6/6/2018	0.25 (J)	0.17 (J)	<0.3	0.23 (J)	
10/3/2018	0.21 (J)	<0.3	<0.3	<0.3	0.32
Mean	0.2125	0.2075	0.2065	0.255	0.5392
Std. Dev.	0.1202	0.1364	0.1352	0.2579	0.2065
Upper Lim.	0.3117	0.2892	0.3301	0.3727	0.7012
Lower Lim.	0.1283	0.122	0.09924	0.05627	0.3771

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 1/24/2019 12:20 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<0.025	<0.025	<0.025	<0.025	
5/24/2016					0.0142 (J)
7/12/2016	<0.025	<0.025	0.0037 (J)	<0.025	0.0141 (J)
9/1/2016	<0.025	0.0021 (J)	0.0033 (J)	<0.025	0.0158 (J)
10/24/2016	<0.025	<0.025			
10/25/2016			0.0029 (J)	<0.025	0.016 (J)
12/7/2016	<0.025	<0.025	0.0029 (J)	<0.025	
12/8/2016					0.0144 (J)
1/26/2017	<0.025	<0.025	0.0028 (J)	<0.025	0.0136 (J)
3/22/2017			0.0025 (J)	<0.025	
3/23/2017	<0.025	0.0016 (J)			0.0151 (J)
5/24/2017	<0.025	0.0029 (J)	0.0029 (J)		
5/25/2017				0.0011 (J)	0.0154 (J)
4/3/2018		0.0026 (J)	0.0028 (J)	<0.025	0.013 (J)
4/4/2018	<0.025				
6/5/2018					0.013 (J)
6/6/2018	<0.025	0.0013 (J)	0.0031 (J)	<0.025	
10/3/2018	<0.025	0.0017 (J)	0.0026 (J)	<0.025	0.015 (J)
Mean	0.0125	0.006791	0.003818	0.01146	0.01451
Std. Dev.	0	0.005484	0.002898	0.003437	0.001045
Upper Lim.	0.0125	0.0125	0.0037	0.0125	0.01538
Lower Lim.	0.0125	0.0013	0.0025	0.0011	0.01364

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 1/24/2019 12:20 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.017	<0.01	<0.01	<0.01	
5/24/2016					<0.01
7/12/2016	0.0146	<0.01	<0.01	<0.01	0.036
9/1/2016	0.0137	<0.01	<0.01	0.0014 (J)	0.0347
10/24/2016	0.0135	0.0012 (J)			
10/25/2016			<0.01	<0.01	0.0282
12/7/2016	0.01 (J)	0.0041 (J)	<0.01	0.0023 (J)	
12/8/2016					0.0373
1/26/2017	0.0214	<0.01	<0.01	<0.01	0.0385
3/22/2017			<0.01	<0.01	
3/23/2017	0.0167	0.0016 (J)			0.0414
5/24/2017	0.0083 (J)	<0.01	<0.01		
5/25/2017				<0.01	0.019
4/3/2018		<0.01	<0.01	<0.01	0.029
4/4/2018	0.012				
6/5/2018					0.038
6/6/2018	0.014	<0.01	<0.01	<0.01	
10/3/2018	0.0056 (J)	<0.01	<0.01	<0.01	0.017
Mean	0.01335	0.004264	0.005	0.004427	0.02946
Std. Dev.	0.00436	0.001444	0	0.00129	0.01137
Upper Lim.	0.01698	0.005	0.005	0.005	0.03894
Lower Lim.	0.009712	0.0012	0.005	0.0014	0.01999

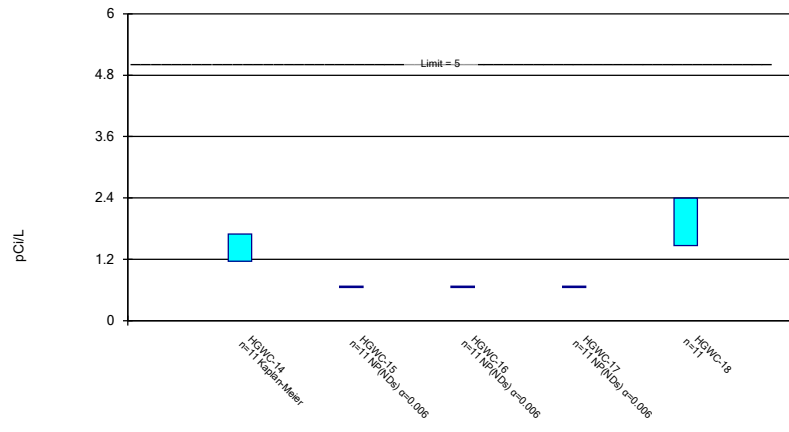
Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 1/24/2019 12:20 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	0.000306 (J)	<0.001	<0.001	<0.001	
5/24/2016					<0.001
7/12/2016	<0.001 (*)	<0.001	<0.001	<0.001 (*)	<0.001 (*)
9/1/2016	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
10/24/2016	0.0004 (o)	<0.001			
10/25/2016			<0.001	<0.001	<0.001
12/7/2016	0.0003 (J)	<0.001	<0.001	<0.001	
12/8/2016					<0.001
1/26/2017	0.0003 (J)	<0.001	<0.001	<0.001	<0.001
3/22/2017			<0.001	0.0001 (J)	
3/23/2017	0.0003 (J)	<0.001			0.0002 (J)
5/24/2017	0.0003 (J)	<0.001	<0.001		
5/25/2017				0.0001 (J)	0.0002 (J)
4/3/2018		<0.001	<0.001	<0.001	0.00014 (J)
4/4/2018	0.00028 (J)				
6/5/2018					0.00016 (J)
6/6/2018	0.00029 (J)	<0.001	<0.001	<0.001	
10/3/2018	0.00029 (J)	<0.001	<0.001	<0.001	<0.001
Mean	0.0003166	0.0005	0.0005	0.0004273	0.0003818
Std. Dev.	6.488E-05	0	0	0.0001618	0.0001648
Upper Lim.	0.000306	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.00028	0.0005	0.0005	0.0001	0.00014

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



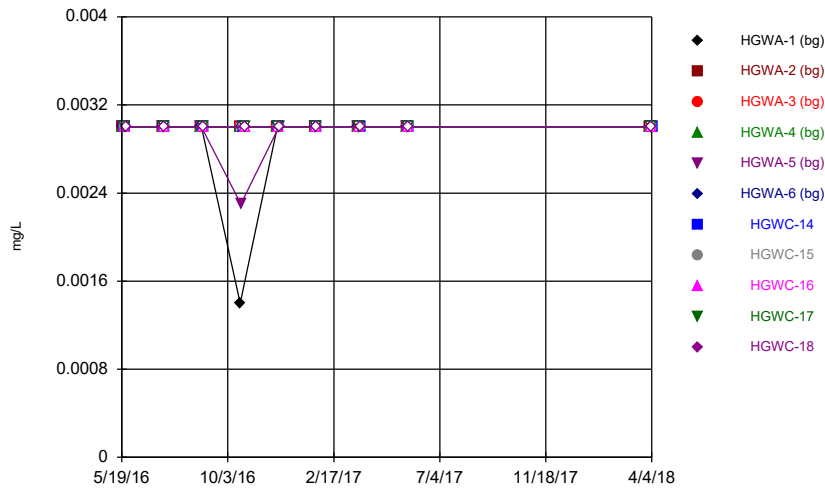
Constituent: Total Radium Analysis Run 1/24/2019 12:17 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Confidence Interval

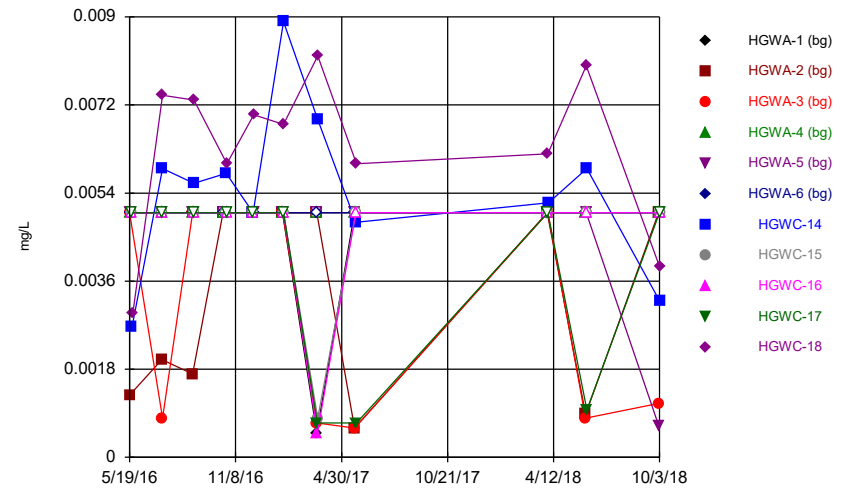
Constituent: Total Radium (pCi/L) Analysis Run 1/24/2019 12:20 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
5/23/2016	<1.35	<1.35		<1.35	
5/24/2016					1.82
7/1/2016			<1.35		
7/12/2016	<1.35 (*)	<1.35	<1.35	<1.35 (*)	<1.35 (*)
9/1/2016	<1.35 (*)	<1.35	<1.35 (*)	<1.35	1.51
10/24/2016	1.88 (J)	<1.35 (*)			
10/25/2016			<1.35	<1.35	2.69 (J)
12/7/2016	1.35	<1.35	<1.35	<1.35	
12/8/2016					2.21
1/26/2017	2.1 (J)	<1.35	<1.35	<1.35	2.26 (J)
3/22/2017			<1.35	<1.35	
3/23/2017	1.17 (J)	<1.35			1.81 (J)
5/24/2017	<1.35	<1.35	1.05		
5/25/2017				<1.35	1.63 (J)
4/3/2018		<1.35	<1.35	<1.35	2.53 (J)
4/4/2018	1.72 (J)				
6/5/2018					1.91
6/6/2018	<1.35	<1.35	<1.35	<1.35	
10/3/2018	1.48 (J)	<1.35	<1.35	<1.35	2.22 (J)
Mean	1.189	0.675	0.7091	0.675	1.933
Std. Dev.	0.5497	0	0.1131	0	0.5547
Upper Lim.	1.693	0.675	0.675	0.675	2.395
Lower Lim.	1.164	0.675	0.675	0.675	1.471

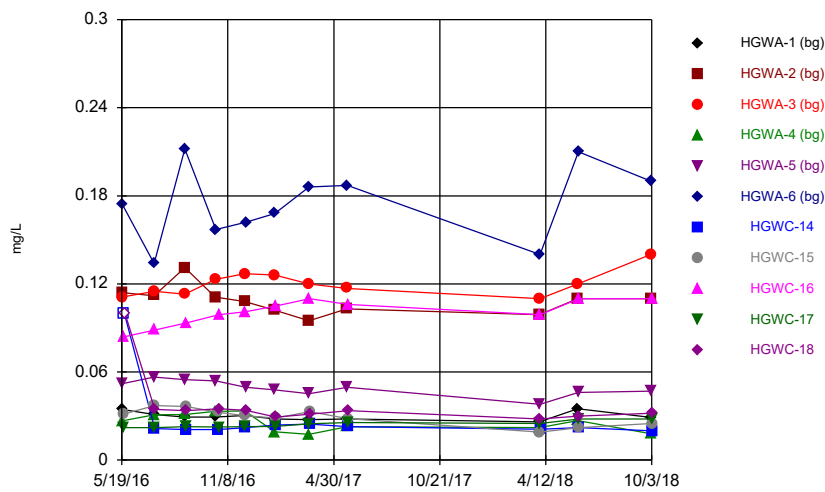
Time Series



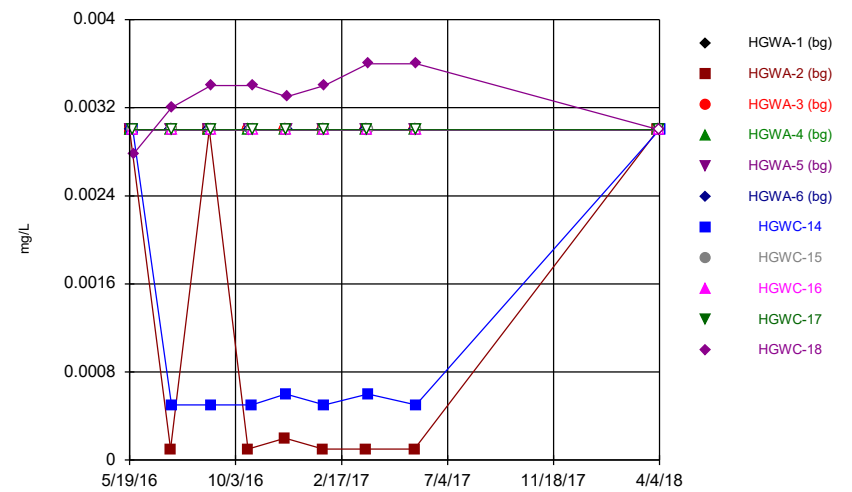
Time Series



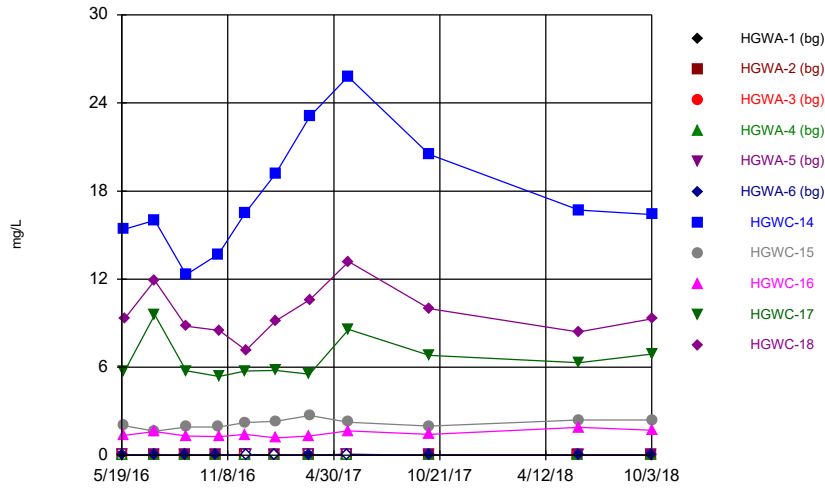
Time Series



Time Series

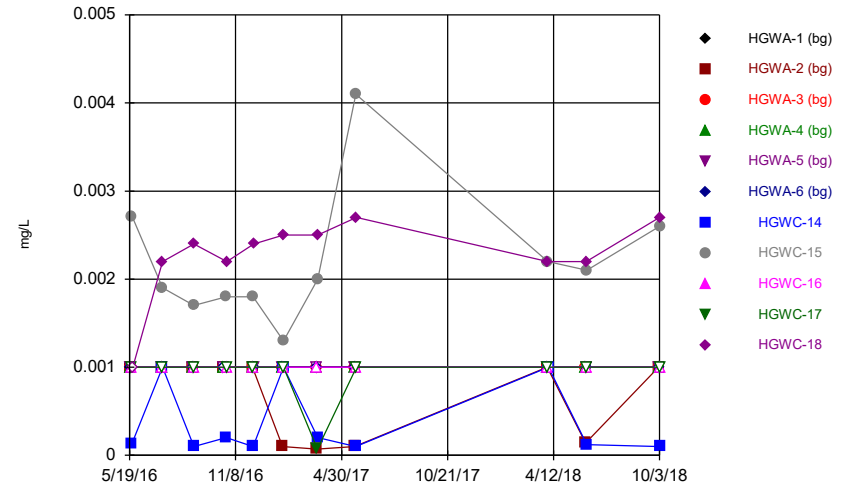


Time Series



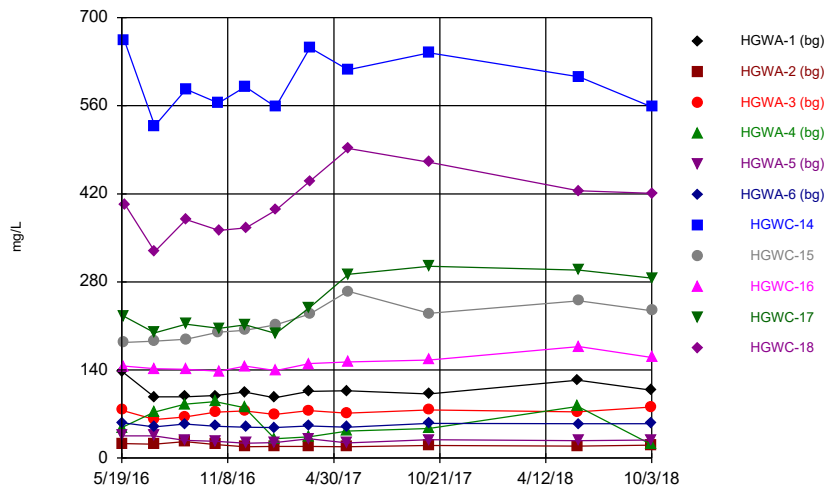
Constituent: Boron Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



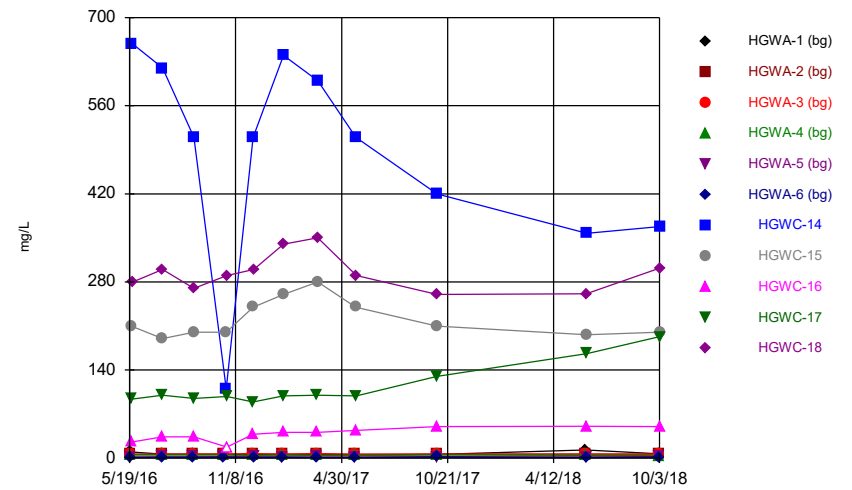
Constituent: Cadmium Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



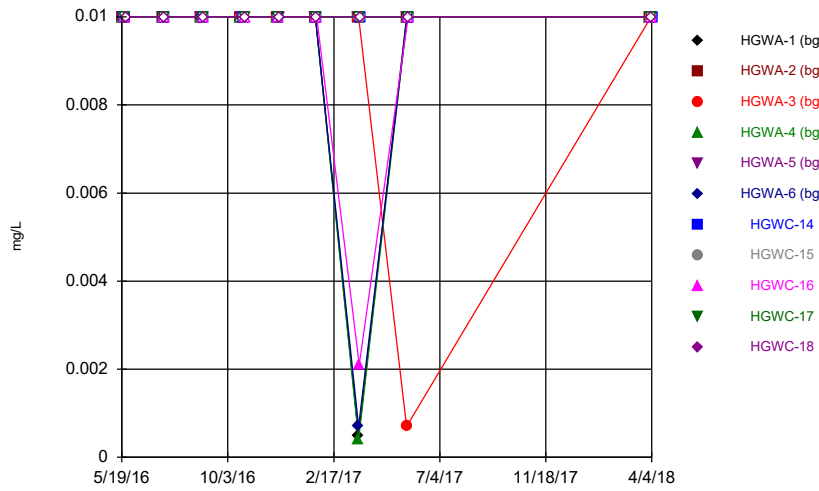
Constituent: Calcium Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series

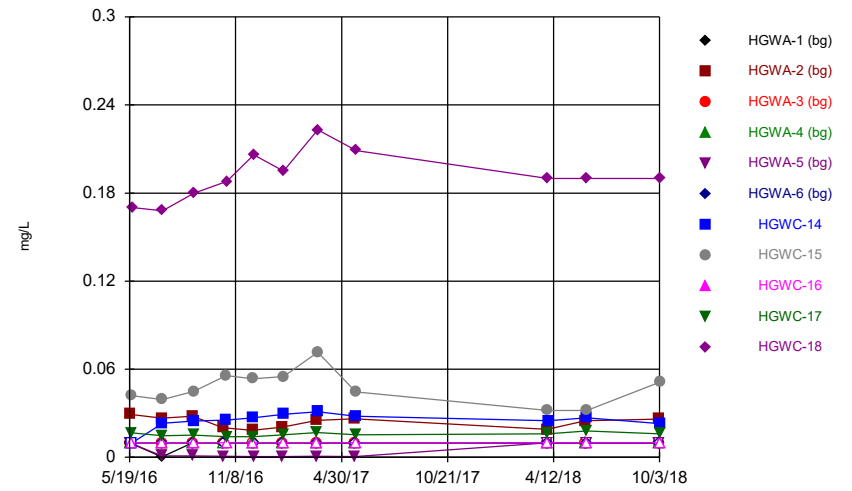


Constituent: Chloride Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

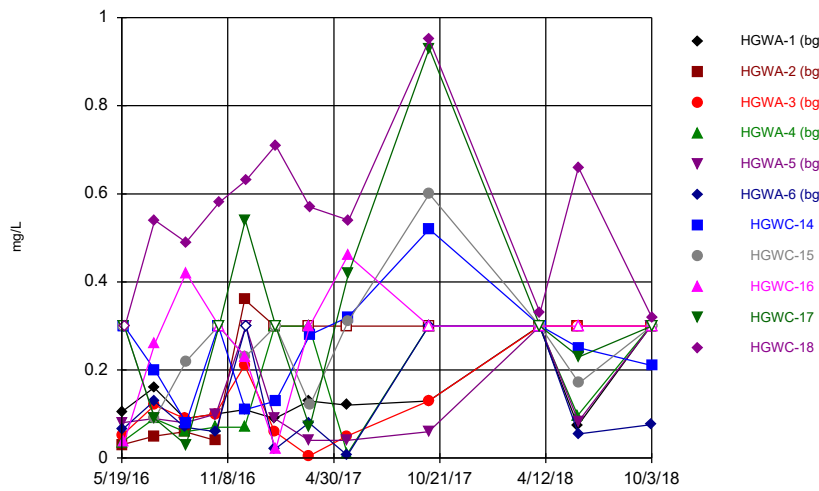
Time Series



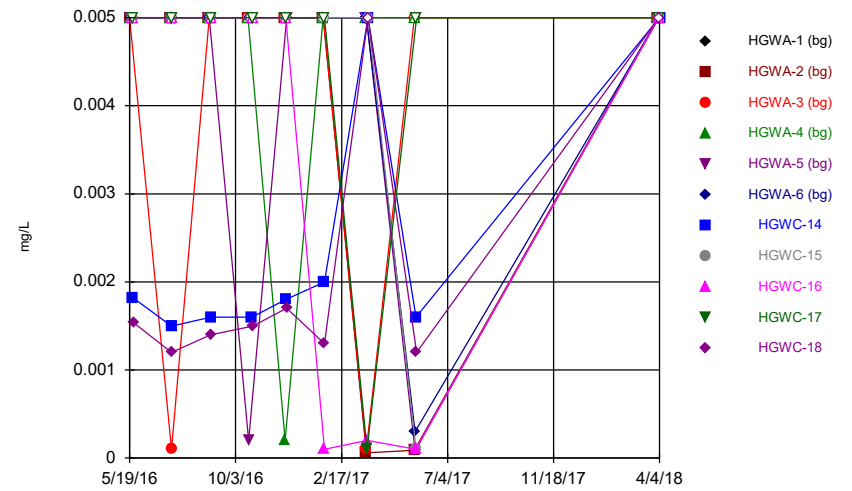
Time Series



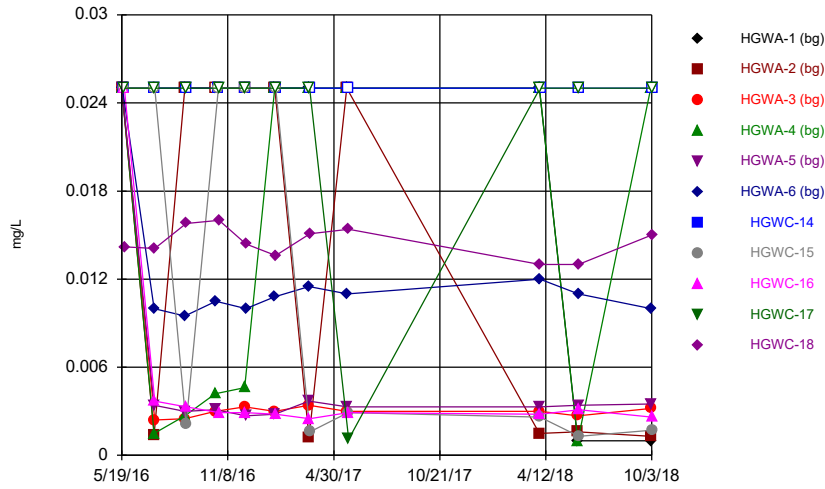
Time Series



Time Series

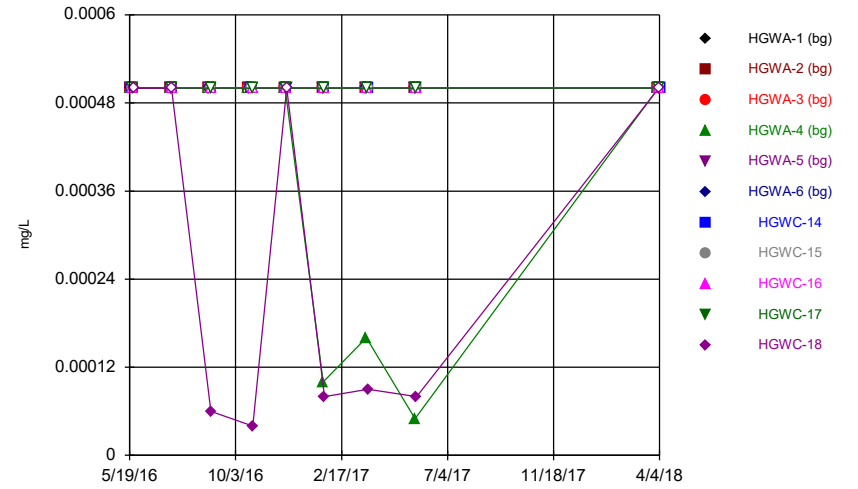


Time Series



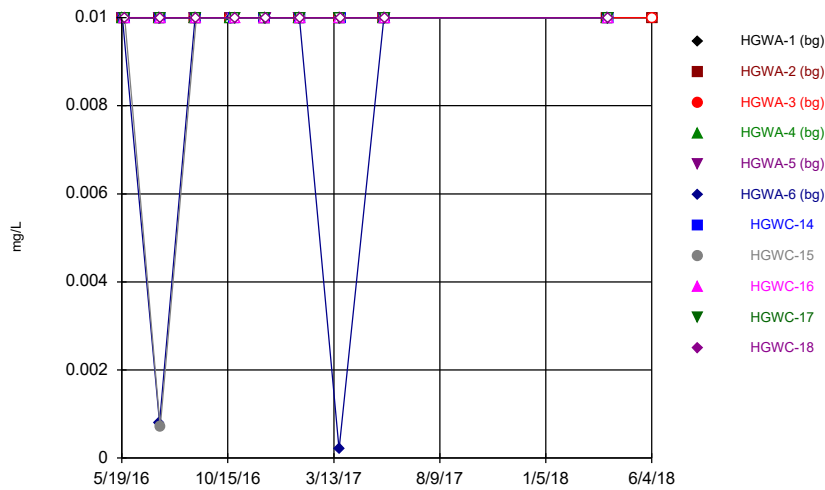
Constituent: Lithium Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



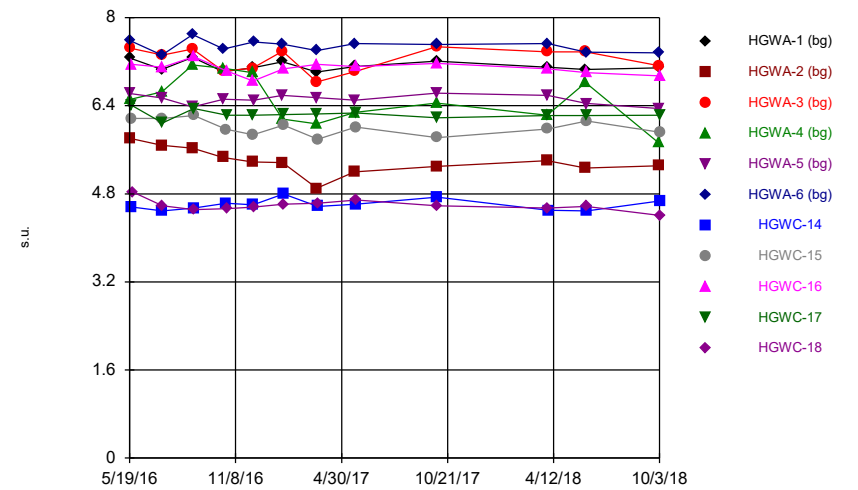
Constituent: Mercury Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



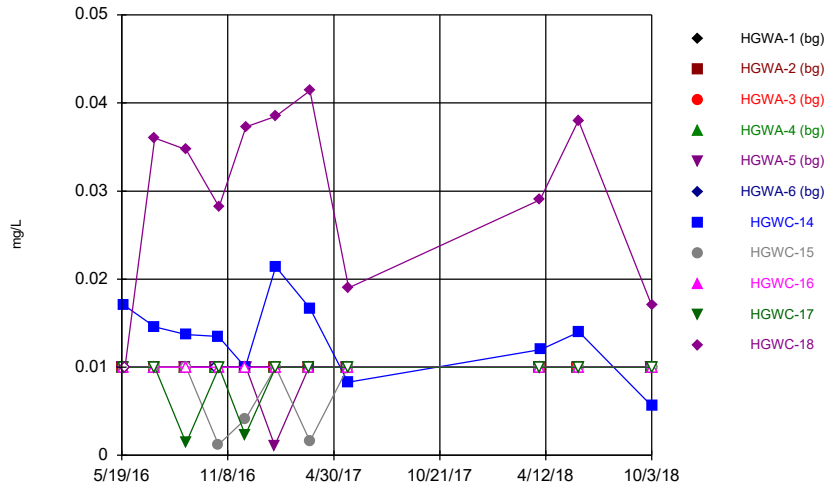
Constituent: Molybdenum Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



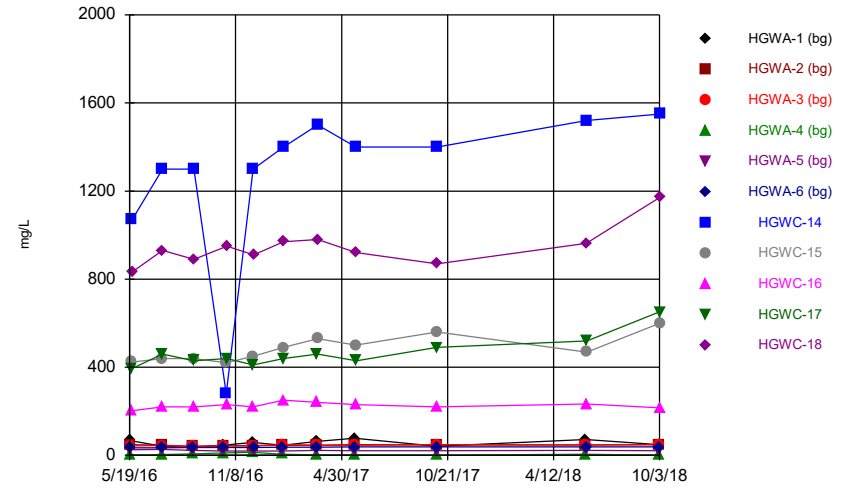
Constituent: pH Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



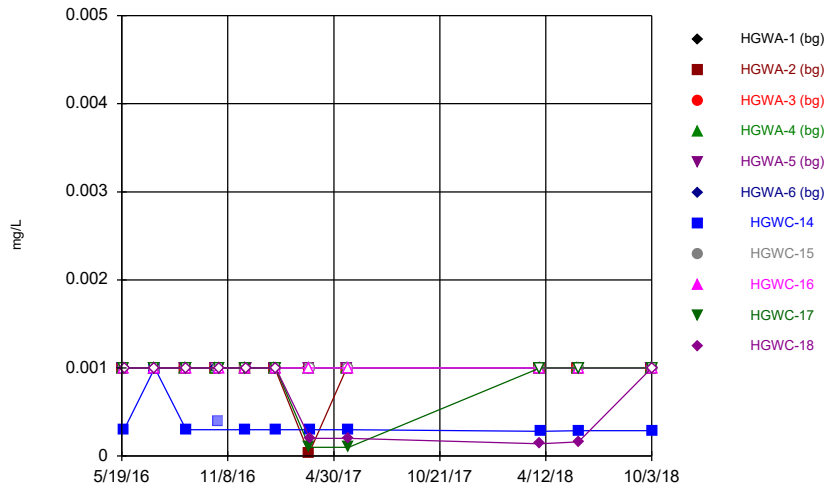
Constituent: Selenium Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



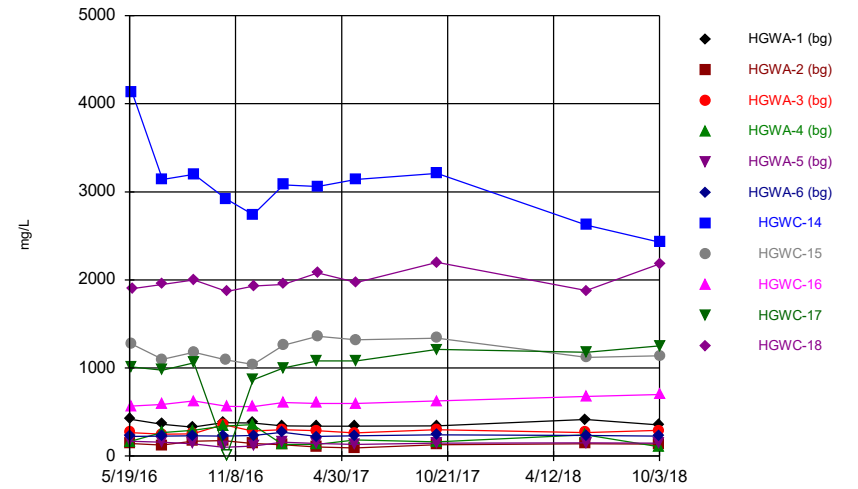
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Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



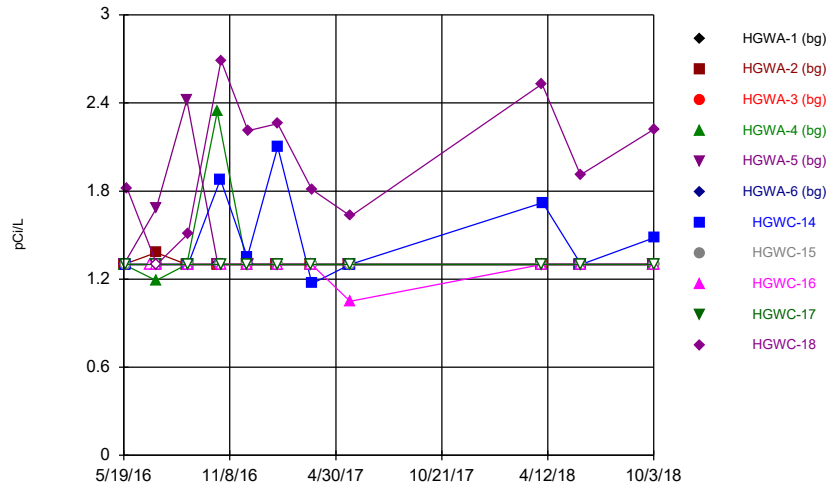
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Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2

Time Series



Constituent: Total Radium Analysis Run 1/24/2019 12:24 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-2